

# Public Beach Access & Recreation in South Carolina

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## Part One

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## Credits

Hartzog, Lader & Richards is an independent professional firm rendering services to public and private organizations for the assessment, planning, design, impact analysis, and implementation of conservation, recreation, and development projects. This study's conclusions and recommendations have been derived solely from the professional judgment of the principals and the following assembled professional staff associates:

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# Introduction

## Part One



This report was funded in part by a grant from the Land and Water Conservation Act made by the Bureau of Outdoor Recreation of the U.S. Department of the Interior.

## Part One

South Carolina beaches, amongst the State's greatest natural resources, represent many things:

\*Sunbathing, swimming, fishing, boating, surfing, picnicking, bicycling, volleyball and touch-football, shell-collecting, jogging, sitting, thinking, and dreaming

\*Vacation, a week or day away from home and work frustrations -- after maneuvering through traffic jams and finding a place to park the car

\*Home for those who have long yearned to live by the sea and for many whose livelihood depends on beach recreation -- so long as land values and taxes do not become so high that older neighborhoods are overrun by more expensive commercial and residential development

\*Posh resorts and private communities with quiet and isolation -- beyond the financial reach of most citizens and rapidly ensnaring prime coastal tracts

\*Potential sites for power plants and industrial factories, offshore oil production, onshore refineries, and moorings for super-tankers

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\*The marriage of land and ocean, whose natural majesty and productivity are part of the national heritage.

Amidst these conflicting demands, most South Carolinians agree that there is a need for State and local governments to ensure the adequacy of public beach access and recreation for present and future generations.

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## Part One

At first glance, the United States seems to offer ample beach for everyone's recreation: 210 million Americans share 84,240 miles of shore. But more than half of this coast is in Alaska, and of the remainder, there are only 12,150 miles of beaches.

Just 6.5 percent of the total national shore is in the public domain, much of it reserved for military use. Only four percent of the coastline is suitable and available for public recreation. One-third of this amount is National Park Service or National Seashore frontage. It is no wonder that Jones Beach hosts six million persons per mile each summer!

Throughout the nation, consequently, coastal recreation has become a major issue. How does government ensure public access, both physical and visual, to the ocean's edge and, at the same time, allow private landowners' enjoyment of their historical and legal property rights?

No Federal law gives the public any right-of-way over private lands to reach the beach. California has placed management of its 1,072-mile seacoast in the hands of a state agency to ensure its use for the public's benefit. The Oregon Supreme Court opened roads and paths leading to the State's shoreline. Asserting that

there is no such thing as a private beach, a Connecticut activist each summer leads busloads of black and Puerto Rican children in scaling walls, landing in small craft, and parachuting from the sky to swim at exclusive beaches. /1/

South Carolina's coastal zone problems are aggravated by the State's great tourism and recreation potential.

How can the State best respond to the projected demand for coastal beaches and water-based recreation within specific environmental, market, and legal parameters? That is the question upon which this study of Public Beach Access and Recreation in South Carolina is premised.



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### The Project

During the autumn and winter of 1974, the South Carolina Department of Parks, Recreation and Tourism (PRT), the Charleston County Park, Recreation and Tourist Commission, and many coastal municipal governments convened hearings to address this problem. The Bureau of Outdoor Recreation (BOR), U.S. Department of Interior, underscored this concern, and participants in a Coastal Plains Regional Commission annual conference called for public action "to save our beaches". Throughout this period the State Legislature was considering several measures which would directly impact the State's coastal recreation resources.

As a result, the State and Charleston County PRT Commissions, BOR, and the State's Coastal Council agreed to fund a comprehensive analysis of the subject. The project would be a qualified planning element of the South Carolina Overall Recreation Plan and, as such, eligible for funding under the Land and Water Conservation Act. In July, 1975, Hartzog, Lader & Richards -- representing experience in conservation, recreation and development -- was commissioned to complete this study.

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As a supplement to the State's overall recreation plan, this study has sought to balance both public and private recreational opportunities. Its objectives are

- \* to develop an integrated coastal plan for conservation, recreational development, and beach access;
- \* to identify coastal recreation nodes where the State may ensure public beach access and adequate recreational opportunities consistent with prudent coastal zone management; and
- \* to propose, generally, effective governmental means of implementing the beach access and recreation plan.

"Recreation" is viewed in its fullest contemporary dimensions, including both active and passive features. Although beach access is the study's focus, ancillary recreational needs also have been determined. But site-specific planning and determination of title to disputed accessways were expressly excluded from the consultant's scope of work.

### Methodology

This multi-disciplinary project has consisted of four phases:

(1) Collection of Existing Data, Maps and Information

All pertinent studies and other information, completed or in progress, were identified, and the most recent and accurate maps, charts and aerial photographs of the coastal area were assembled. Local, regional, State and Federal agencies with planning, management, protection or permitting responsibilities were identified, appropriate officials contacted, and the extent of such responsibilities ascertained.

The consultant team, with the Executive Director of the South Carolina PRT, met with representatives of principal government agencies to secure a comprehensive data base. Extensive environmental, transportation, marketing, demand, usage, motivational and land use studies relating to recreation and beach areas -- previously completed by various state agencies, academic institutions and commercial firms -- were examined.

General information, government reports, and legislative and judicial

records were obtained from coastal jurisdictions throughout the United States and other countries. Extensive research was also conducted at the Library of Congress, Harvard University Library (Law, Design, and Widener), and The University of South Carolina Law Center.

The data base was supplemented by site inspections to locate and evaluate appropriate water-based recreation areas. For citizen input, the consultant team participated in public meetings in each of the three coastal planning districts and attended other relevant hearings in coastal communities.

(2) Review and Analysis

Site evaluation was integrated with analysis of areas of critical environmental concern, unique natural areas, and environmental phenomena. Beach demand was projected and reviewed.

Exhaustive statistical study focused on present and projected beach use demand through 1990. A gravity model was fashioned to analyze day visitation, weekend vacations, extended vacations, in-state and out-of-state visitors. Trends in beach use -- including the characteristics of coastal vacations, expanding vacation markets, and increasingly successful attractions --

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were investigated. A Statewide beach use survey was conducted as primary research.

Local, State and Federal laws and regulations relating to South Carolina beach use were studied. Relevant laws and policies of other states and countries were considered for possible application.

A bibliography of all studies, reports, and publications examined in the study is the final part of this Technical Report.

### (3) Preliminary Plan Development, Public Hearings, and Review

Based on the review, analysis, and projections, a preliminary public beach access and recreation plan was designed. The planning process considered the State Comprehensive Outdoor Recreation Plan (SCORP), related studies, and other planning projects completed or undertaken by other public agencies, such as the Coastal Zone Management Plan and the Heritage Trust Program. Response to a detailed policy questionnaire was sought from the sponsoring agencies and regional planning districts.

The preliminary plan proposed State and local policies, recommended expansion or development of public beach access

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areas, and described legal and administrative mechanisms for plan implementation.

The preliminary plan was submitted to the sponsoring agencies and the SCORP Exchange Council Board members for comment. The consultant met with officials of State and local public agencies to gather suggestions and critiques.

### (4) Final Plan Presentation

The preliminary plan was augmented and reconciled with the sponsors', agencies', and SCORP Exchange Council's recommendations. Three versions of the study were printed:

- \* Preliminary plan (for second phase review).
- \* Technical Report (for distribution by the sponsoring agencies to interested public agencies and municipalities).
- \* Executive Summary of the Technical Report (for distribution by the sponsoring agencies to all interested organizations and individuals, public and private).

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This technical report, therefore,  
consists of eight parts:

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## Part One

### Nature Of The Problem

The problems of public beach access and recreation may be briefly characterized by several intrinsic issues: differences as to what constitutes "public use"; the inadequate present supply of public beach access; beach maintenance and parking problems; environmental imperatives; increasing demand for coastal recreation and shorefront property; the exclusive character of commercial recreation development; the economic importance of beach recreation; inefficient means of allocating coastal land use; and the limited resources available to combat these problems.

#### Definitional Differences

"Public access" generally designates "a location owned or controlled by a public agency, designed to allow the public legal passage to a body of water". /2/ But for the purposes of this study, public ownership of neither the sandy beach nor the uplands is a satisfactory criterion for distinguishing use characteristics.

For example, Surfside Beach, where accessways connect the public road and the beach, may be considered "public"

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even though its oceanfront property is privately owned. Palmetto Dunes Resort, restricting its beach use to residents and guests, is not exclusively "private" because the public willing and able to pay for accommodations have ready access to the beach. Conversely, publicly-owned Cedar and Murphy Islands are no more "public" beaches than privately owned Daufuskie Island since they all lack road access.

This report treats "public" in its broadest sense. The State's beaches and recreation facilities are categorized as follows:

- \*"Public", where people have access because of public ownership, regulations, easements, or other legal accessways, whether or not a fee is required for parking or use;
- \*"Private", where the oceanfront property or facility is privately owned and use is limited to owners and guests; and
- \*"Commercial", where the beachfront or facility is privately owned, typically by a hotel, motel, or resort, but is open to public use upon payment of registration or other fees.

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"Public beach access and recreation" is therefore understood to include both public and commercial resources, but special attention is focused on the need for "public" recreation opportunities in the narrower sense.

### Present Inadequacy

The paucity of direct accessways to the ocean often makes academic any claim of public rights in the foreshore. Legal distinctions between "public" and "private" ownership are frequently meaningless in practice.

All but six of the State's Atlantic islands are privately owned, and each restricts access by the general public in some way. (Exhibit I-1)

The public owns merely 25.2 percent of South Carolina's Atlantic coast. (Exhibit I-2) Forty-seven miles are held by the Federal government, and 24 miles by State and local agencies. /3/

Of the State's 281-mile coastline, 86.6 miles of beachfront are developed, and 61.4 miles are generally accessible by the public. Only 35.9 miles, including the State parks, have both existing road access and parking, and the remaining 23.5 miles permit primarily commercial access. (Exhibit I-3) All of these areas currently experience serious crowding on even normal summer days.

Most of the 37.1 miles of undeveloped beaches are privately owned. (Exhibit I-4) All four publicly owned, undeveloped beaches are inaccessible by road, and only Capers Island is not a wildlife refuge. More than half of the undeveloped ocean beach areas are privately owned and inaccessible by road.

## EXHIBIT I-1

OWNERSHIP STATUS OF SOUTH CAROLINA  
OCEANFRONT ISLANDS

	<u>Undeveloped</u>	<u>Committed for Development *</u>
<u>Federal Ownership:</u>	Cape Bull	
<u>State Ownership:</u>	Cedar Murphy	Capers Hunting
<u>Private Ownership:</u>	Waties North South Deweese Morris Pritchards St. Phillips Bay Point Daufuskie	Pawleys Isle of Palms Sullivans Folly Kiawah Seabrook Botany Bay Edisto Fripp Hilton Head

\* Includes development for recreation, residential, or commercial use.

Source: HLR, October, 1975.

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### EXHIBIT I-2

#### PUBLICLY-OWNED OCEAN SHORELINE

Tract #	Land Use	Acreage	Length of Shoreline	Ownership
<u>Horry County</u>				
20	Park (Hurl Rock)	1.00	.04	Municipal
37	Amusement & Campsite	143.00	.75	Municipal
38	Public Beach (Myrtle Beach)	150.00	6.00	Municipal
72	Park - PRT (Myrtle Beach State Park)	534.00	1.00	State
Total Horry County		828.00	7.99	
<u>Georgetown County (b)</u>				
2	Ocean Access	.22	.02	County
3	Ocean Access	.28	.02	County
38	Game Reserve (Santee)	4,000.00	4.25	State
42	Coast Guard (North Island)	7.40	.11	Federal
Total Georgetown County		4,007.90	4.40	

(a) Sites border Charleston Harbor, but were considered as having ocean shoreline by the study.

(b) Huntington Beach State Park is not publicly owned, but permits public use under a lease arrangement. The park is 2,500 acres in size and has 3 miles of ocean frontage.

Source: Coastal Zone Public Land Ownership Inventory of South Carolina, South Carolina Land Resources Commission, April, 1975.

## EXHIBIT I-2 (con't.)

## PUBLICLY-OWNED OCEAN SHORELINE

Tract #	Land Use	Acreage	Length of Shoreline	Ownership
<u>Charleston County</u>				
191 (a)	Alhambra Hall & Park (Mt. Pleasant)	1.00	.04	Municipal
213	School - Sullivans Island	19.20	.17	Municipal
218	Citadel Beach Club (Isle of Palms)	3.85	.08	State
220 (a)	College of Charleston	3.10	.07	State
230 (a)	Medical University	1.58	.05	State
232	Park - PRT (Edisto Beach State Park)	840.00	1.25	State
238	Game Reserve (Santee Coastal Reserve)	8,000.00	5.50	State
254	Corps of Engineers (Charleston Harbor Site)	34.00	.23	Federal
256	Coast Guard (Sullivans Island)	3.75	.08	Federal
257	Coast Guard (Folly Island)	14.30	.15	Federal
259	Migratory Bird Refuge	34,218.00	46.25	Federal
260 (a)	Park Service (Ft. Sumter)	34.27	.23	Federal
Total Charleston County		43,169.30	54.10	
<u>Beaufort County</u>				
87	Park - PRT (Hunting Island State Park)	8,160.00	4.50	State
94	Hilton Head Survey Tower	.01	.01	Federal
Total Beaufort County		8,160.01	4.51	
South Carolina Total		<u>56,165.21</u>	<u>71.00</u>	

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### EXHIBIT I-3

#### ROAD ACCESS AND PARKING: DEVELOPED BEACH AREAS

##### Existing Road Access/Parking Available

###### Public Access (Total: 61.4 miles\*)

North Myrtle Beach	9.3
Atlantic Beach	0.3
Myrtle Beach	14.3
Myrtle Beach State Park	1.2
Huntington Beach State Park	3.0
Edisto Beach	2.5
Edisto Beach State Park	1.5
Hunting Island State Park	3.8
	<hr/>
	35.9 miles

##### Existing Road Access/Limited Parking Available

Surfside Beach	2.0
Garden City Beach	4.0
North Litchfield Beach	1.5
Litchfield Beach	1.5
Pawleys Island	2.5
Isle of Palms	6.2
Sullivan's Island	2.6
Folly Island	5.2
	<hr/>
	25.5 miles

###### Primarily Commercial Access (Total: 23.5 miles)

Seabrook Island	1.8
Fripp Island	2.3
Hilton Head Island	11.4
Kiawah Island	8.0
	<hr/>
	23.5 miles

\* Approximate length of oceanfront sand beach in miles.

Source: HLR, October, 1975.

## EXHIBIT I-4

## ROAD ACCESS: UNDEVELOPED BEACH AREAS

Existing Road Access

Public Ownership  
(Total: 14.2 miles\*)

Private Ownership  
(Total: 22.9 miles)

Waties Island	2.3
Debidue Beach	3.3
South Island	1.0
	<hr/> 6.6 miles

No Road Access

Cedar Island	2.5
Murphy Island	4.2
Bull Island	5.7
Capers Island	1.8
	<hr/> 14.2 miles

North Island	3.0
Deweese Island	1.8
Pritchards Island	2.5
St. Phillips Island	1.0
Daufuskie Island	3.0
	<hr/> 16.3 miles

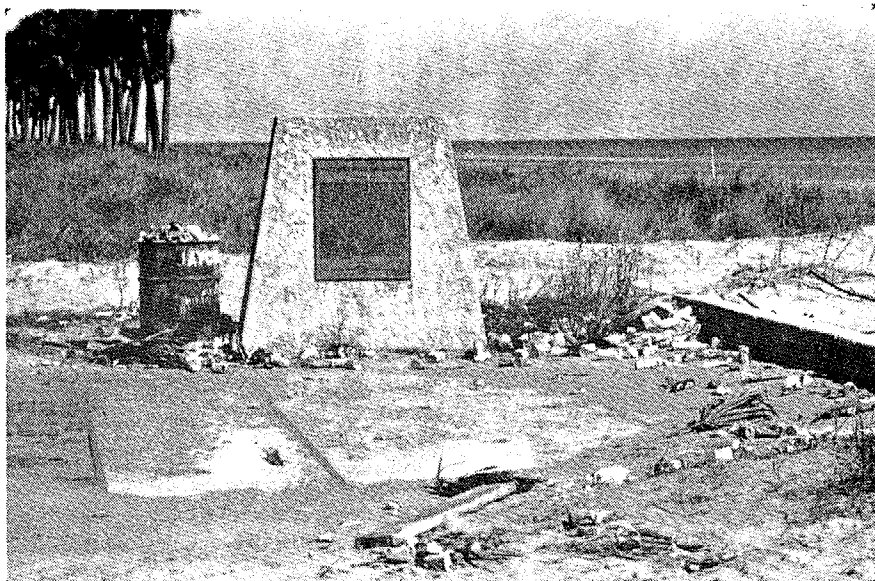
\* Approximate length of oceanfront sand beach in miles.

Source: HLR, October, 1975.



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of a typical beach resort town cannot support these incremental services.

Every South Carolina beach suffers, in varying degrees, from these maintenance problems. Litter is a recurring problem in Myrtle Beach. Maintenance and trash collection are the responsibility of concessionaires, who render these services in return for income from chair, raft, and umbrella rentals. Local government, nonetheless, provides customary sanitation, police, and emergency services.

In smaller beachfront communities like Litchfield Beach, and in the Charleston area, local governments bear the full burden of beach maintenance. Motels occasionally employ lifeguards and clean the beach fronting their property, but other beach areas are not regularly maintained.

Where litter barrels are placed near the road for aesthetic or environmental reasons, such as Folly Beach, people tend to ignore them and scatter debris along the beach. At high tide, the garbage is washed away and redeposited down the beach. Where, as at North Myrtle Beach and Isle of Palms, use of cans and bottles on the beach is prohibited, enforcement is difficult. Few municipalities can afford lifeguard services. And there are few indications that neighboring inland cities or counties would be willing to contribute or share such services.

### Beach Maintenance

Beach maintenance and parking, or the lack thereof, are passionate subjects for beachgoers and townspeople alike. Users complain of beaches fouled with litter and congested with traffic. Town councils argue that "outsiders" require extra lifeguards, beach cleaning services, and police. Neither residents nor visitors are quick to assume these costs of public beach recreation, and the low tax base

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### Parking

Convenient automobile parking is in extremely short supply. On summer mornings, beach access streets are lined with cars, and pedestrians may be seen crossing major thoroughfares, like Middle Boulevard on Sullivans Island, with umbrellas, blankets, ice chests, lounge chairs, and children in tow.

Parallel parking along typically narrow, one-way beach roads usually impinges on private property. Throughout the summer, several cars are almost always parked in front yards of beach cottages, and frequently they belong to neither owners nor guests. Driveways are blocked, fire zones ignored, and street corner clearance reduced. The result: "no parking" signs.

There are few public parking lots in South Carolina's beach communities. Some, like Myrtle Beach, have municipal parking lots that serve commercial areas as well as the beach. But because of the seasonal nature of beach use, most communities are unwilling and financially unable to purchase property for use as a public off-street parking lot. Neither private enterprise nor government has developed inland parking areas, on less expensive land some distance from the

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beach, which can provide shuttle service to the beach.

Beach hotels and motels are required by most local zoning ordinances to provide parking spaces equal to the number of guest rooms. The requirements generally may be met by space either on the property or in a separate lot within a certain distance, 400 feet, of the facility, at Myrtle Beach, for example. Because of the inadequacy of on-street parking, day users often park in these private parking lots, compounding the parking situation by forcing guests to find on-street space.



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### Environmental Imperatives

The coastal ecosystem is a fragile network of natural, economic, and aesthetic, as well as recreational significance. Some beaches are areas of critical environmental concern which can withstand little, if any development impact. Preservation of these places is in the public interest, and respect for the entire coastal environment's irreplaceable character is a national mandate.

The language of conservation, nevertheless, is often used to disguise the psychological

nature of fundamental beach use issues. Tidal beaches and the uplands behind the dunes can absorb, without significant ecological damage, much recreation use. Lovers of solitude may cry, with an appeal to humanist instincts, for easily accessible wilderness area throughout the coast. But like Fifth Avenue's great nineteenth century mansions, secluded private estates may have to be foregone for more intense uses. Scientific analysis of environmental impacts and market demand is often clouded by the preservation liturgy of those with vested interests in limited public access to beaches.

Reasonable densities are often preferred to solitude. Contemporary Americans prefer group recreation, and observation of beach use patterns demonstrates that the majority of users choose to congregate in clusters. It may be argued, consequently, that the State's responsibility is merely to ensure public access and that the seeker of privacy should earn that luxury by walking down the beach.

### Increasing Demand

Fifty-four percent of the nation's population presently lives within the fifty-mile coastal strip that comprises only eight percent of the country's

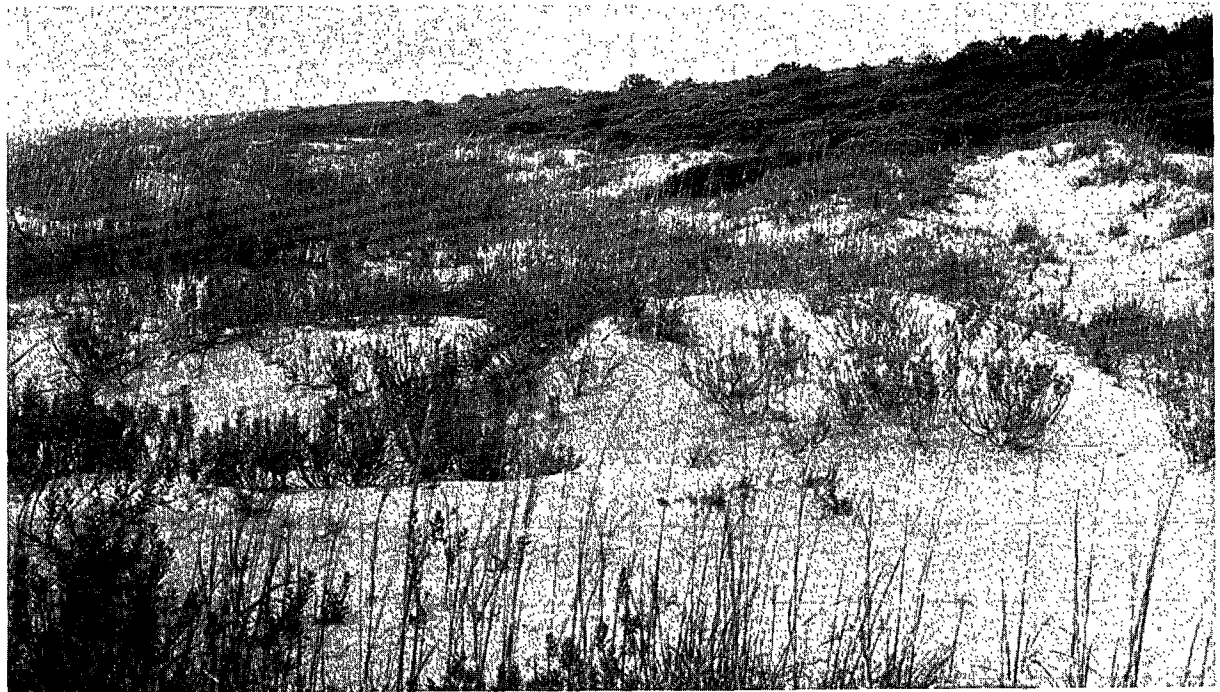
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lands. /4/ Three-fourths of all Americans reside and nine of the ten largest cities are located in the 30 coastal States. /5/ And there is no apparent shift away from this migration to the sea.

Beachfront homesites and recreation areas are more highly prized than ever before. The State's land values are seemingly boundless: the cost per front-

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foot of prime oceanfront property on Hilton Head Island, for example, is \$2,000. An acre of oceanfront property on Myrtle Beach costs more than \$150,000. Kiawah Island, with 4,100 developable acres, was purchased in 1974 for \$17.3 million. Such costs simply reflect an unparalleled demand for beach access and recreation.



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A 1965 BOR Survey, the most comprehensive and authoritative reference in this field, reported that swimming was America's second most popular recreation activity, in terms of user participation, and would be first by 1980. /6/ In 1965, 48 percent of the population (12 years and over) swam an average of 14.3 days each; 30 percent went fishing an average of 7.6 days; 24 percent went boating an average of 6.5 times. /7/

A 1970 BOR survey indicated that per capita participation in both swimming and boating activities had risen nearly 50 percent from 1960 levels. /8/ Projected growth rates for water-oriented recreation activities, illustrated in Exhibit I-5, are staggering.

An exploding urban population with an improved standard of living places inordinate demands upon coastal communities. More people, with more leisure time and more disposable income, have more demands for recreation. New roads, parking areas, campgrounds, vacation homes, and marinas serving this constituency require large amounts of land, consume tax dollars, and are changing the character of most towns near the sea.

The demand is not only for recreation. Development pressures coming from industrial and commercial concerns have been exacerbated by the "energy shortage". Electric

power plants, refineries, and shore support facilities for offshore oil drilling compete with established industrial and recreational coastal land uses. But these may eliminate those attributes that comprise the State's unique coastal recreational experience, namely, clean skies, clean water, long stretches of clean, white sand, and a horizon generally uncluttered by smokestacks and high-rise buildings.

### Commercial Recreation Development

In the past two decades, a few notable private corporations have adopted land-use planning techniques to combat the deterioration of coastal lands into shoddy beach resort "strips". Albeit commercial, such a resort is far more "public" than an inaccessible island under government ownership.

State and local government support of such developments can help guarantee that the demand for coastal recreation is met, to a significant degree, by the private sector. In lieu of public subsidies, these projects are financed through debt amortized by revenues. Their lower densities and more private accommodations service the recreation

## EXHIBIT I-5

GROWTH IN SHORELINE  
RECREATIONAL ACTIVITIES

Activity	Annual Growth Rate (a) (%)	Coastal Participation 1975 (b) (millions)	User Occasions 1975 (c) (millions)
Swimming	3.8	40.5	369
Boating	4.0	28.6	189
Fishing	1.8	29.0	308
Surfing	3.0	1.3	18.5
Skin Diving	5.0	<u>1.6</u>	<u>9.8</u>
		101.0	894.3

Sources:

- (a) Swimming, boating, fishing -- U.S. Bureau of Outdoor Recreation, 1965 Survey of Outdoor Recreation Activities (1967), p. 9 & 11.

surfing -- Merrill, Lynch, Pierce, Fenner & Smith, Inc., Leisure-Investment Opportunities in a \$150 Billion Market (1968), p. 7.

skindiving -- Winslow & Bigler, "A New Perspective on Recreational Use of the Ocean", Undersea Technology, vol. 10, no. 7, (July, 1969), p. 52.

- (b) University of Rhode Island, New England Marine Resources Information Program, Outdoor Recreational Uses of Coastal Areas, No. 1 (1969), p. 18.

- (c) Winslow & Bigler, supra, p. 52.

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wants of a portion of the vacationing public which cannot be ignored in the campaign to open beaches for day-users and other income groups.

Yet because of rising land, financing, and construction costs, few housing and tourism facilities for persons of low and moderate income are now being built along the coast. Existing facilities for these markets are being replaced by higher cost condominiums, apartments, and motels.

The result has been that significant portions of South Carolina's coast have become playgrounds for the affluent. But people of all means cherish the beach experience, and many elderly citizens with fixed incomes have long anticipated retirement by the sea. All of these seek access to the ocean, whether in exclusive communities or traditional neighborhoods.

### Economic Importance

Leisure spending in the United States now exceeds national defense expenditures and exceeds the value of the country's total exports. Recreation spending -- including recreation products, equipment, vacation spending, recreational trips,

and second homes -- exceeded \$105 billion in 1974 and funded about one of every twenty jobs in the country. /9/ The ocean-recreation market comprises almost one-third of total outdoor recreation expenditures. /10/ At least one conclusion is clear: coastal tourism and recreation have a significant impact on regional economic development.

In 1974, 30.9 million non-residents spent \$896.2 million in South Carolina. /11/ Tourism is the State's second largest industry, and beaches are among the greatest attractions. Food, lodging, and other tourism expenditures circulate throughout coastal communities' business network, and travel dollars generate additional trade and payrolls. Beaches, in short, are a major economic resource, and public beach access and recreation are crucial to State and local economic development ambitions.



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### Shoreline Allocation Mechanisms

Coastal zone management requires difficult trade-offs. Increased public recreation, for example, may conflict with conservation objectives or adversely affect private interests. Allocation of land uses requires a delicate balance of physical, market, environmental, legal, political, and social factors.

Existing implementation tools are thought to be incapable of accomplishing these ends without the denigration of traditional property rights and the disintegration of accrued land values. One observer has commented that "traditional institutional arrangements entrusted with the allocation of scarce coastal resources have been incapable of striking a socially optimal balance, not only between conservation and development, but also between private and public use." /12/

One response to these pressures has been enactment of the Coastal Zone Management Act of 1972, introduced by South Carolina's Senator Ernest Hollings. Congress therein declared it the national policy

to preserve, protect, develop, and where possible, to restore or enhance, the resources of

the Nation's coastal zone for this and succeeding generations, and

to encourage and assist the states to exercise effectively their responsibilities in the coastal zone through the development and implementation of management programs to achieve wise use of the land and water resources of the coastal zone giving full consideration to ecological, cultural, historic, and aesthetic values as well as to needs for economic development. /13/

This study has been undertaken as part of such a state program. But State and local governments cannot look to Washington for solutions of beach access and recreation problems.

Through the powers of zoning, subdivision control, acquisition, and eminent domain, municipal governments are in the best position to encourage coastal land uses most consistent with the general welfare. But the particular economic and political contexts of local governments can lead to inefficient allocation on a broad scale:

In the absence of any mechanisms to articulate this regional

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value, the municipality is free to use its powers on behalf of purely local objectives. The difficulty with this situation is that municipalities are in general willing to accept localized benefits when the costs are distributed throughout the region, but, conversely, are not willing to incur costs in order to provide benefits that accrue to the region as a whole. /14/

Beaches can be lost to private development if local communities are more eager to obtain added tax revenues and new jobs.

Not all coastal communities ignore the dangers of indiscriminate development, but some try to preserve their beaches by asserting exclusive claim to that resource. They are unwilling to provide free recreational services at substantial social and economic costs to themselves. The simplest reaction is to restrict use to all but local residents, at least, to discourage non-commercial recreation.

Such action is not irrational. Municipal government is charged with protecting the interests of local residents, not the public at-large. Coastal town charters typically permit provision of municipal beaches sufficient for residents who are not beachfront property owners,

the imposition of discriminatory parking fees to protect these beaches from overcrowding by "outsiders", and the zoning of remaining waterfront for private development to maximize the tax base. Parochial, inefficient, and inequitable from the regional standpoint, such political actions are entirely defensible to local constituents.

### Limited Resources Available

Certain conclusions about the national coastline are generally accepted:

- \*The shoreline has been relegated to private interests;
- \*Pollution, erosion, and competing industrial uses pose a continuing threat;
- \*Most public beaches and recreation facilities are saturated. /15/

These phenomena, equally true in South Carolina, have become acute amidst the nation's realization that its resources, physical and financial, are limited.

## Part One

Just as the supply of coastal lands is limited, relatively few public or private dollars are available for beach recreation development. Land acquisition costs are only the most obvious line item in beach recreation budgets. Intensive use creates a need for additional municipal services. The State and coastal communities serve as playgrounds for the nation, reap substantial economic benefits from beach-oriented tourism, but bear tremendous fiscal burdens as a result. Local governments' tax bases are inadequate to provide required services, and are eroded if valuable beachfront property is removed from the tax rolls for recreation purposes. Moreover, the real estate market's collapse and lenders' severe constraints have slowed private recreation development along the coast and left the most innovative developers inadequately financed to accomplish their public objectives.

## Introduction

As this Plan is being discussed early in the nation's Bicentennial year, there is uncertainty about energy and mineral shortages, government's proper role, and the capacity of public coffers to provide public services. South Carolinians increasingly comment that the post-war era of abundance may be over, that the answers to public problems -- including public beach access and recreation -- may not be found in more government programs and spending. They recognize, nevertheless, that there can be no hiatus in the planning of coastal resources lest development pressures preclude expansion of public recreation opportunities. They ask only that public planning and spending be done "as if people mattered".

# Introduction

## Part One

<sup>1</sup> Bongartz, "Freedom of Beach", New York Times Magazine, July 13, 1975, at 12.

<sup>2</sup> This definition is generally accepted in coastal zone management literature. See. e.g., New Hampshire Public Water Bodies and Public Access Points, Part II, State of New Hampshire State Planning Project, Concord, NH, September, 1965.

<sup>3</sup> Regional Inventory Report of Shoreline Erosion, U.S. Army Corps of Engineers, Charleston District (Draft Report, 1975), at 4.

<sup>4</sup> Excluding Alaska and Hawaii, U.S. Department of Commerce Bureau of the Census, Statistical Abstract of the United States, 1972, at 6.

<sup>5</sup> U.S. Department of Interior, Bureau of Outdoor Recreation, "Outdoor Recreation Action", Fall, 1975, at 6.

<sup>6</sup> U.S. Bureau of Outdoor Recreation, 1965 Survey of Outdoor Recreation Activities, Washington, D.C., 1964, at 9.

<sup>7</sup> Ibid., at 9-11.

<sup>8</sup> U.S. Bureau of Outdoor Recreation, The 1970 Survey of Outdoor Recreation Activities, Preliminary Report, Washington, D.C., 1972, at 9.

<sup>9</sup> Recreation in the Coastal Zone, U.S. Department of Interior, Bureau of Outdoor Recreation, 1975, at 9.

## Part One

## Introduction

10 Winslow & Bigler, "A New Perspective on Recreational Use of the Ocean", Undersea Technology, vol. 10, no.7, July, 1969, at 53.

11 South Carolina Department of Parks, Recreation and Tourism, 1974 South Carolina Travel Study - Summary Report, 1975.

12 See, e.g., Ducsik, Shoreline for the Public, M.I.T. Press, 1973, at 5.

13 Coastal Zone Management Act of 1972, Sec. 303(a)-(b).

14 Ducsik, supra, at 74.

15 Ducsik, supra.



## Part Two

### A Look At South Carolina Beaches

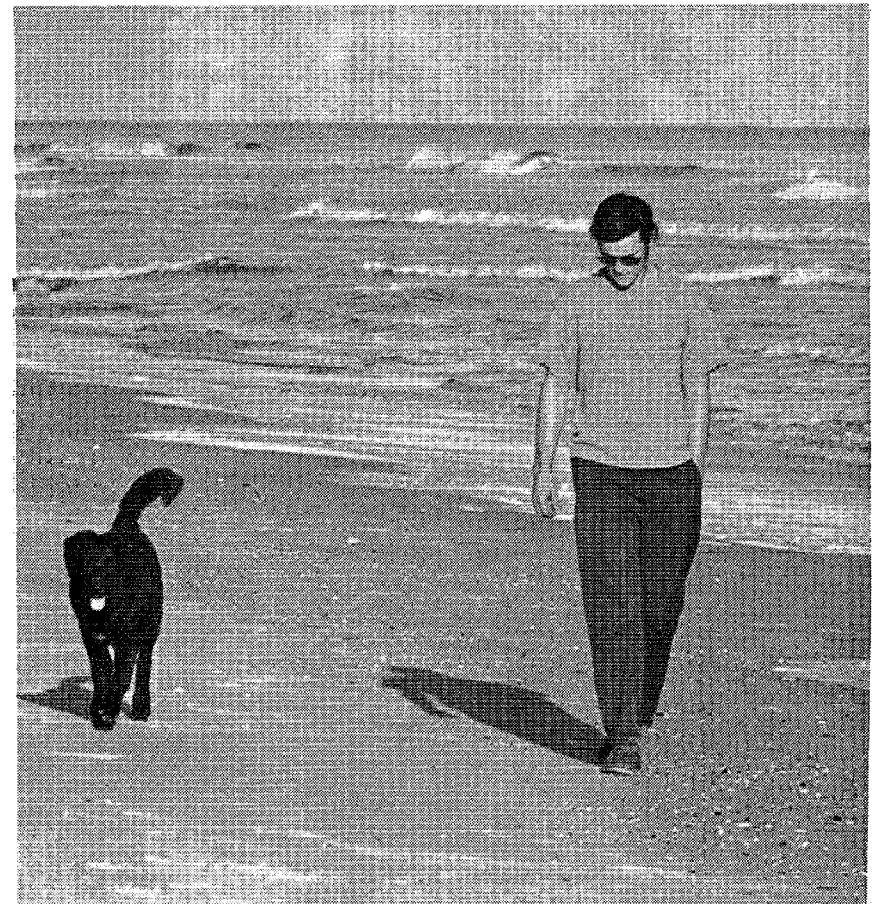
South Carolina's 281-mile Atlantic shoreline includes some of the nation's finest beaches. Along the 60-mile Grand Strand, from the State's northern boundary to Winyah Bay, are North Myrtle Beach, Atlantic Beach, Myrtle Beach, Surfside Beach, Garden City Beach, Huntington Beach, North Litchfield Beach, Litchfield Beach and Pawleys Island. Charleston County beaches are located on Bulls Island, Isle of Palms, Sullivans Island, Folly Island, Kiawah Island, Seabrook Island, and Edisto Island. Hilton Head Island, Fripp Island, Hunting Island, and Daufuskie Island comprise Beaufort County's beaches. In addition, there are several tracts and reservations along the shoreline which have potential recreational use.

In this study, each South Carolina beach was examined in detail for physical, aesthetic, and subjective factors not surfaced by market, environmental, or legal analysis. Distribution of the coastal area's 56 golf courses, 80 boat ramps, 14 fishing piers, 222 playgrounds, and historic sites was also noted.

The beaches were visited by multi-disciplinary fact-finding teams, and local community leaders were interviewed. Descriptive information from previously published planning reports was reviewed. The resultant

## South Carolina Beaches

findings have been organized by these topics: (1) Beach Areas Review; (2) Coastal Recreation Facilities; (3) Recreational Carrying Capacity; (4) Non-motorized Access; (5) Public Acquisitions; and (6) Economic Perspective.





# South Carolina Beaches

## Part Two

### Beach Areas Review

South Carolina's ocean beaches may best be reviewed according to the Coastal Zone's three distinct regions: Waccamaw, Charleston, and the Low Country. (Exhibit II-1) The northern segment (Horry, Georgetown, and Williamsburg Counties) supports the Myrtle Beach tourism industry well-known for its beachfront motels, condominiums, and mass recreational facilities. The area is characterized by relatively small marsh and estuarine systems and extensive oceanfront beaches. Sport fishery and limited commercial fishery seem to thrive there.

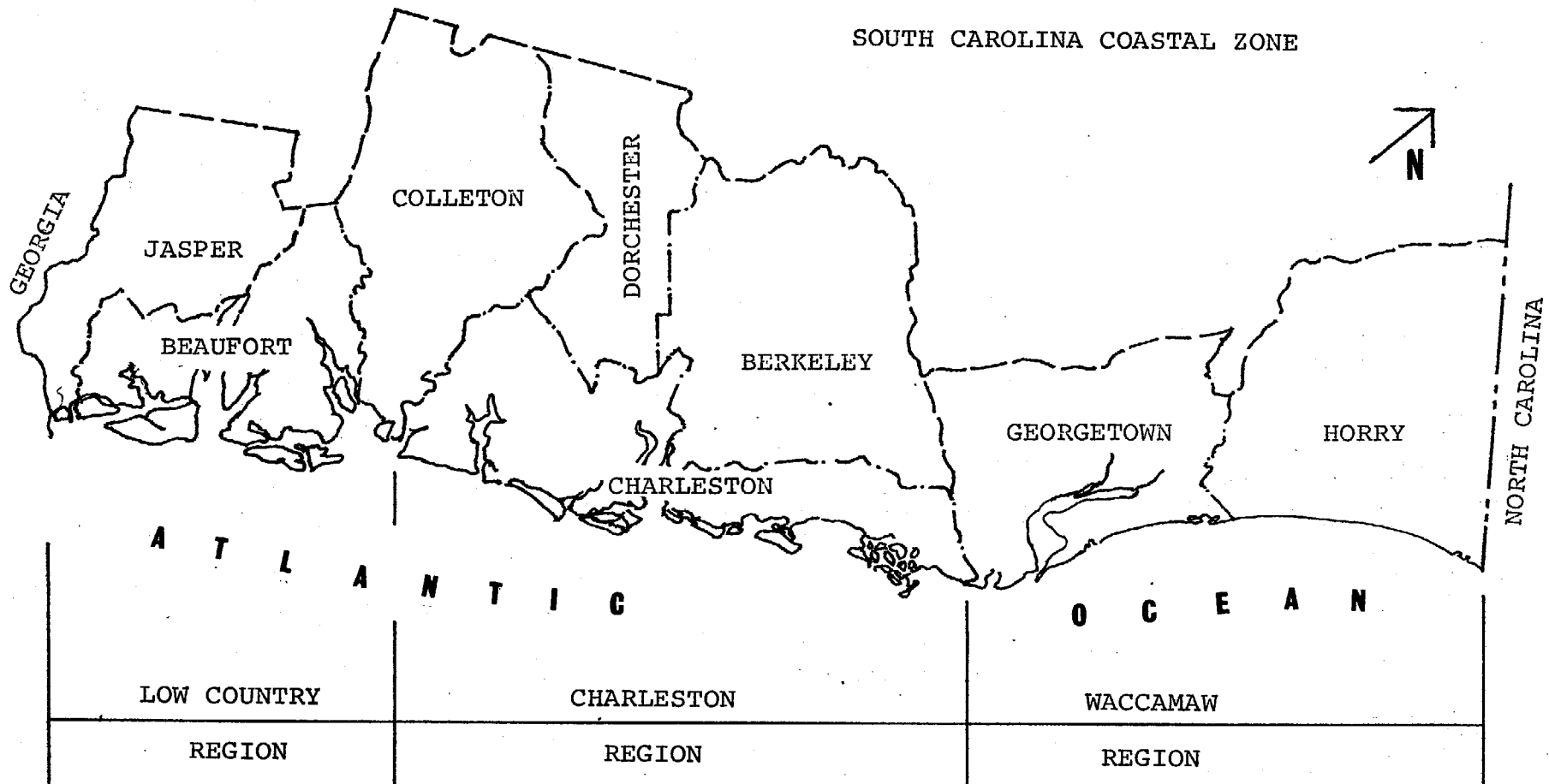
The central region -- Berkeley, Charleston, and Dorchester Counties -- also supports sport and commercial fishery and is characterized by larger marsh and estuarine systems and numerous sea islands. It is the major permanent population center on South Carolina's coast. There has been extensive port and industrial development in Charleston, and tourism is based on individually-owned beach cottages and cultural and historical attractions.

The southern segment of the coast -- Colleton, Beaufort, and Jasper Counties -- is an extensive marsh, estuarine, and sea island system with viable sport and commercial fisheries. Port and industrial development in the Low Country is limited. Its tourism centers on expensive, tightly controlled semi-private second-home resort communities.

Although the problems of pollution, beach erosion, and industrial development are shared by all three regions, each has its own beach access and recreation characteristics. Exhibit II-2 is a quantitative view of the acreage and beach frontage of South Carolina beaches. In the fold-out maps identifying the State's regional beach areas, major traffic arteries are designated by highway number, and the State's coastal wetlands are shaded. Cross-reference to this Part's consideration of physical carrying capacities and illustrative beach site problems is suggested.

EXHIBIT II-1

SOUTH CAROLINA COASTAL ZONE



# South Carolina Beaches

## Part Two

### EXHIBIT II -2

#### ACREAGE, BEACH FRONTAGE, AND WIDTH OF SOUTH CAROLINA ATLANTIC BEACHES

Name of Beach Area	Total Acres	Miles of Sand Beach	Est. Width of Dry Sand	Beach width between high and low tide
WACCAMAW REGION				
Waties Island	370*	2.3	-	185 feet
North Myrtle Beach	5,600	9.3	0-20 feet	250
Atlantic Beach	118	0.3	80	250
Myrtle Beach	3,800	14.3	20	140
Myrtle Beach State Park	312	1.2	20	200
Surfside Beach	1,187	2.0	60	100
Garden City Beach	970	4.0	50	100
Huntington Beach State Park	2,000*	3.0	20	140
North Litchfield Beach	260	1.5	50	150
Undeveloped IP Property	650	1.0		
Litchfield Beach	180	1.5	75	150
Pawleys Island	170	2.5	50	100
Debidue Beach	460*	3.3	50	100
North Island	770*	8.0	50	100

\* Acreage figures indicated represent high ground. Actual acreage, including low-lying marshlands, has been obtained for the following: Waities Island (790 acres); Huntington Beach (2,500 acres); Debidue Island (1,630 acres); North Island (6,030 acres); Cedar Island (4,050 acres); Murphy Island (6,030 acres); Kiawah Island (6,500 acres); Capers Island (2,260 acres); Dewees Island (1,468 acres); Pritchards Island (3,303 acres); St. Phillips Island (7,700 acres); and Turtle Island (1,700 acres).

(a) Included in immediately preceeding acreage figure.

Source: Hartzog, Lader & Richards.

## EXHIBIT II - 2 (con't.)

ACREAGE, BEACH FRONTAGE, AND WIDTH  
OF SOUTH CAROLINA ATLANTIC BEACHES

Name of Beach Area	Total Acres	Miles of Sand Beach	Est. Width of Dry Sand	Beach width between high and low tide
CHARLESTON REGION				
South Island	300	1.0	0-10	200
Cedar Island	280 *	2.5	0-10	100
Murphy Island	690 *	4.2	0-10	100
Cape Romain Wildlife Refuge	34,230	20.0		
Bull Island	5,426 (a)	5.7	0-10	200
Capers Island	1,168*	1.8	0	100
Deweese Island	821*	1.8	50	100
Isle of Palms	1,600	6.2	50	200
Sullivans Island	750	2.6	50	275
Folly Island	1,483	5.2	0-5	175
Kiawah Island	4,100*	8.0	50	300
Seabrook Island	2,200	1.8	0	100
Edisto Island	28,586	2.5	25	160
Edisto Beach State Park	1,225 (a)	1.5	25	160
LOW COUNTRY REGION				
Hunting Island State Park	5,000	3.8	25	140
Fripp Island	2,000	2.3	50	150
Pritchards Island	537*	2.5	0-10	150
St. Phillips Island	1,900*	1.0	0-10	150
Hilton Head Island	28,000	11.4	50	300
Daufuskie Island	5,000	3.0	-	-
Turtle Island	90 *	-		

# South Carolina Beaches

## Part Two

### Waccamaw Region

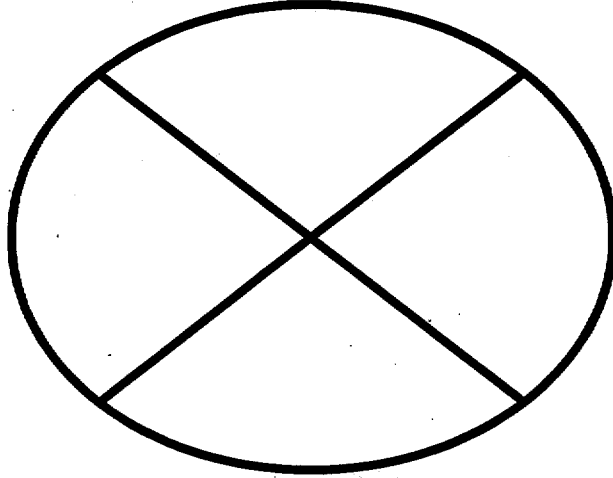
The Waccamaw Region extends from South Carolina's northern border to Waccamaw Neck at Winyah Bay. Its three counties -- Horry, Georgetown, and Williamsburg -- contain an estimated 1975 population of 153,040 persons. (Exhibit II-3) Horry County is most populous (82,400 persons), followed by Georgetown (36,400) and Williamsburg (34,200). Horry's population has increased steadily since 1930, leveling off during the ten-year period of 1960 to 1970. Williamsburg's and Georgetown's populations have been declining since 1950 and 1960, respectively. /1/

The entire Grand Strand -- encompassing parts of both Horry and Georgetown Counties -- has a permanent population of approximately 41,000 persons, with a peak population that ranges between 200,000 and 250,000!

At the height of the summer season, more than 250,000 people can be found enjoying the 50 miles of public beaches, which include two state parks and several large commercial camping grounds. Although sunbathing and swimming are the main attractions, boating, surfing, fishing, and golfing are favorite activities here. It is estimated that some 65% of the civilian labor force in the area is employed in retail trade, entertainment, recreation, and personal services related to tourism. /2/

Because of industrial growth, Georgetown County households have a higher earning profile than either of the other two counties. Williamsburg County is rural: 43 percent of its households earned \$5,000 or less in 1974, and 73.4 percent earned \$10,000 or less during that same period. Only 32.7 percent of Horry County households earn below \$5,000 annually; 18.2 percent earn in excess of \$15,000.

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Myrtle Beach - Grand Strand

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## EXHIBIT II-3

PROJECTED POPULATION OF THE  
SOUTH CAROLINA COASTAL REGION

REGION	<u>1975</u>	<u>1980</u>	<u>1985</u>	<u>1990</u>
WACCAMAW (Horry, Williamsburg, Georgetown Counties)	153,040	147,000	155,780	165,000
CHARLESTON (Berkeley, Charleston, Dorchester Counties)	364,160	376,000	400,060	426,000
LOW COUNTRY (Beaufort, Jasper, Hampton, Colleton Counties)	<u>110,320</u>	<u>107,500</u>	<u>109,480</u>	<u>111,500</u>
TOTAL	627,520	630,500	665,320	702,500

Source: Hartzog, Lader & Richards, September, 1975, from population statistics  
supplied by S.C. State Demographer, Columbia, S.C.

# South Carolina Beaches

## Part Two

### EXHIBIT II-4

#### WACCAMAW RECREATIONAL FACILITIES

	<u>Horry</u>	<u>Georgetown</u>	<u>Williamsburg</u>
Parks	12	10	3
Country Club/Golf Courses	19	5	1
Fishing piers/facilities	16	6	1
Boat ramps	13	6	2
Campgrounds	16	-	-
Amusement parks	5	-	-

Source: Waccamaw Regional Planning Council

The Waccamaw counties' recreational facilities in general public or commercial use are noted in Exhibit II-4. The communities are rich in commercial amusement parks, but the wealth of historic homes and plantations are not open to the public.

Among the Region's major tourism attractions are the wildlife park and sculpture museum of Brookgreen Gardens, near Murrell's Inlet and Georgetown's Rice Museum and Belle Isle Gardens. The general Myrtle Beach area has become one of North America's golfing centers and a principal vacation camping destination.



## Part Two

### Waties Island

The coastline from the North Carolina border to Myrtle Beach is approximately 16 miles long. At the state line is Waties Island, a 790-acre oceanfront island that is nearly two miles long and three-quarters of a mile wide. The mouth of the Little River forms its northern boundary and leads to the Intracoastal Waterway.

Currently under private ownership, Waties Island is the only undeveloped maritime forest and dune area in Horry County. It is teeming with fish and wildlife, and its ocean beach is beautiful and unspoiled. Present access is via an unimproved road.

### North Myrtle Beach

Along the nine miles of coast south of Hog Inlet is an area composed of the four small communities of Cherry Grove Beach, Ocean Drive Beach, Crescent Beach, and Windy Hill Beach. These towns have been incorporated, and are collectively referred to, as North Myrtle Beach.

The area is densely developed with 2,552 hotel and motel rooms, and 3,724 seasonal cottages. /3/ Built on stilts

## South Carolina Beaches

and perched immediately behind the dune line, the cottages and other accommodations house a summer vacation population of some 47,150 persons, compared to approximately three thousand permanent residents. (Exhibit II-5)

Also known as the North Grand Strand, this area is attempting to create its own image as a destination beach resort. North Myrtle Beach advertises "the widest beaches on the Grand Strand", promoting the fact that most beaches are between 250 and 265 feet wide at low tide. Capitalizing on those beaches are hotels, motels, campgrounds, apartments, restaurants, drive-ins, golf courses, entertainment and amusement arcades, souvenir and gift shops, fishing piers, and small shopping centers.

North Myrtle Beach provides the best public access to its beaches of all of the State's oceanfront areas. Thirty-six public streets end at the beach and provide beach access. These public accessways are clearly marked by signs stating "public walk" and are kept open for pedestrian traffic.

# South Carolina Beaches

## Part Two

### EXHIBIT II-5

#### GRAND STRAND POPULATION GROWTH PROJECTIONS

Location*	1972		1977		1982		1992	
	1	2	1	2	1	2	1	2
Cherry Grove	707	14,734	1,138	18,870	1,850	19,900	2,000	23,000
Ocean Drive	583	6,792	938	9,597	1,150	12,500	1,750	16,750
Crescent Beach	400	16,327	535	19,432	725	21,100	850	27,650
Windy Hill Beach	433	7,299	553	8,799	585	9,800	725	10,125
Remaining NMB zones	682	2,002	928	5,428	1,250	7,505	1,725	9,950
Total North Myrtle Beach	2,805	47,154	4,092	62,126	5,560	70,805	7,050	87,475
Atlantic Beach	215	2,375	262	2,712	315	3,125	350	3,725
Ocean Forest	1,510	31,113	1,767	52,080	4,275	61,065	6,150	70,700
Myrtle Beach	1,589	47,755	1,711	53,525	2,345	62,885	2,945	73,550

\* Based on zones designated by Waccamaw Regional Planning & Development Council.

1 = permanent population  
2 = seasonal peak population

Source: Grand Strand Comprehensive Planning Study, Summary of Findings, Waccamaw Regional Planning and Development Council, August, 1973, pp. 13-14.

## Part Two

# South Carolina Beaches

### EXHIBIT II-5

#### GRAND STRAND POPULATION GROWTH PROJECTIONS

Location	1972		1977		1982		1992	
	1	2	1	2	1	2	1	2
Undeveloped	4	132	4	332	8	736	25	1,625
Undeveloped	133	15,472	146	28,085	1,975	30,000	2,750	36,800
Surfside Beach	1,750	6,780	3,521	9,851	5,280	12,850	7,750	17,350
Garden City Beach	734	14,186	1,183	24,211	1,300	29,500	2,527	34,750
Murrell's Inlet	736	1,357	1,186	2,832	1,910	4,050	3,775	5,025
Undeveloped property between Litchfield Beach & Murrell's Inlet	14	694	15	650	18	700	20	750
Litchfield/North Litchfield	110	3,026	155	6,241	710	8,625	900	11,150
Debidue, Waccamaw Neck, North Island	21	21	22	1,466	1,550	8,300	3,100	9,500
Pawleys Island	231	4,077	308	4,430	400	4,575	650	4,950

# South Carolina Beaches

## Part Two

Throughout North Myrtle Beach, 117 pedestrian easements, varying from five to 25 feet, between privately owned oceanfront lots allow for additional public beach access. Almost all of these easements have either been dedicated to the city or recorded on subdivision plats where public use has been established throughout many years. Nevertheless, there are no publicly-owned parking lots, and on-street parking is limited.

Cherry Grove Beach, with more than 700 permanent residents, consists of an Ocean Boulevard commercial strip of beach-front motels and typical beach stores. Two-story wood frame and shingle cottages are divided into apartment units for summer rentals. Other than motel and hotel parking lots, there are no off-street parking facilities for beachgoers.

Ocean Drive Beach, with 583 permanent residents, contains a privately-owned parking area accommodating approximately 375 cars that fronts on the beach adjacent to an amusement park. The parking facilities are often used by beachgoers, who do not necessarily patronize the amusement park. The beach is especially popular with teenagers.

Crescent Beach, similar in physical appearance to Cherry Grove Beach, is marked by two-story beach houses and many motel complexes. Its permanent population exceeds 400.

Windy Hill Beach, with 433 permanent residents, is physically separated from the rest of North Myrtle Beach by the community of Atlantic Beach.

### Atlantic Beach /4/

Atlantic Beach, ten miles from the state line, is surrounded by the North Myrtle Beach incorporated area. The town is bounded by the Atlantic Ocean on the east and by Cherry Grove and Windy Hill to the north and south. Its western boundary is adjacent to the Greater Myrtle Beach Airport. U.S. Highway 17 bisects the community.

Atlantic Beach is a 118-acre incorporated town, 98 percent of whose property owners are black. Lots zoned for residential use form the town's outer boundaries. Seventy-two lots are platted west of Highway 17, but few have been developed.

## Part Two

The remaining residential areas consist of 56 single-family homes and 36 mobile homes. There are 112 commercially-used buildings, mostly motels, bars, and restaurants, and 44 percent of them are substandard. Only nine percent of all residential structures, however, are deteriorating. Because of these conditions, 77.7 acres of the community are considered underdeveloped land.

Although the 1970 Census lists 215 permanent residents of Atlantic Beach, vacation users dramatically increase this figure. The seasonal population ranges between 3,500 persons on normal weekends to almost 10,000 during peak periods like July 4th and Labor Day weekends. Atlantic Beach, Myrtle Beach Pavilion, and Huntington Beach State Park are the centers of recreation favored by most Blacks.

Atlantic Beach's main attraction is the beach itself. Other recreational facilities are operated by private owners and include dance patios, lounges, live entertainment centers, pinball amusement centers, and a ferris wheel. Four beach accessways allow use of the beach at street endings between 29th Avenue South and 32nd Avenue South.

The town is laid out in a grid pattern, with nine streets forming its traffic circulation system. All streets accommodate

## South Carolina Beaches

two-way traffic, except a one-way portion of First Avenue between Atlantic Street and Tyson Street. None of the streets are curbed; for the most part, streets have been improperly maintained.

Atlantic Street, the main road leading from Highway 17 to the ocean, is the only artery with a pavement width that provides diagonal parking on each side. There are only an estimated 50 public on-street parking spaces, and pedestrian facilities are also inadequate.

### North Myrtle Beach to Myrtle Beach

In the oceanfront Highway 17 corridor between North Myrtle Beach and the City of Myrtle Beach are four and one-half miles of high quality private development with primary homes in the \$85,000+ bracket. This unincorporated area includes Arcadian Shore, Lake Arrowhead, The Dunes, and Briarcliff Acres. A few small, 30- to 40-acre lakes highlight the area's natural beauty, and most homes are inland.

Some half dozen campgrounds are located in this wooded area, and trees adequately buffer the campsites and residential developments. Building permits, not required for this area until 1972, were \$6,559,000 in that year.

# South Carolina Beaches

## Part Two

### Myrtle Beach

With a 12,500 permanent population, Myrtle Beach caters to some 12 million tourists annually. Its influence extended over a 30-mile strip of beach, the community is commonly referred to as the "heart" of the Grand Strand. More than half of all South Carolina's tourist dollars are spent in this area.

Spaniards landed about 50 miles north of Myrtle Beach in 1526 and established the first European settlement in the United States about 30 miles south of the city. The settlement, San Miguel de Cauldape, was abandoned within a year, but was later gradually developed into very large rice plantations, which thrived until the late 1800s. Named after the flowering myrtle which grows abundantly there, the town was incorporated in 1938 and became a city in 1957.

Myrtle Beach is an unplanned resort area that has recently experienced typical problems of rapid growth. From 1970 to 1973, building permits for the City of Myrtle Beach grew from \$7 million to \$49.4 million, and the total value of taxable property increased 272 percent from 1969 to 1973. /5/

Growth has resulted from a unique combination of advantages: the area is located on a major north-south thoroughfare, U.S.

Highway 17, the traditional New York-to-Miami route. It has a favorable climate, excellent beaches, and ample recreational amenities. It enjoys a popular vacation appeal in South Carolina, North Carolina, and Canada.

Myrtle Beach's expansion has stemmed principally from its tourist trade of one-week vacationers. Some high income accommodations notwithstanding, the city's market is generally of a lower income than that attracted to planned resort developments like Sea Pines Plantation on Hilton Head Island. In addition to hotels, overnight tourist accommodations are provided in numerous beach cottages and rooming houses. These facilities are especially important during the peak tourist season when the daily tourist population reaches approximately 78,000. /6/

A new era of tourism may likely be at hand for the Grand Strand because of recently instituted commercial jet passenger service to the area. Since early 1975, jet service has been provided by Piedmont Airlines at part of the Myrtle Beach Air Force Base known as the Myrtle Beach Jetport. There are various estimates of the precise impact of this new access means, but no one doubts that it will add significantly to the demand for beach access and recreation.

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Myrtle Beach's Grand Strand has more than 35,000 hotel rooms, mostly oceanfront and with swimming pools. Many rooms have a direct view of the ocean, and most have private balconies. About half of the rooms are efficiencies, with small kitchenettes, and therefore attract families. City zoning ordinances require a parking space for each hotel unit. Because of the demand for oceanfront rooms and full-site utilization for building purposes, many of the larger hotels have had to provide parking spaces on nearby sites to meet the local code.

The hotel strip, mainly along Ocean Boulevard, contains older (10-15 years) family-operated hotels and motels and new absentee investor-owned food and lodging establishments. The former -- generally four stories, with six to ten units per floor -- wane in appearance next to their new competitors, but the personal attention of owners and their families generate repeat business as well as absorb overflow. Many are open year-round, but the smaller and the non-oceanfront hotels close after Labor Day and do not re-open until late March for Canadian-American Days.

The new hotels are typically ten to twelve stories high with 150-200+ units, clean and modern in appearance, and sparingly landscaped. They remain open year-round by offering golf packages, meeting facilities, and convention packages. Many do not have restaurants,

## South Carolina Beaches

and even those which do often close such facilities for at least part of the year.

In addition to a 160-foot wide beach, Myrtle Beach offers vacationers many fine golf courses, which have successfully expanded its tourism market in the spring and fall. Most golf courses are privately owned and depend on the sale of green fees and memberships. Hotels have supported golf course construction by purchasing memberships and offering attractive "golf packages", whereby hotel guests' green fees are paid by the hotel. The number of courses available for play on this basis has increased since 1960 from two to 28.

In addition to golf, swimming pools, and 14 miles of public beach, Myrtle Beach also provides an abundance of recreational and leisure activities for people of all ages, incomes, and interests: 200+ restaurants, 2 fishing piers, 70 tennis courts, boating, miniature golf, 2 amusement parks, arcades, pavilion dancing, shopping, and museums.

Myrtle Beach/Grand Strand has more than 9,000 individual campsites accommodating camp trailers, tents and mobile homes. Generally located on the ocean, the dozen campground areas typically include pools and showers, miniature golf, fishing, tennis and basketball courts, playgrounds,

# South Carolina Beaches

## Part Two

recreation halls, paddle boats, laundromats, and convenience stores.

In Myrtle Beach, there are some 2,300 homes used for permanent occupancy, and approximately 200 trailers with permanent occupancy. There are many high quality homes, and more than 95 percent are classified as standard or better.

### Myrtle Beach to North Island

The Atlantic beaches between Myrtle Beach and North Island are spotted with single-family vacation houses. Except for Myrtle Beach State Park, Huntington Beach State Park, and several oceanfront campgrounds, the development is principally residential. The beach cottages are generally of an undistinguished character, but the three-to-four month rental season seems to be strong.

### Myrtle Beach State Park

Covering 312 acres three miles south of Myrtle Beach on Highway 17, Myrtle Beach State Park is divided into four use areas: a campground with 155 tent and trailer campsites, in addition to facilities for group and primitive camping; a day-use area with eight picnic shelters,

restrooms and changing rooms, and a swimming pool along the ocean; an interpretive area with a visitors' center and historical, environmental, and museum trails; and particular recreation facilities, such as a 750-foot fishing pier with a bait-tackle shop, miniature golf, five rental cabins, and an equipment rental concession.

The one-mile beach is approximately 200 feet wide at low tide. The area south of the fishing pier is most popular with surfers. There are 400 parking spaces for day visitors and parking for each developed campsite. The park annually attracts more than two million visitors. /7/

### Surfside Beach

Three miles south of Myrtle Beach is the 1,189-acre Town of Surfside Beach. Bordered on the east by the Atlantic Ocean, its western-most boundary extends just past U.S. Highway 17. The community is 30-lots deep from the highway to the ocean and is characterized by single-family cottages. The beach is two miles long and 160 feet wide at low tide.

Commercial facilities are concentrated in a four-block area on the ocean and along Highway 17, and there is no industrial development. There are seven motels and an amusement park, a variety of other



## Part Two

recreation facilities including miniature golf, a go-cart track, a fishing pier, a pavilion, and fast food restaurants. There is parking for only 120 cars.

Surfside Beach's permanent population grew from 1,777 in 1972 to 3,545 in 1975, a 49.9 percent increase. /8/ The seasonal peak population, likewise, was 6,802 in 1972 and is projected to increase to 10,275 by 1977. Within the town limits, there are 910 residential structures, containing 672 permanent dwelling units and 432 seasonal units. /9/ Of these, 66.4 percent are single-family homes. Trailers account for only 3.4 percent of the housing.

Growth of surrounding areas, especially Myrtle Beach, has increased the demand for land in Surfside Beach. Property along the ocean road will probably undergo more intensive development in the future. Beachfront vacation homes are gradually giving way to higher intensity uses. Condominiums and townhouses are springing up, many of them in planned unit developments just beyond the present city limits.

An 823-acre tract of land just north of the town limits, bordered by Myrtle Beach State Park and Highway 17, shows the most growth potential. The principal constraint on Surfside Beach's growth, and one of the reasons why more adjoining

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areas have not advocated annexation, is the lack of a city sewerage system and treatment facility.

Surfside Beach currently has two public recreation areas within its corporate limits. One park contains approximately 36,000 square feet and has two tennis courts, one basketball court and a tot lot. The second consists of two acres of multi-purpose ball fields. Both are used to capacity and are strained by non-resident use.

The Surfside Beach Planning Commission has established, among its recreation goals, beach beautification, maintenance, and provision of adequate parking and public access. But the zoning ordinance contains no language requiring or legislating the use of walkways to the beach. Although there are 34 public beach accessways, they are not marked as public. Some of these have been encroached upon by private structures or private parking lots. These accessways are not dedicated as easements, despite their intended public use.

Parking is a major problem for beach users, especially during the summer when Surfside Beach experiences a marked population increase. The only off-street public parking within the two-block area immediately adjacent to the beach is inadequate, and beachgoers park in public accessways,

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street rights-of-way, and even on private property. Such action frequently results in traffic problems and citizen complaints.

Two public beach-related projects have been proposed to alleviate the situation. The City has called for the opening and marking of all public beach accessways by 1978. This \$20,000 project is to be funded equally by the State Highway Department and the community. Also, the City plans to acquire land for public parking, at an estimated cost of \$300,000, to be half funded by the Bureau of Outdoor Recreation, and the State and community sharing the remainder.

Surfside Beach and North Myrtle Beach are among the few beachfront communities in South Carolina acting to encourage public beach use.

### Surfside Beach to Garden City Beach

There is one and one-half miles of oceanfront property between Surfside Beach and Garden City Beach. Myrtle Shores is a new, 130-acre residential development there.

### Garden City Beach

Garden City Beach is located just south of Surfside Beach. Geographically split between Georgetown and Horry Counties, it currently has no zoning restrictions of its own, but is a responsibility of the Georgetown County Zoning Board. Although the subdivision and housing design are much like Surfside Beach, housing is newer and of higher quality.

The area is almost entirely developed and has no tree cover and little vegetation. Overhead power lines along the ocean boulevard are a visual distraction. The beach itself is narrow -- only 100 to 150 feet wide at low tide. Second homes and several mobile home parks dominate the community.

### Murrell's Inlet

Murrell's Inlet is an established fishing village located just off Highway 17 on Business Route 17. It has no beach frontage, but overlooks Garden City Beach across the marsh. Its deep water access and secluded waterfront have encouraged the development of several small marinas catering to recreation sport fishing.

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Surrounding waters provide oysters, soft-shelled crabs, clams, shrimp, and flounder. The fishing and seafood restaurants are popular tourism attractions.

### Huntington Beach State Park

Huntington Beach State Park is a regional park located three miles south of Murrell's Inlet (20 miles south of Myrtle Beach) along U.S. Highway 17, across from Brookgreen Gardens. The site contains 160-foot wide sand beaches, picturesque sand dunes, protected inlets, marshlands, fresh water ponds, and extensive maritime forests.

Its 2,500 acres provide 135 overnight camp sites, comfort stations, picnic pavilions, paved parking for approximately 275 cars, a recreation building and small playground, and a small trading post. Other facilities include an alligator habitat and feeding station, boardwalk and observation platform for salt water marsh habitat, two observation towers, and interpretive kiosks.

Atalaya is a unique structure built by the Huntingtons. Its condition has deteriorated, but is repairable, and visitors can walk through its rambling

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rooms and garden. The South Carolina Arts Commission plans to create an arts center within Atalaya and to provide parking for 160 cars.

Picnicking, swimming and fishing are the major park activities. The beach area within the park is spectacular. Swimming is not allowed at the northern end because of dangerous off-shore currents, but the three miles of pristine beaches are among the cleanest and most scenic of the Grand Strand. Adjacent Brookgreen Gardens serves as a complementary education, recreation, and wildlife resource.

### North Litchfield Beach

North Litchfield Beach is a beachfront community separated from the mainland by marsh, and connected to Highway 17 by Brookgreen Drive and Boyle Road. The island consists primarily of two- and three-story beach houses. Development has occurred more recently here than at most other Grand Strand beaches. The quality of these residential structures and the natural terrain, with high primary and secondary sand dune ridges, and extensive vegetation, make this family-oriented area one of the highest quality beaches in the Region.

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The community, however, imposes a de facto exclusivity. A prominent sign is placed at the entrance to the Island: "Warning: No public parking on North Litchfield". In addition to posted "no parking" signs, there is no visible access between the homes to the beach.

A recorded plat indicates that six streets and nine ten-foot wide footpaths end at the beach, but these are not readily apparent, or marked by signs. A 650-acre undeveloped parcel, adjacent to North Litchfield Beach to the south, is owned by International Paper Company and includes one mile of oceanfront beach. It will become a planned residential community with an estimated 1,500 residential units.

### Litchfield Beach

Litchfield Beach is connected to the mainland by a two-lane paved causeway across Midway Creek. Development here is similar to that found at North Litchfield Beach. Oceanfront homesites contain 70 feet of frontage. Homes are relatively new and well-maintained.

The beach has ten- to twelve-foot high dune lines and good vegetation cover. At low tide, the sand area is 150 feet

to 175 feet in width. Litchfield Beach is, however, smaller than North Litchfield Beach and, with approximately 204 homesites, has only one-third the single-family residential dwelling area.

The 77-room Litchfield Inn is located prominently on a 4-acre tract at the east end of the causeway. It has 400 feet of ocean frontage, paved parking for 150 cars, and a 245-seat restaurant. The beach and parking facilities, however, are available only to the Inn's guests.

Several high-rise condominium structures and apartment projects have been constructed along the beach. Rents on Litchfield Beach range from \$325 to \$550 a week for an oceanfront four-bedroom cottage. During the ten-week rental season, 100 percent of the island's available homes are rented.

There are no designated public parking areas, on-street parking is restricted, and few areas providing public beach access are available. On a plat of the community, seven 10-foot walkways and one five-foot path are shown between Norris Drive and the beach. Nonetheless, only one 10-foot accessway to the beach can readily be found within Litchfield Beach's residential area, and it is marked "Private".

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### Pawleys Island

Pawleys Island traditionally attracts more affluent Carolinians for summer vacation than other Grand Strand areas. Access to the island is via a two-lane paved causeway from the mainland. Fronting the ocean are two-story beach houses built on piles. Because of the wind-pruned oaks and pines, the ocean can be seen only from a few points along the road paralleling the back of the island. Private docks on the back side of the island permit ocean access for boats only at high tide. The beach is 100-120 feet wide at low tide.

The Island's substantial natural tree cover and dune structure encouraged the development of a unique residential community. Although many homes have begun to deteriorate, the Island has maintained its popularity because of tradition and the high demand for beach property. Lower rents are obtained here than at North Litchfield and Litchfield Beaches, but the rental market on Pawleys Island is still strong. The approximately 160 homes available for rent are normally rented by early April for the ten-week season.

Only a few commercial resorts, such as the 100-room Sea Gull Inn on Highway 17, are located near the Island. That particular motel provides an 18-hole golf course and paved parking for 110

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guest cars. An amusement area on the ocean offers only a few more unpaved parking spaces. A four-story, 54-unit condominium project has been built near Pawleys Island's main entrance road, the only area currently zoned to such development.

Both parking and public beach access on Pawleys Island are limited. Two to four parked cars are common sights on most residential lots. There is no public parking on the island except along the shoulder of the main road; even then, parking on the pavement is prohibited by posted signs. Only three ocean accessways are easily found. Adjacent to an area on the southern tip used by non-resident beachgoers is a small area which can accommodate 20 cars, but "No Parking" signs are posted there.

### Debidue Beach

Debidue Beach, located directly south of Pawleys Island, is an unincorporated area of Georgetown County and is part of the 38,000-acre Waccamaw Neck. Approximately seventy percent of Waccamaw Neck is undeveloped, consisting of forest, a small amount of agricultural land, and extensive reaches of tidal marsh. The character of the region is rapidly

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changing, however, due to the urban-industrial influence of the City of Georgetown to the south and, to a greater extent, the expanding tourist-recreation economy of the Grand Strand in Horry County to the northeast.

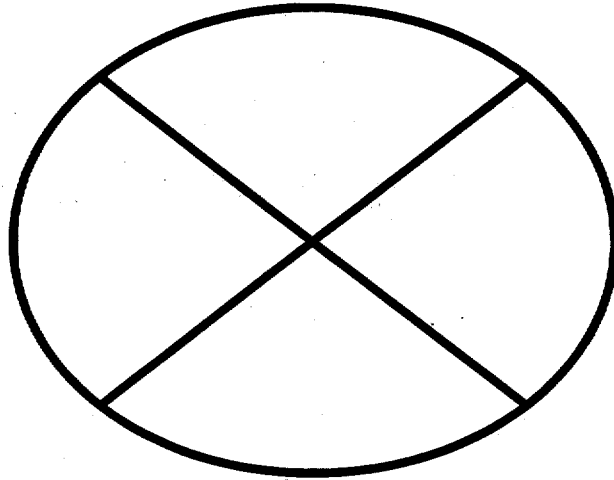
With large expanses of relatively vacant land, Waccamaw Neck is attractive to developers. Condominiums, townhouses, and spacious single-family dwellings are springing up here, most as a part of a planned community which often centers around a marina, dredged canals, golf course, or combination of these accouterments. The destruction of marshland and valuable forest land is more of a problem here than in any other section of the Grand Strand.

Debidue Beach is controlled by three major landholders: Arcadia Plantation, owned by the Vanderbilt family; DeBordieu Colony, a planned unit development; and Baruch Estate Property, now being used as a private wildlife preserve. Despite almost four miles of beach, there is no public recreation because of the private land tenure.

### North Island

North Island, also a part of Waccamaw Neck, is owned by the Yawkey family and used as a private wildlife preserve. The island has no improved roads, and currently supports only a lighthouse station manned by the U.S. Coast Guard. The island has some eight miles of excellent oceanfront beaches, 150 feet wide at low tide.

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## Part Two

### Berkeley-Charleston-Dorchester Region

The tri-county Charleston region has a combined 1975 population of 364,160 persons, Charleston County being the population center (260,600 residents). Berkeley and Dorchester Counties have 62,300 and 41,200 residents respectively. By 1985, the Charleston metropolitan area is projected to reach 445,000 persons. /10/

Charleston County's industrial and commercial facilities, including military bases, ports, and several major medical complexes, dominate the Region. As a result, Charleston is the most affluent of the three counties. 36.7 percent of Charleston County households earn in excess of \$15,000, compared to 31.3 percent and 25.0 percent for Berkeley and Dorchester Counties respectively. Because the Charleston population is more than six times greater than either of the other two counties, the absolute number of residents is especially significant for planning purposes.

Of Charleston County's approximately 1,032 square miles, 710 square miles are high land. /11/ Some 145,900 acres, 22 percent of the total land area of the county, are marsh. In comparison, Berkeley County covers 1,106 square miles,

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a large part of which is the Francis Marion National Forest. Rural Dorchester County includes 549 square miles.

There are approximately 91 miles of Atlantic coastline in the Berkeley-Charleston-Dorchester Region, wholly located in Charleston County. This shoreline property, increasing in value, contains ideal areas for public parks and open spaces. With escalating development costs, this part of the coast is likely to evolve into higher density land uses.

Charleston County beach areas include Capers Island, Dewees Island, Isle of Palms, Sullivan's Island, Folly Beach, Kiawah Island, Seabrook Island, and Edisto Beach. Exhibits II-6 and II-7 indicate population, household size, and income distribution of the Census tracts encompassing these areas. Exhibits II-8 and II-9 indicate housing inventory, building permits, dollar value of construction, and dollar value of real estate transactions in these same Census tracts.

In Charleston County are concentrated the Region's recreation facilities: 22 parks, 28 playgrounds and ball fields, 20 boat ramps, 12 golf clubs, 11 campgrounds, 6 public swimming pools, compared to Berkeley County's one park, five playgrounds, and 10 boat ramps, and Dorchester County's two parks and three playgrounds and ball fields.



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## Part Two

### EXHIBIT II-6

#### POPULATION OF SELECTED CENSUS TRACTS, CHARLESTON SMSA 1970

	<u>Census Tracts</u>	<u>Population</u>	<u>Percent of Total Population</u>	<u>Households</u>	<u>Percent of Total Households</u>
Total SMSA		303,849	100.0	82,643	100.0
Isle of Palms	49.00	2,657	.9	821	.9
Sullivans Island	48.00	1,426	.5	440	.5
Folly Beach	20.04	1,157	.3	423	.5
Edisto Beach	23.00	1,374	.5	329	.4

Source: 1970 Census of Population and Housing, Census Tracts, Charleston SMSA,  
February, 1972.

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### EXHIBIT II-7

#### INCOME DISTRIBUTION, 1969 SELECTED CENSUS TRACTS, CHARLESTON SMSA

##### Income in 1969 of Families and Unrelated Individuals

	<u>Census Tracts</u>	<u>Household Base</u>	<u>\$0-9,999</u>	<u>\$10,000- 14,999</u>	<u>\$15,000- 24,999</u>	<u>\$25,000- 49,999</u>	<u>\$50,000 and up</u>	<u>Median Income</u>	<u>Mean Income</u>
Total SMSA		70,073	64.9	21.6	11.1	1.9	.5	7,818	8,885
Isle of Palms	49.00	715	43.2	34.4	20.7	1.7	--	11,032	11,247
Sullivans Island	48.00	307	44.6	34.9	17.3	3.3	--	10,917	11,247
Folly Beach	20.04	256	73.8	18.7	8.2	--	--	7,129	7,531
Edisto Beach	23	234	91.7	5.6	2.7	--	--	2,560	3,724

Source: 1970 Census of Population and Housing, Census Tracts, Charleston SMSA, February, 1972.

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### EXHIBIT II-8

#### HOUSING INVENTORY FOR SELECTED CHARLESTON SMSA CENSUS TRACTS 1970

	<u>Census Tracts</u>	<u>Total Units</u>	<u>Seasonal/ Year round</u>	<u>Specified Owner Units</u>	<u>% Below \$25,000</u>	<u>\$25,000- 34,999</u>	<u>\$35,000- 49,999</u>	<u>\$50,000 or More</u>	<u>Median Value Owner- Occupied Units</u>
Total SMSA				40,354	82.0	11.3	4.4	2.3	\$16,000
Isle of Palms	49.00	1,180	181/999	605	83.8	10.2	4.6	1.3	\$18,500
Sullivans Island	48.00	735	169/566	288	75.3	16.3	7.3	2.1	\$17,400
Folly Island	20.04	1,329	359/970	206	95.1	3.4	1.5	--	-\$11,700
Edisto Beach	23	725	352/373	161	95.7	2.5	1.8	--	-\$ 5,000

Source: Charleston, S.C. SMSA, 1970 Census of Population and Housing, U.S. Department of Commerce, February, 1972.

## EXHIBIT II-9

CHARLESTON COUNTY: SELECTED INCORPORATED AREAS  
 DOLLAR VALUE OF CONSTRUCTION FOR WHICH BUILDING  
 PERMITS WERE ISSUED  
 1974

	<u>S.F. Residential</u>	<u>Repairs &amp; Alterations</u>	<u>Other</u>	<u>Annual Total 1974</u>	<u># S.F. Units</u>	<u>Annual Total 1973</u>	<u>% Increase (Decrease)</u>
Incorporated Areas							
Folly Beach	\$108,117	\$172,738	\$ 27,000	\$307,855	7	\$354,505	(13)
Sullivans Island	\$335,000	\$194,198	--	\$529,198	11	\$301,685	75
Isle of Palms	\$437,600	\$182,849	\$244,710	\$865,159	16	\$917,350	( 6)

Source: Berkeley-Charleston-Dorchester Regional Planning Council.

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## Part Two

The Region's unique attraction is its Revolutionary and Civil Wars history: for example, Fort Moultrie and the lighthouse on Sullivans Island, and Fort Sumter and numerous residential and commercial structures in Charleston. Other points of interest -- such as Middleton Place, Cypress and Magnolia Gardens, Patriots Point, and The Citadel -- complement the historic sites as tourism attractions, but all benefit from Charleston's coastal setting.

Because Charleston's residents look to these island communities as coastal parks, many residents of Sullivans Island, Isle of Palms, and Folly Beach feel threatened and oftentimes manifest their desire to retain the exclusivity of their towns. Weekend beach users en route to the Isle of Palms so bottleneck the Sullivans Island bridge that both communities discourage such use. Although Folly Beach encourages public use of its beach and four-block commercial area, traffic along Highway 171 is typically so congested that its residents, too, increasingly demand restraint of such recreation.

### South Island, Cedar Island, and Murphy Island

Between North Island and Folly Island is a series of small, low islands, most of which are inappropriate for residential development because of the extensive marshland and minimal developable acreage. Recreational use, however, merits consideration for South Island, Bull Island, Murphy Island, and Cedar Island.

South Island, Cedar Island, and Murphy Island lie to the south of Winyah Bay. They have no road access and are separated from the mainland by extensive salt marsh. These islands have only small amounts of buildable land and would pose difficulties in development for any but limited recreational activity.

More than 23,000 acres were donated to The Nature Conservancy by the Santee Gun Club and then deeded to the Wildlife and Marine Resources Department. More than 18,000 acres of this property is marsh. Murphy has 5.5 miles of ocean, but not beach, frontage, and is in Charleston County. Cedar, with 4.25 miles of ocean frontage but minimal beach, is in Georgetown County.

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Because of the extensive marshes, the Preserve can accommodate little public recreation. The Wildlife and Marine Resources Department plans to provide minimal campsite facilities and to preserve most of the area as a wilderness.

### Francis Marion National Forest

Although it is not located on the coast, Francis Marion National Forest offers abundant recreational opportunities to complement beach vacations. Maintained by the U.S. Forest Service, Department of Agriculture, the Forest offers hiking, hunting, wildlife and vegetation observation, picnicking, and camping.

### Bull Island and Bull Bay Islands

The coastal area stretching from Alligator Creek to Price Creek, nearly 20 miles northeast of Charleston, includes a series of islands that comprise the Cape Romain National Wildlife Refuge. One of the East Coast's outstanding wildlife sanctuaries, the Refuge is a 34,196-acre tract of low-lying barrier islands and tidal marshlands, of which 34,016 are Federal land, and 180 acres are State land under lease.

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Adjacent to the Refuge are 30,000 acres of State-owned waters.

The primary purpose of the Refuge, which is managed by the U.S. Fish and Wildlife Service, is to preserve a habitat for waterfowl, shorebirds, and endangered species. It is especially important as a nesting area for water birds and loggerhead sea turtles.

Cape Island and Bull Island are the largest land masses of the Refuge. They contain nearly 20 miles of undeveloped natural beaches on their seaward sides.

Bull Island, a six-mile-long barrier island, is 5,426 acres and is accessible only by boat from Moore's Landing in Awendaw. Because of existing unimproved roads, buildings and impoundments on the island, this part of the Refuge is unsuitable for wilderness designation. It therefore has the potential of serving beach park needs. Other than shell-collecting, bird-watching, and occasional fishing, there has been little public use in the past because of limited access.

In 1975, "wilderness" designation was superimposed over Cape Romain's refuge status in some areas. Specific regulations regarding access have not yet been determined, but these parts are the most isolated. Use of motor vehicles is prohibited within the Refuge except for emergencies and

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authorized research. Swimming is banned because of undertows and the lack of lifeguards.

### Capers Island and Dewees Island

Capers Island and Dewees Island are located nearly 13 miles east of Charleston. Capers Island covers more than four square miles or 2,260 acres. Dewees Island covers 3.1 square miles, but only 40 percent of this acreage is high ground. The South Carolina Wildlife and Marine Resources Commission has adopted a tentative plan to make Capers Island a combined wildlife and recreation area.

There is no road access to either Capers or Dewees Island. The nearest road, Route 855 off Route 17 from Charleston, is nearly three miles from either island. If roads are utilized to provide public access, they would have to cross more than two and one-half miles of marshland and a major bridge would have to be built over Clawson Creek.

### Isle of Palms

Sullivans Island, Isle of Palms, and Folly Island provide the nearest ocean beaches for Charleston residents and, as such, are popular day-use destination areas.

Isle of Palms is located approximately 11 miles southeast of downtown Charleston. It can be reached from the mainland via a causeway and bridge across the marsh and then via a four-lane paved road across Sullivans Island. Isle of Palms contains nearly seven miles of ocean frontage, with beaches that are wide and clear of debris, and that range between 200 and 250 feet at low tide. The island is well forested. Its some 3,000 residents occupy almost 1,000 of the island's 1,180 housing units year-round.

Approximately four miles of ocean frontage on the Isle of Palms have been developed, primarily with private beach houses and weekend cottages. The undeveloped eastern two and one-half square mile tip of the island consists of 40 percent low-lying marshland. The Sea Pines Company, through a local partnership, owns about 950 acres of the remaining developable land. The beach at this end is broad, flat, and attractive. Several rock groins control beach erosion.

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The waters off Charleston abound in some 400 species of fish, 70 of which are considered game fish. Although residents and vacationers frequently fish from both piers and surf, the most popular method is by boat. Piers on both the Isle of Palms and Folly Beach attract as many as 200 fishermen daily. Sport fishing is available practically year-round, and charter fishing boats are an active business during the summer months.

Public beach access at the Isle of Palms generally is not restricted. Houses along Ocean Boulevard do not front directly on the Atlantic, but have been built across the beachfront road. Although there is the appearance that the beaches are openly accessible, easements have never been dedicated to the Isle of Palms. At present, a lawsuit is in process to ascertain the ownership of accreted beach land in this area.

Public parking is fragmented. A grass municipal parking lot can accommodate 350 cars. Diagonal parking in the four-block commercial area at the beach provides 150 to 300 spaces. Parking is allowed on the left-hand side of Pavilion Drive and Harbor Oak Lane, and also on both sides of most avenues. However, "No Parking - Towing Zone" signs prohibit parking on Ocean Boulevard, Carolina Boulevard, and Palm Boulevard.

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### Sullivans Island

Sullivans Island is an incorporated community located at the entrance to Charleston Harbor to the west of Isle of Palms. A two-lane bridge connects it to the mainland. Because of the traffic to and from Sullivans Island and Isle of Palms during peak use periods, this bridge is inadequate. Current proposals call for replacing it with a fixed span bridge.

Beach access exists at almost every block along the ocean on Sullivans Island, but there is no central parking area. Most of the island's oceanfront property is fully developed. 735 units house its population of approximately 1,500. Beach houses are large, of high quality, and well maintained. Many oceanfront homes are permanent residences, whose owners commute daily to Charleston.

The Sullivans Island beach is wide, between 275 and 300 feet at low tide, and is adequate to accommodate day-use visitors if public parking were provided. Posted along the beach are numerous signs: "No Parking - Vehicle Will Be Towed Away". On-street parallel parking is allowed on one side of most streets.



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### Folly Island

Folly Island, a small, year-round community, is located 12 miles due south of Charleston on S.C. Routes 17 and 171. Folly Beach is fully developed, but much of the property is under-utilized. Many beachfront properties are unattractive and of low quality; 95 percent of the residential units are valued below \$25,000, and 1974-1975 new construction was even lower. The township severely needs many facilities but lacks an adequate tax base to provide them.

Folly Beach is experiencing problems caused by severe beach erosion and the lack of a sewerage system. About a dozen rock groins and wood pilings have been constructed to retard beach erosion, but these fragment the beach and are particularly unattractive. The township lacks a community-wide sanitary sewerage system and, hence, intensive private recreation development has been restricted.

Fewer than 1,200 persons reside permanently within Folly Island's corporate limits. But its resident population increases to 4,500 persons during the summer months and the peak daily visitor count is 30,000. Of 1,329 housing units on Folly Island, only 32 percent are occupied year-round. Single-family dwelling units predominate, and most were built before 1960.

Folly Island has 5.2 miles of ocean beach frontage, but at low tide the beach is at most 150 to 175 feet wide. It is only a 15-minute drive from downtown Charleston, and has the image, with Isle of Palms, of being a truly public beach. Its proximity to Charleston is the Island's prime asset.

Commercial land uses occupy approximately 19 acres of Folly Island and cover a four-block wide district in the island's center. Vacant high ground accounts for 327 acres or 22 percent of the total township area of 1,486 acres. The township does not own any public open space or parks. Four privately-owned lots near the pavilion provide approximately 225 spaces for \$1.00 all-day parking. Sixty additional metered parking spaces exist along the street adjacent to the pavilion area.

An aging beachfront pavilion, bathhouse, arcade, and several snack shops provide the only commercial facilities for the concrete boardwalk and fishing pier located in the center of Folly Beach. Surfers congregate west of the commercial arcade. This area attracts the most day visitors. The beach here, which disappears at high tide, is a full flight of wooden steps from the boardwalk.

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There is an apparent need for improvement of beach recreation facilities, like the boardwalk and additional new facilities, such as parking, restrooms, and amusement activities. Long-range community plans call for the township to provide a beach-oriented public activity center.

Public beach access is clearly posted at each street ending at the beach in the residential areas. There is, however, little or no public parking. "No Parking" and "Private Property - No Trespassing" signs are evident along at least one side of most streets. To encourage and protect beach access, the Development Plan recommends that public easements be procured to protect the foredunes. These would prevent any new construction and revert the land back to the natural state after the existing building encroachment ceases to exist. (Recommended width, 200 feet from high water mark.) /12/ Implementation of the plan is still unsettled.

The Coast Guard's LORAN (long-range aid to navigation) Station at the island's eastern end is part of a strategic communications network used by both surface and aircraft units. The present system is to be replaced by 1980, and several contingencies suggest the 14.3 acre site as possible public recreational use.

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### Kiawah Island

Kiawah Island, some 30 miles southwest of Charleston, is currently accessible from downtown and the Charleston Municipal Airport by S.C. Routes 700 and 20. Long a private summer playground for a few families, the Island is now in the early stages of development as an exclusive resort.

Its 6,500 acres include only 4,100 acres of high ground above three feet mean sea level, but it has nearly 8 miles of ocean frontage as well as more than 12 miles of river frontage. Heavily forested, the island has 300-foot wide white sandy beaches which, during the past 15 years, have experienced significant accretion.

Kiawah is being developed by the Kiawah Beach Company under the direction of Sea Pines Company and controlled by the Kuwait Investment Company. A security gate limits and registers guests, who will share the beach principally with property owners.

A 150-room inn is scheduled for a 1976 opening. Its development is planned to be similar in design and cost to the resorts on Hilton Head Island. The island has potential to become one of the largest new resorts on the East coast, and will

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likely draw thousands more out-of-state visitors to South Carolina.

Although the island is privately owned, its developers have agreed to allow public access to a portion of the beach. Two and one-half acres at the southern end of the island have been designated for day use by non-guest beachgoers, and the developers have agreed to provide public beach support facilities.

To be known as Beachcomber Park, this area will have two open-air change facilities with toilets, outside showers, drinking water, a covered shade area, and a boardwalk over the dunes to the beach. In addition, a small children's playground, a picnic area, paved parking for 150 cars, and a limited food dispensing facility will be provided. Beachgoers will be charged a parking fee to defray operating costs.

### Seabrook Island

Seabrook Island, located 20 miles south of Charleston via S.C. Route 20, is a 2,260-acre planned recreational/residential community. Its three-mile Atlantic frontage is being developed with 1,200 lots and 1,400 condominiums. There are only 1.8 miles of a relatively narrow sand beach, averaging 100 feet wide.

Although the master plan proposes such recreational amenities as a cabana and beach club, a marina, two 18-hole golf courses, numerous tennis courts, and a swimming pool, to date, only one 18-hole golf course, the beach clubhouse and dining room, and two tennis courts have been built. About 350 single-family lots and 80 condominiums have been sold.

Access to Seabrook Island is restricted to all but property owners and their guests. A state highway has been built to the development's gate, but security guards enforce the community's privacy.

### Edisto Island and Botany Bay Island

Edisto Island and Botany Bay Island are located 50 miles southwest of Charleston. Edisto, 25 miles from U.S. Highway 17 via S.C. Route 174, is relatively isolated. It covers 28,811 acres and is laced by rivers, streams, and tidal creeks. Because of much low-lying land and the ocean's attraction, development has occurred primarily near the beach. Botany Bay Island is a small, privately owned area of single-family residential lots with no recreational amenities.

The Town of Edisto Beach is a beachfront community with aging dwellings. More than ninety percent of some 1,600 residents

## Part Two

earn less than \$10,000 annually, and the median income is only \$2,560 annually. A semi-private residential development known as Oristo occupies more than 300 acres of land at Edisto Island's southern tip. It has an 18-hole golf course, a clubhouse, and several tennis courts.

A four-lane, paved roadway parallels the ocean. A restaurant and pavilion are joined by scattered houses. Unmarked, but apparent foot trails permit beach access between every three to five lots. Although there are no public parking lots, on-street parking is available along the main road.

More than two-and-a-half miles long, the beach is fairly narrow (160 feet) with rock groins and pilings from dilapidated fishing docks jutting out into the water. Beach maintenance is very poor, and litter is very much in evidence.

Edisto Beach State Park covers 1,225 acres of Edisto Island and has more than one-and-one-half miles of sandy beach, 160 to 200 feet wide at low tide. A three-quarter mile portion is used for swimming.

Throughout the park are salt water marshes and creeks. Much of it remains natural, and among the marsh and forest are several environmental observation areas, hiking trails, a playground, swimming

## South Carolina Beaches

and picnic facilities, and 5 vacation cottages. About 250 parking spaces accommodate day-use visitors. The park is one of the State's most popular, drawing 175,000-200,000 persons annually. Several major improvements are planned for the park in the next two years, including the construction of several more vacation cottages and additional campsites.

Primarily because of location, Edisto Island is currently under-utilized. It is viewed as isolated by many Charleston residents.

# South Carolina Beaches

## Part Two

### The Low Country Region

The Low Country, South Carolina's southeast corner, consists of Beaufort, Jasper, Colleton, and Hampton Counties. An estimated 110,320 persons reside here. (Exhibit II-3) Beaufort County is the most populous (52,700) and Jasper (12,800) the least. Jasper, Hampton, and Colleton Counties are relatively poor: 42.5, 40.7, and 36.3 percent of their residents, respectively, earn less than \$5,000 annually. 58.7 percent of Beaufort County residents earn less than \$10,000 annually. /13/

The Region's preponderance of beaches and recreation facilities are in Beaufort County since only small portions of Jasper and Colleton Counties are along the ocean. The Region's main public recreation facilities are Hunting Island State Park, Colleton Wayside State Park, and 30 public boat landings which provide access to marshes and creeks. Hilton Head Island and Fripp Island are major private vacation centers.

Parris Island Marine Base, the U.S. Naval Air Station, and a Navy Hospital exert considerable influence over Beaufort County's leisure activities, especially evident at Hunting Island State Park. Hunting Island, Fripp Island, Pritchards Island, St. Phillips Island, Bay Point Island, Hilton Head Island, Daufuskie

Island, and Turtle Island contain Beaufort County's entire ocean frontage.

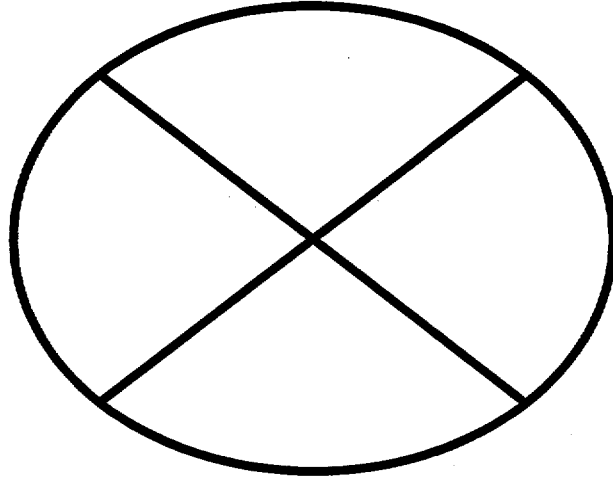
#### Hunting Island

Hunting Island, 17 miles east of the City of Beaufort on Highway 21, is predominantly in public ownership. Hunting Island State Park covers some 5,000 acres, and there are only a few privately owned properties.

Because the park contains almost four miles of beachfront property and has 200 campsites, it is a favorite area of swimmers and campers. Besides 400 day-use parking spaces, the park includes 12 rental cabins, carpet golf, a 136-foot lighthouse built in 1873, four comfort stations, a wildlife observation area with nature trails, a boat launching ramp, and a playground. /14/

The park is South Carolina's second most popular, drawing nearly one million visitors annually. Several major park improvements are planned for 1976, including the construction of 10 vacation cabins and two tennis courts. The U.S. Army Corps of Engineers has begun a \$1 million beach re-nourishment project. These efforts should increase the park's popularity with both military and civilian recreation seekers.

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## Part Two

### Fripp Island

Fripp Island covers nearly 2,000 acres and measures approximately 3.5 miles by 0.8 miles. Eighty percent of the acreage is high ground, and the island has nearly four miles ocean frontage, although only 2.3 miles are of good white sand beaches, averaging 150 to 200 feet wide. It is located less than 20 miles southeast of Beaufort via S.C. Routes 21 and 406.

The resort development of Fripp Island has been underway for 10 years. It is estimated that 1,700 to 2,000 families will eventually live there. Access from the mainland, controlled by a privately-owned concrete bridge, is restricted to owners, resort guests, and golfers.

### Pritchards Island

Pritchards Island, 3,303 undeveloped acres southwest of Fripp Island, has no bridge access to the mainland. The best access, a bridge crossing Capers Creek, would likely be ecologically hazardous to the marsh.

The island's 537 acres of high ground are dwarfed by 2,763 acres of marshland. The heavily wooded inland fronts on nearly 3.5 miles of the ocean, and the 2.5 miles of white sand beach are 150 feet wide.

## South Carolina Beaches

### St. Phillips Island

St. Phillips Island is 12 miles southeast of Beaufort. Access is limited to boats by a ramp at the end of Route 447. Wide salt marshes separate the island from the mainland. Routes 21, 45, 117, 77, and 447 constitute the shortest, albeit circuitous, connection to downtown Beaufort.

The natural, undisturbed island covers nearly 7,700 acres, of which only 25 percent is high ground. Privately owned, St. Phillips has one mile of good beach and is heavily forested in many areas.

### Parris Island

Parris Island does not have park or beach areas available for use by either military personnel or civilians. All lands within the confines of the U.S. Marine Corps base are considered as environmentally or security sensitive.

Three sites outside the Base, declared surplus by the Defense Department, have been dedicated to Beaufort County. A 313-acre wooded tract, known as Burton Wells, is located halfway between Parris Island and Laurel Bay. Engineering drawings are now being developed for recreational facilities on this site. In 1976 a baseball field will be constructed on a 5-acre site within this property. Future plans

# South Carolina Beaches

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call for a swimming pool, campsites to complement facilities at Hunting Island State Park, a picnic area, nature trails, several tennis courts, and three additional baseball fields. A five-acre site outside the Base gate is planned for the development of 2 tennis courts, restrooms, grills and picnic tables, picnic shelter, play area, and grassed parking for 50 cars. The third site, an open field, is also available for recreation.

### Victoria Bluff and Calawassie Island

The State Port Authority owns approximately 1,503 acres near the site of the proposed Chicago Bridge and Iron Company installation. A current agreement requires that, if the CBI permit is granted, the Ports Authority will transfer 1,400 acres to the Wildlife and Marine Resources Department for use as a wildlife refuge or open space. A decision from the Army Corps of Engineers is expected in April, 1976.

A plan has been designed for the 1,000 acres of high ground that comprise Calawassie Island, now owned by the South Carolina Electric and Gas Company. The plan includes a 27-hole golf course, a marina, and other resort facilities, but no development is scheduled.

### Hilton Head Island

Hilton Head is a 28,000-acre island located 32 miles northwest of Savannah, Georgia, and 32 miles southwest of Beaufort. Since 1964, it has been developed into a high quality destination resort, with four major planned resort communities along its 13 oceanfront miles. Its growth since 1970 has paralleled that of Myrtle Beach.

Hilton Head Island attracts much fewer, but far more affluent visitors than Myrtle Beach. Demand for its vacation use comes almost exclusively from families and individuals in the \$25,000+ income category.

Its golf and tennis facilities have attained national renown, and more than 900 hotel rooms and 4,000 rental condominium house guests.

There remains significant undeveloped acreage on Hilton Head to provide for future residential and resort development. 10,000 single-family lots have been platted, and 4,000 have been sold. 11,000 condominium units are projected, but only 4,021 have been completed. Each major "plantation" provides extensive recreation facilities to entice property buyers and resort guests, and they all limit beach access to residents and guests.



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Sea Pines Plantation is a 5,200-acre controlled-access private community. Along its four miles of wide white sand beaches are 161 oceanfront lots. Fifty-foot wide walkway easements are spaced every 200 feet along the ocean to permit beach access for purchasers of interior lots or condominiums. A beachfront fast-food and change facility serves resident and guest beach users. Four 18-hole golf courses, two marinas, 47 tennis courts, and playgrounds are scattered through the development, which is 90 percent complete.

Hilton Head Plantation's 4,000 acres on the island's north end are being developed by the Company behind Sea Pines Plantation and Kiawah Island. It will be a permanent residential community with water frontage on Port Royal Sound. Compensating for a limited beach area are an equestrian center, an 18-hole golf course, several playgrounds, and a recreation area with tennis, platform tennis, a swimming pool, and a restaurant.

Being developed by the Phipps Land Company, the 1,800-acre Palmetto Dunes Resort has nearly three miles of ocean frontage. Between every five of the 81 oceanfront lots are beach access paths. A small changing facility and meeting pavilion is the ocean focal point. A

## South Carolina Beaches

major hotel will open in 1976, and the community is 40 percent complete.

One of the first developments on Hilton Head, Port Royal Plantation is the island's only large community characterized by single-family dwellings. Developed by the Hilton Head Company, it covers 995 acres, and 60 percent of its 800 lots have been sold. A clubhouse, 36 holes of golf, and an inn cater to residents, prospective purchasers, and their guests. Of the community's 43 oceanfront lots, 18 front on Port Royal Sound, and the beach is accessible at the inn.

850-acre Shipyard Plantation has less than 300 feet of ocean frontage. Another development of the Hilton Head Company, it has one 18-hole golf course, and a large tennis complex. It is 50 percent developed.

Other major Hilton Head developments, such as Spanish Wells and Long Cove Plantations, do not have ocean frontage. Moss Creek Plantation, a 1,061-acre new community, is located just off the island and has deep water access but no beach. 1,581 dwelling units are planned, but the project is in its initial stages.

# South Carolina Beaches

## Part Two

In the North Forest Beach subdivision, there are 19 streets ending at the beach, and presumably provide public access. While each street ending has a 26-foot right-of-way, many have been encroached upon by adjacent lot owners, thereby restricting access. Ownership of these rights-of-way is in question. Subdivision lot owners and the subdivision's developer, however, claim the access points are easements for their exclusive use. There is no record of deeding and dedication of these parcels to Beaufort County although the County Department of Roads and Bridges has been maintaining the roads in the area. Posted signs near the access areas warn that parked cars will be towed away. These signs were placed by the developer.

The Lawton Beach Subdivision located on the ocean between the Hilton Head Inn and the Sea Pines Plantation Ocean Gate contains 24 oceanfront lots. The subdivision plat indicates three walkways to the beach, each with a 75-foot right-of-way. Six streets in this area, each 50 feet in width, end at the beach and provide beach access for subdivision lot owners. As in North Forest Beach, these rights-of-way have not been deeded or dedicated to Beaufort County.

Five paved state-owned and maintained roads on Hilton Head Island lead to the ocean, but only the road at Coligny Circle is considered "public" because of established use. The parcel of sand between the street ending and mean high tide is in private ownership.

Development of a 6.5 acre park site in the North Forest Beach area is under current consideration, for either a playground and picnic area, or for a public parking area to serve beachgoers. As yet, however, no commitments have been made, and the property still remains in private ownership although efforts to secure a dedication to the county are being actively pursued.

All other beach access points on Hilton Head Island are behind the security gates of the private communities and therefore provide little day use access. The Island is used little by Beaufort beachgoers, primarily because the 60-minute drive through a circuitous marshland route makes it less convenient than Hunting Island State Park.

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# South Carolina Beaches

### Daufuskie Island

Eighteen miles north of Savannah are Daufuskie Island's 5,000 undeveloped acres on Calibogue Sound. It is separated from the mainland by the Intracoastal Waterway and the Cooper River. Access to this island, five miles long and three miles wide, is by boat. Along the southeastern side of the island are three miles of privately owned sandy beach.

### Turtle Island

In late 1975, Turtle Island was donated to the State. Southernmost of the South Carolina sea islands, this 1,700-acre island has only 90 acres of high ground. Bounded on the north by the New River, on the west and southwest by the Wright River, Turtle Island will be used as a wildlife management area by the S.C. Department of Wildlife and Marine Resources.

# South Carolina Beaches

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### Coastal Recreation Facilities

A detailed inventory of the State's existing recreational facilities was conducted by PRT and local governments. Known as Title II, the Outdoor Recreation Resources Inventory, it has been incorporated as an element of the South Carolina Comprehensive Overall Recreation Plan.

This extensive computer file of the State's public and private recreational facilities was analysed as part of this study. Its information on hotels, motels, campgrounds, golf courses, churches, school recreation facilities, cemeteries, historic houses, hunting preserves, and state parks were part of the data base from which this report was prepared.

This inventory is the best available in the State; but not all information has been collected, and no efficient means of continuous updating of the inventory has been instituted. It also suffers from its quantitative orientation: SCORP summaries present "need" in terms of acreage rather than quality or diversity.

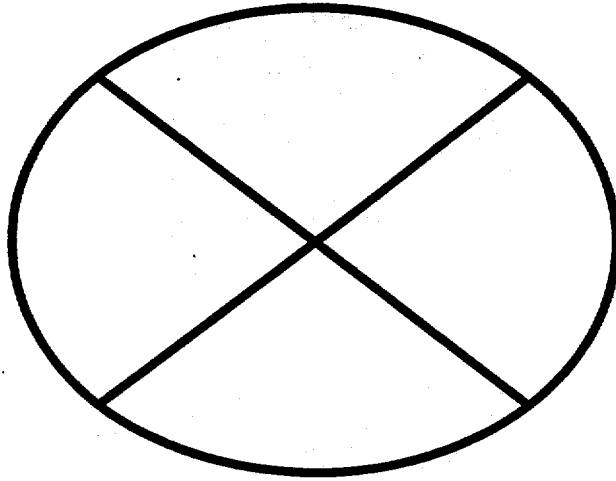
No effort was made in this study to re-inventory or re-evaluate these facilities. Examination of existing inventories was the basis of the firm's conclusions regarding sport fishing, boating, and swimming, as discussed in subsequent parts of this report.

### Sport Fishing

Sport fishing is one of South Carolina's major forms of recreation. In 1974-1975, 389,582 fishing licenses were issued. Combined resident and non-resident user-occasions for boating and fishing in 1975 were estimated to be 11,901,068. /15/

South Carolina has 2,876 miles of tidal shoreline and over 10,000 square miles of offshore water area accessible to sport fishing boats. /16/ The principal river basins provide excellent fishing waters: Waccamaw and Yadkin-Pee Dee Rivers emptying through Winyah Bay; Santee-Cooper Rivers emptying through Charleston Harbor; Edisto, Ashepoo, and Combahee Rivers emptying through St. Helena Sound; and Broad Creek through Port Royal Sound.

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## Part Two

The Atlantic Intracoastal Waterway, the sheltered water route used by boats along the East Coast, is another valuable recreation resource. The Waterway throughout the State is a series of rivers, estuaries, sounds and inlets, linked by canals. It is maintained and managed by the U.S. Army Corps of Engineers. Thousands of boaters annually cruise the Waterway.

The South Carolina Wildlife and Marine Resources Department maintains numerous public boat landings for fishermen and boaters in the coastal counties of Horry, Georgetown, Charleston, Berkeley, Colleton, Beaufort, and Jasper. In addition there are numerous privately-owned and operated marinas, boat ramps, sport fishing boats and ocean piers in the coastal area, a dozen fishing piers, 29 charter fishing boats and a number of salt-water inlet fishing facilities are available in the Grand Strand area from Little River to Georgetown. Charleston and Beaufort Counties, with an abundance of marshes and estuaries, offer many private fishing and boat-launching facilities and charter fishing boats.

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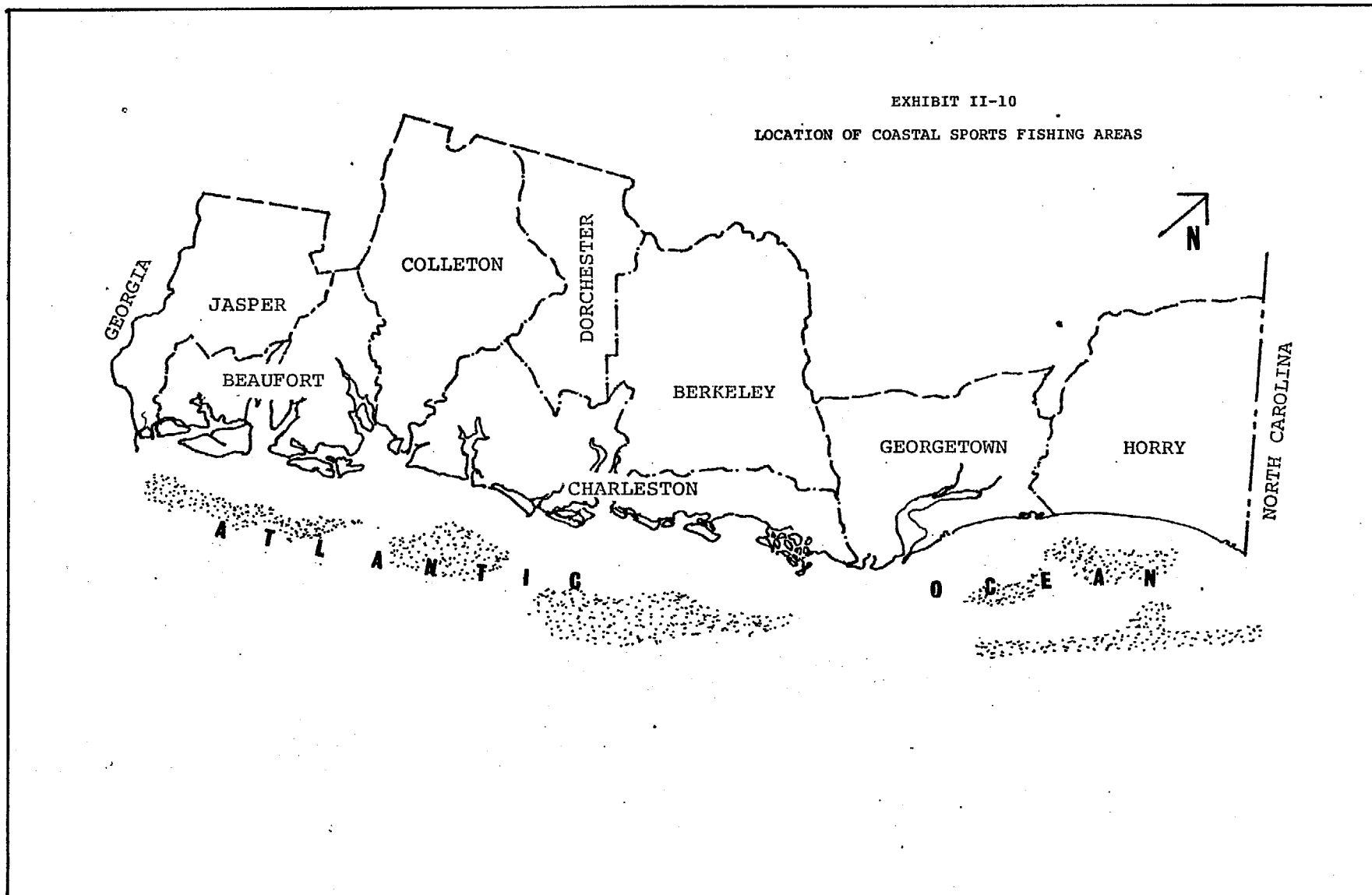
Development of the potential in salt water sports fishing will require additional and improved facilities and access areas throughout the South Carolina coast. There is an existing major need for more boat launching ramps, access canals for small boat users, and improved marina and dockage facilities. Many of these marina facilities offer profit potential to the private sector.

### Boating

In 1974, the coastal counties of South Carolina contained 30,548 registered boats compared to a State-wide total of 141,881. (Exhibits II-11 and II-12)

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## Part Two

### EXHIBIT II-11

#### NUMBER OF REGISTERED MOTOR BOATS WITHIN SOUTH CAROLINA 1971-1975

<u>Year</u>	<u>Number of Boats</u>
1975 (Nov.)	151,000
1974	141,881
1973	128,578
1972	87,587
1971	79,804

Source: South Carolina Division of  
Boating, Charleston, S.C. /17/

These totals include only registered motor boats used for both pleasure or commercial purposes. They do not reflect small non-power, non-registered boats like canoes, kyacks, Sunfish, Hobie Cats, and the like. The U.S. Coast Guard in a 1973 National Boating Survey has estimated that the actual number of boats within a state or region may be as much as 25 percent more than the number of registered

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### EXHIBIT II-12

#### REGISTERED MOTOR BOATS IN SOUTH CAROLINA COASTAL COUNTIES 1974

Horry County	6,197
Georgetown County	3,603
Charleston County	15,042
Colleton County	1,762
Beaufort County	3,944
	<hr/> 30,548

Source: South Carolina Division of  
Boating, Charleston, S.C.

boats. If this projection is accurate, then the estimated number of boats in South Carolina counties in 1974 would be 38,185.

While the demand for boating facilities is great, serious environmental damage can occur from extensive alteration of the marine environment, especially dredging and filling of coastal wetlands for marinas



# South Carolina Beaches

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or boat launching sites.

There are approximately 80 boat launching ramps having access to the State's salt water. Many are in need of repair, and additional ramps are needed.

### Surfing

The State's most popular surfing beaches are Ocean Drive and Cherry Grove, Ocean Plaza Pier, Pawleys Island Point, Folly Island (south of the boardwalk), Dunes Cove, Myrtle Beach State Park (south of the fishing pier), and several locations in Myrtle Beach.

Generally, surfing is permitted unless posted. Because of the hazards of loose boards to swimmers, the sport has become controversial in many communities along the coast.

### Recreational Carrying Capacity

Recommendations for allocating beach use demand and developing beach recreation facilities must be founded on the physical and aesthetic character of particular beach properties. "Recreational carrying capacity" is the concept employed in this study to compare these features. It can be defined as the character of use which can be supported by an area for a specified duration without excessively damaging either the physical environment or the visitor's experience.

Recreational carrying capacity depends on the inter-relationship of several factors: (1) physical capacity as determined by the use beyond which the natural resource will be unacceptably altered; (2) social, psychological, or visitor capacity, a subjective level beyond which individuals feel the recreational experience is not fully satisfactory because of overcrowding, noise, or loss of privacy; and (3) facility capacity, the maximum level of use which man-made facilities (e.g., parking lots, roads, trails, campsites) can accommodate. Dispersion of recreational demand requires, however, a quantification of optimal beach densities.

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Beach recreation demand can be best satisfied if coastal areas are planned according to the seasonality and market sensitivity of use. The availability of off-beach services and facilities greatly affects beach use capacity. San Diego, for example, requires a square foot of parking and other public facilities for every square foot of beach. But recreation planning is principally dependent upon the amount of sandy beach space deemed necessary for each person's recreational use.

On Long Island, where annual beach attendance has exceeded 70 million, crowding can be so severe as to allow only 20 square feet of beach per person at some beaches. It is not uncommon for Coney Island beachgoers to have only 56 square feet per person, or for their New Jersey neighbors to have only 78 square feet in Atlantic City.

The U.S. Bureau of Outdoor Recreation based its Lake Erie Basin recreation planning on the measure of 75 square feet per person, with a 1.5 turnover

## South Carolina Beaches

factor. Wisconsin's Conservation Department recommends 200 square feet per person in rural areas and 100 square feet in urban areas, both with turnover rates of three. The Texas Parks and Wildlife Department, in its State Comprehensive Outdoor Recreation Plan, recommends 300 square feet per person. For the purposes of this study, 200 square feet per person has been determined to be an arbitrarily optimal recreation density for South Carolina's beaches.

To determine the physical carrying capacity of individual beaches, the lengths and widths of major beaches are measured. (Exhibit II-13) The carrying capacity ratio (200 square feet/person) is then applied. (Exhibit II-14)

Based on these calculations, the State's total developed beaches have a daily recreational carrying capacity of 238,673 persons. (Exhibit II-14) The recreational carrying capacity of the State's presently undeveloped beaches are noted in Exhibit II-15.

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# South Carolina Beaches

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### EXHIBIT II-13

#### SOUTH CAROLINA OCEAN BEACH DIMENSIONS

Beach Area	Width of Dry Sand	Width at Mean Tide	Total Width	Length	Length
WACCAMAW REGION					
Waties Island	10 feet	93 feet	100 feet	2.3 mi,	12,144 feet
North Myrtle Beach	20	125	145	9.3	49,104
Atlantic Beach	20	125	145	0.3	1,584
Myrtle Beach	20	70	90	15.7	82,896
Myrtle Beach State Park	20	100	120	1.2	6,336
Surfside Beach	60	50	111	2.1	10,560
Garden City Beach	50	50	100	4.0	21,120
Huntington Beach State Park	20	70	95	3.0	15,840
North Litchfield Beach	50	75	125	1.5	7,920
Undeveloped IP Property	--	--	---	1.0	--
Litchfield Beach	75	75	150	1.5	7,920
Pawleys Island	50	50	100	2.5	13,200
Debidue Beach	50	50	100	3.3	17,424
North Island	50	50	100	8.0	42,240
CHARLESTON REGION					
South Island	10	100	110	1.0	5,280
Cedar Island	10	50	60	2.5	13,200
Murphy Island	10	50	60	4.2	22,176
Cape Romain Wildlife Refuge	--	--	---	---	---
Bull Island	10	100	110	5.7	30,096

## EXHIBIT II-13 (con't.)

## SOUTH CAROLINA OCEAN BEACH DIMENSIONS

Beach Area	Width of Dry Sand	Width at Mean Tide	Total Width	Length	Length
CHARLESTON REGION (con't.)					
Capers Island	0	50	50	1.8	9,504
Deweese Island	50	50	100	1.8	9,504
Isle of Palms	50	100	150	6.2	32,736
Sullivan's Island	50	138	188	2.6	13,728
Folly Island	5	88	93	5.2	27,456
Kiawah Island	50	150	200	8.0	42,240
Seabrook Island	0	50	50	1.8	9,504
Edisto Island	25	80	115	2.5	13,200
Edisto Beach State Park	25	80	115	1.5	7,920
LOW COUNTRY REGION					
Hunting Island State Park	25	70	95	3.8	20,064
Fripp Island	50	75	125	2.3	15,144
Pritchards Island	10	75	85	2.5	13,200
St. Phillips Island	10	75	85	1.0	5,200
Hilton Head Island	50	150	200	11.4	60,192
Daufuskie Island	--	--	50	3.0	15,240
Turtle Island	--	--	--	--	--

Source: Hartzog, Lader &amp; Richards.

# South Carolina Beaches

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### EXHIBIT II-14

#### RECREATION CARRYING CAPACITY OF DEVELOPED SOUTH CAROLINA OCEAN BEACHES

<u>Beach Area</u>	<u>Estimated Beach Acreage</u>	<u>Recreational Carrying Capacity</u>
North Myrtle Beach	163.5 acres	35,600 persons/day
Atlantic Beach	5.3	1,148
Myrtle Beach	171.2	37,303
Myrtle Beach State Park	16.7	3,643
Surfside Beach	26.9	5,860
Garden City Beach	48.5	10,560
Huntington Beach State Park	35.5	7,524
North Litchfield Beach	22.7	4,950
Litchfield Beach	27.3	5,940
Pawleys Island	30.3	6,600
Bulls Island	76.0	16,552
Isle of Palms	72.7	15,840
Sullivans Island	43.5	9,472
Folly Island	58.6	12,767
Seabrook Island	10.9	2,376
Edisto Island	34.8	7,590
Edisto Beach State Park	20.9	4,554
Hunting Island State Park	43.8	9,530
Fripp Island	34.8	7,590
Hilton Head Island	276.4	60,192
Total		238,673 persons/day

Source: Hartzog, Lader & Richards.

## South Carolina Beaches

## EXHIBIT II-15

RECREATIONAL CARRYING CAPACITY OF  
UNDEVELOPED SOUTH CAROLINA OCEAN BEACH AREAS

<u>Beach Area</u>	<u>Estimated Beach Acreage</u>	<u>Recreational Carrying Capacity</u>
Waties Island	28.7 acres	6,254 persons/day
Undeveloped IP Property	NA	NA
Debidue Beach	40.0	8,712
North Island	96.7	21,120
South Island	13.3	2,904
Cedar Island	18.2	3,960
Murphy Island	30.5	6,653
Capers Island	10.9	2,376
Deweese Island	21.8	4,752
Isle of Palms (Eastern tip)	40.0	8,712
Kiawah Island	194.0	42,240
Pritchards Island	25.8	5,610
St. Phillips Island	10.3	2,244
Daufuskie Island	18.2	3,960
Turtle Island	--	--
 Total		 119,497 persons/day

Source: Hartzog, Lader &amp; Richards.

### Non-Motorized Access

Apart from vehicular traffic on the beach at North Myrtle Beach in winter and occasional cars on Kiawah Island, motor traffic is not a problem for South Carolina's beaches. Municipal and county ordinances generally ban such access.

#### Hiking, Biking, and Hosteling /18/

As a consequence of America's energy shortage and interest in physical fitness, hiking and bicycling have become major recreation interests. From 1972 to 1974, sales of bicycles in the United States surpassed those of automobiles for the first time since World War I. If South Carolina residents and vacationers are to hike and bike safely along the coast, there must be adequate, safe pedestrian and bicycle ways and accommodations for those whose access is non-motorized.

Hiking and biking trails encourage non-motorized access to beaches, ensure greater safety, and enhance the recreation experience. But these paths are expensive to construct, sometimes similar to conventional roadways in cost. They require land which may be difficult to acquire, create right-of-way problems when they intersect with other transportation modes, and require costly maintenance.

From classifications derived from Oregon, California, and Georgia, three classes of trails may be distinguished. Hiking/biking paths, separate roadways for exclusive non-motorized access, are highly desirable along the South Carolina coast, but may cost more than \$20,000 per mile. Special lanes, with restricted right-of-way, are hazardous by their proximity to automotive travel, but may be set aside by signs and street markings for less than \$3,000 per mile. Shared roadways, distinguished by signs and markers costing less than \$500 per mile, channel hikers and bikers to less frequented streets and are suitable for residential areas.

All three of these roadways would benefit the State's beach users. Selection of the appropriate form depends on present uses, political and economic feasibility, local terrain, and site specific planning. Certain support facilities -- rest areas with benches, bike security devices (e.g., racks), directional markers, rain shelters, and comfort stations -- should be included in any hiking/biking trail network.

Although the financial requirements of planning, constructing, and maintaining such paths have occasionally been met solely by local, public sources, State and Federal sources may provide funds for multiple-use trails. For example, California, Illinois, and Oregon have

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statutes providing for the mandatory expenditure each year of one percent of the State's highway funds for hiking/biking trails.

Such roadways are currently popular projects with the Bureau of Outdoor Recreation, which can provide matching funds to State and local governments for their planning and construction under the Land and Water Conservation Fund Act of 1965. Approval of local beach access paths rests with the State-appointed officer and BOR and must be consistent with SCORP. Recent grants in other states have ranged from \$750 to \$425,000.

There are other federal sources of assistance in this regard. Through the State Highway Department, state agencies and local governments may obtain matching grants from the Federal Highway Administration under the 1973 Federal Aid Highway Act. In areas of high unemployment, some hiking/biking trail development funds are available from the Economic Development Agency through the Public Works Impact Program. The Department of the Army has occasionally cooperated with local officials to construct trails on government land, and U.S. Army Reserve units have sometimes contributed labor to these projects.

## South Carolina Beaches

Long-distance hiking/biking trails have been proposed for New England and are under construction along the Pacific coast. A Southeast Regional or South Carolina Trail System has been advocated by hiking/biking enthusiasts. For the purposes of beach access and recreation, however, short- and medium-length trails near urban areas are more appropriate. /19/





### Public Park Acquisition

The proposed 1976 park acquisition and development program is summarized in Exhibit II-16. Only \$515,700 is expected to be available to PRT for acquisition of recreation lands throughout the State. No estimate has been made of what portion would be spent on acquisition of coastal parks. The State Comprehensive Outdoor Recreation Plan details planned local government expenditures.

From 1975 to 1979, PRT is expected to spend \$6,515,000 on acquisition of seven district parks, four regional parks, and one destination park. During this period, the agency plans to spend \$14,383,000 on development of existing parks. The Wildlife and Marine Resources Department plans to spend \$1,150,000 during this period on development of boat access. /20/ During 1975-79, the Department of Wildlife and Marine Resources

plans to spend \$215,000 for acquisition and \$3,814,000 for development of fishing facilities.

A detailed acquisition and park development plan for 1975-79 is indicated in Exhibits II-17 and II-18. Coastal land acquisition includes Patriot's Point in Charleston (500 acres) in 1976, and a regional park on the Savannah River (5,000 acres) in 1979. Four undesignated parks have been proposed for acquisition in 1978-79.

By 1989, the exurban public park system along the coast region will include 25 parks. Eleven of these have not been identified in Exhibit II-19. However, map location indicates 500-acre parks on the mainland near Hilton Head Island, on John's Island near Kiawah Island, on the Isle of Palms, and in the Francis Marion National Forest. Parks developed on Waccamaw and Waties Island are also included.

## South Carolina Beaches

## EXHIBIT II-16

PROPOSED ACQUISITION AND  
DEVELOPMENT EXPENDITURE PROGRAM  
1976

	<u>Acquisition</u>	<u>Development</u>
<u>State Agency</u>		
PRT	\$515,700	\$3,030,000
Highway Dept.	-0-	-0-
Wildlife & Marine		
Resources	-0-	998,000
Forestry	-0-	21,700
STATE TOTAL	\$515,000	\$4,049,700
<u>Federal Agency</u>		
Forest Service	\$ 769,750	\$ 16,000
Park Service	-0-	-0-
Fish & Wildlife Service	-0-	-0-
Corps of Engineers	-0-	533,000
Soil Conser. Service	424,500	56,600
FEDERAL TOTAL	\$1,194,250	\$605,600
<u>Local Agencies</u>		
District #8	-0-	\$ 265,000
Waccamaw		
District #9	\$400,000	2,353,000
Charleston-Berkeley		
District #10	50,000	222,000
Low Country		
LOCAL TOTAL	\$450,000	\$2,840,000
TOTAL ALL SOURCES	\$2,159,950	\$7,495,300

Source: South Carolina Comprehensive Outdoor Recreation  
Implementation Plan, SCORP 1975, Title 6, pp. 8,9.

# South Carolina Beaches

## Part Two

### EXHIBIT II-17

#### DETAILED 1975-1979 ACQUISITION PLAN

<u>Park Name</u>	<u>Operating Agency</u>	<u>Acres</u>	<u>Region</u>	<u>Type</u>	<u>Acquisition Year</u>
New Parks					
Musgrove's Mill	PRT	356	1	District	1975
Hanging Rock	PRT	250	1	District	1975
Drayton Hall	PRT	633	3	District	1975
Longbluff	PRT	230	2	District	1975
I 85/Andersonville	PRT	2,000	1	Destination	1976
Upper Coast	PRT	750	3	Destination	1977
Grays Lake	PRT	1,500	3	District	1977
Patriots Point	P.P. Author.	500	3	District	1976
New Horizons	N.H. Author.	2,500	2	Regional	1975
Savannah River	PRT	5,000	1	Regional	1979

## Part Two

# South Carolina Beaches

### EXHIBIT II-17

#### DETAILED 1975-1979 ACQUISITION PLAN

<u>Park Name</u>	<u>Operating Agency</u>	<u>Acres</u>	<u>Region</u>	<u>Type</u>	<u>Acquisition Year</u>
New Parks					
John D. Long	Wildlife	216	2	District	1975
Undesignated	PRT	2,000		Regional	1979
Undesignated	PRT	500		District	1979
Undesignated	PRT	500		District	1978
Undesignated	PRT	500		District	1978
Additions to Existing Parks					
Table Rock	PRT	208.	1	Regional	1975
Kings Mountain	PRT	500	1	Destination	1977
Oconee	PRT	209	1	Destination	1975

Source: SCORP, 1975, Title 6, p. 22.

# South Carolina Beaches

## Part Two

### EXHIBIT II-18

#### DETAILED 1975-1979 PARK DEVELOPMENT PLAN

<u>Park Name</u>	<u>Program Development Cost</u>					<u>Total</u>
	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	
33 Existing Parks	825,000	1,245,000	2,857,000	3,430,000	3,085,000	11,442,000
Hanging Rock	50,000					50,000
Long Bluff	125,000					125,000
Patriots Point		1,100,000	400,000	350,000	200,000	2,050,000
John D. Long		900,000				900,000
New Horizons		200,000	200,000	500,000		1,400,000
<b>TOTALS</b>	<b>1,000,000</b>	<b>3,445,000</b>	<b>3,457,000</b>	<b>4,280,000</b>	<b>3,785,000</b>	<b>15,967,000</b>

Source: SCORP, 1975, Title 6, p. 23.

# Part Two

# South Carolina Beaches

## EXHIBIT II-19

### PROPOSED COASTAL REGION 1989 EXURBAN PUBLIC PARK SYSTEM

No.*	Park Name	Existing		Proposed	
		Type	Acreage	Type	Acreage
1.	Mainland - near Hilton Head Island			1	500
2.	Hunting Island	3	5,000		
3.	Edisto Beach	2	1,525		
4.	Johns Island - Stone River			1	500
5.	Patriots Point			1	500
6.	Charlestowne Landing	1	664		
7.	Mt. Pleasant			1	500
8.	Francis Marion Forest			1	500
9.	Hampton Plantation	1	321		
10.	Waccamaw			1	500
11.	Huntington Beach	2	2,500		
12.	Myrtle Beach	2	312		
13.	Waties Island			3	750
14.				1	500
15.				1	500
16.				1	500
17.				1	500
18.	Lake Moultrie			3	10,000
19.				1	500
20.				1	500
21.	Drayton Hall			1	633
22.	Givhans Ferry	2	1,235		
23.				1	500
24.	Colleton Wayside	1	35		
25.	Grays Lake			1	1,500
TOTALS			11,592		19,383

\* Number refers to location of parks on Exurban Park System Map in SCORP Plan.

Type: 1 - District Park;  
2 - Regional Park;  
3 - Destination Park.

Source: SCORP, 1975, Title 6, p. 21.

# South Carolina Beaches

## Part Two

### Specific Park Sites

A combination of funding sources was employed by the State in its acquisition program. Some \$372,886 was made available through the State's Recreation Land Trust Fund for the purchase of land with an estimated value of \$4,535,113. Of these eight projects, four -- Drayton Hall Historic Park, Hampton Plantation State Park, Capers Island, and Turtle Island -- are located in the coastal zone. In November, 1975, Turtle Island was donated to the State for recreational use.

PRT plans to develop four parks, based on public and private investments, in the Waccamaw planning area:

- A 500-acre district park to be located somewhere along the Waccamaw River in Horry County,
- A 500-acre regional park to be located in the vicinity of the confluence of the Great and Little Pee Dee Rivers.

Although the facility will be located in Marion County, it will be available for use by residents of the Waccamaw Region.

- A 500-acre district park to be located south of Georgetown, on Highway 701, and
- A 500-acre district park to be located along the Black River in Williamsburg County.

Three district parks, 500 acres each, are recommended by PRT for Charleston County, three for Berkeley, and one for Dorchester. The proposed Charleston County parks are a 160-acre site on the Stone River on Johns Island, a 140-acre site in Mt. Pleasant with access to deep water via the Wando River, and 200 acres along Highway 61, that have no water access for recreational use.

No regional parks have been proposed for Beaufort County.

## Part Two

The State's 1980-1989 Development Plan calls for ten new parks during 1980-1985. First-phase public development costs are estimated to be \$10,000,000. Ten new parks are proposed for development during 1985-1989 at an estimated public cost of an additional \$10,000,000.

In addition, there is proposed a system of special public parks with a different recreation emphasis. These will provide combined recreational, environmental, cultural, and historic experiences. Their objectives are preserving and interpreting significant examples of the State's natural and man-made heritage.

Exhibit II-20 illustrates the high cost of beachfront property. cursory review of these figures emphasizes that the limited resources of public coffers often preclude the use of beach acquisition as a simple solution to coastal recreation problems.

## South Carolina Beaches

### EXHIBIT II-20

#### UNIMPROVED BEACHFRONT PROPERTY COSTS EASTERN UNITED STATES

	<u>Average Cost per Front Foot</u>
East Hampton, Long Island	\$1,000
Fire Island, New York	200-500
Atlantic City, New Jersey	618-900
Ocean City, Maryland	1,200-1,600
Virginia Beach, Virginia	1,000
Nags Head, N.C.	730
Surfside Beach, S.C.	1,000
Pawleys Island, S.C.	1,000
Isle of Palms, S.C.	640
Folly Beach, S.C.	300
Hilton Head Island, S.C.	1,100-1,800

Source: HLR Survey, January, 1976.



# South Carolina Beaches

## Part Two

### Economic Perspective

South Carolina coastal businessmen have a large stake in the United States tourism and recreation market. One-sixth of the nation's travel is created by trips along the South Atlantic Coast. /21/ In 1974, in addition to South Carolinians' own beach recreation, 30.9 million non-residents visited and spent \$896.2 million in the State. /22/ These expenditures account for eight percent of all retail trade and service receipts in the State. /23/

The economic impact of tourism and recreation upon beach communities, clearly significant, can be measured in many different ways. Contributions to employment, income, tax revenues, and non-travel-oriented businesses must all be considered in formulating an economic perspective of public beach and recreation in South Carolina.

Businesses who cater to travelers are not the only ones who profit from beach recreation. Travel and recreation revenues pass quickly to other individuals and industries. The beach user's dollar, spent for food, lodging, entertainment, or supplies, flows through wholesale outlets, distributive services, financial institutions, manufacturing industries and agriculture. In this commercial process, the beach user's dollar is multiplied, generates additional trade, creates jobs, and fosters community development.

A recent North Carolina study showed that income multipliers for the travel industry range from 1.10 to 1.24. Employment multipliers in this industry range from 1.04 to 1.76. Specific multipliers by type of expenditure are listed in Exhibit II- 21./24/

For example, every \$100,000 spent on food generates \$110,000 total income. As a result of these expenditures, approximately 11 persons are employed directly by the food enterprise and eight more people are employed in other businesses.

## EXHIBIT II-21

INCOME AND EMPLOYMENT MULTIPLIERS  
IN TRAVEL INDUSTRY

<u>Type of Expenditure</u>	<u>Income Multiple</u>	<u>Employment</u>	
		<u>Per \$1,000 of Production</u>	<u>Multiplier</u>
Food	1.10	.11	1.76
Lodging	1.24	.10	1.15
Admission Fees	1.24	.10	1.15
Gifts/Souvenirs	1.10	.11	1.76
Recreation	1.24	.10	1.15
Gas, Oil	1.14	.14	1.06
Vehicle Repairs	1.14	.14	1.06
Miscellaneous	1.11	.15	1.04

Source: Research Triangle Institute, An Input/Output Model of North Carolina Final Report FR-ou-490, January, 1971.

# South Carolina Beaches

## Part Two

### EXHIBIT II-22

#### TOTAL EXPENDITURES IN SOUTH CAROLINA OF NON-RESIDENT TRAVELERS WITH SOUTH CAROLINA DESTINATIONS

SHOWN BY SOUTH CAROLINA DESTINATIONS  
1974

<u>Destination</u>	<u>Expenditure</u>	<u>Percent</u>	<u>Destination</u>	<u>Expenditure</u>	<u>Percent</u>
Myrtle Beach	\$348,681,300	56.4	Darlington	\$3,091,146	0.5
Charleston	98,298,453	15.9	Orangeburg	3,091,146	0.5
Columbia	38,948,444	6.3	Allendale	2,472,917	0.4
Hilton Head	35,239,068	5.7	Georgetown	2,472,917	0.4
Florence	12,982,814	2.1	Clemson	2,472,917	0.4
Beaufort	9,891,668	1.6	Rock Hill	1,854,688	0.3
Spartanburg	9,891,668	1.6	Isle of Palms	1,854,688	0.3
Greenville	9,273,439	1.5	North Augusta	1,854,688	0.3
Santee	6,182,293	1.0	Greenwood	1,236,459	0.2
Sumter	5,564,063	0.9	Walterboro	1,236,459	0.2
Clark Hill	3,709,376	0.6	Anderson	1,236,459	0.2
Fripp Island	3,709,376	0.6	Lancaster	1,236,459	0.2
Aiken	3,091,146	0.5	Other	6,800,522	1.1
Dillon	3,091,146	0.5			

Source: South Carolina PRT, 1974 South Carolina Travel Study: Summary Report, 1975, p. 9.

## Part Two

South Carolina tourism and recreation businesses retain about ten cents from each sales dollar as earnings for their labor and management. The remaining 90 cents is passed to other businesses and industries. Operating ratios for several South Carolina tourism and recreation establishments show sales receipts are spent approximately as follows: /25/

Purchases of goods from other industries	32¢
Purchases of services from other industries	14¢
Payrolls & other income paid out	34¢
State and local taxes paid	16¢
Federal taxes and other expenses	4¢

Total expenditures of non-resident travelers with South Carolina destinations in 1974 are shown in Exhibit II-22. To illustrate the economic impact of travel spending on beach communities, Isle of Palms may serve as an example. The estimated \$1.9 million spent at Isle of Palms in 1974 generated more than \$2.1 million income and was indirectly or directly responsible for the employment of approximately 250 people. /26/

## South Carolina Beaches

Statewide, nearly 16,000 retail and service enterprises, which employ more than 68,000 workers, serve South Carolina visitors. Approximately 20 percent of all retail trade and service business in the state is recorded by firms in the travel business. Their receipts are growing at a rate of 7 percent per year, compared to 6 percent national average. /27/ If businesses typically serving beach day users were added to these figures, the impact would appear even greater.

The economic importance of tourism and recreation to beach communities and the State as a whole cannot be overstated. South Carolina's beaches have been a primary foundation for tourism, the State's second largest industry. Optimizing public beach access and recreation, therefore, promises substantial benefits to both the private and public sectors of the State's economy.

# South Carolina Beaches

## Part Two

<sup>1</sup> Population data in this section was obtained from "Resident Population Trends, Waccamaw Region, 1930-1970", Population and Economy, Waccamaw Regional Planning and Development Council, April, 1972, at 20.

<sup>2</sup> Interview: Mr. Harry Lockwood, Horry-Georgetown Technical Education Center, Conway, S.C.

<sup>3</sup> Waccamaw Regional planning and Development Council Housing Survey, 1972, in Public Improvements Capital Budget, North Myrtle Beach, Waccamaw Regional Planning and Development Council, June 1975, at 57.

<sup>4</sup> Grand Strand Comprehensive Planning, 1973, North Myrtle Beach, S.C., Waccamaw Regional Planning and Development Council, at 13.

<sup>5</sup> Atlantic Beach - Reconnaissance Survey and Program Design, Waccamaw Regional Planning and Development Council, September 1, 1973, at 1.

<sup>6</sup> Myrtle Beach Chamber of Commerce, Myrtle Beach, South Carolina.

<sup>7</sup> Grand Strand Comprehensive Planning Study, August, 1973, at 14.

## Part Two

8 Master Plan and Land Use Plan, Myrtle Beach State Park (South Carolina PRT, January, 1971), updated by interviews.

9 Community Facilities Plan, Surfside Beach, S.C., Waccamaw Regional Planning and Development Council, March, 1975, at 48+.

10 Land Use Survey and Analysis, Surfside Beach, S.C., Community Affairs Section, State Planning and Grants Division, Office of the Governor, May, 1971, Table 3, at 24.

## South Carolina Beaches

11 Sales Management, 1974, Survey of Buying Power, July 8, 1974. The Charleston SMSA includes all three counties.

12 Land Use Survey and Analysis, Charleston County, S.C. (Berkeley-Charleston-Dorchester Planning Council, June, 1975)

13 Folly Island Development Plan, supra, at 12.

14 Initial Land Use Element, Low Country Regional Planning Council, (June 22, 1972), at 2.

COASTAL ZONE  
INFORMATION CENTER

FEB 1 1978

# South Carolina Beaches

## Part Two

15 Hunting Island State Park Development Plan, South Carolina PRT.

16 South Carolina Public Outdoor Recreation Systems Implementation Program, ch. 2, at 36.

17 Ibid.

18 All boats including sailboats with motors are classified as "motor boats" by the State, and must be registered. Only those boats exceeding 14 feet in length (with or without a motor) must be titled. No statistics exist on the number of sailboats within the State. Many are utilized because of their small size, or registered as a "motor boat" because they are equipped with an auxiliary engine.

19 "Bicycling and Hostels", Outdoor Recreation Action, No. 34 (Winter, 1974) (U.S. Dept. of the Interior, Bureau of Outdoor Recreation).

20 See "Charleston Area Bikeways Study", A Report Prepared by CFP Transportation Engineers and Planners, Inc., and Reynolds, Smith and Hills, Inc. for the Charleston County PRT and BCD Regional Planning Council.

21 SCORP 1975, Table 6-5, at 87.

22 Copeland, Leona and Lewis, Travelers and South Carolina Business During 1972, University of Tennessee, 1973, at ii.

23 South Carolina Department of Parks, Recreation and Tourism, 1974 South Carolina Travel Study, Summary Report, 1975, at 1.

## Part Two

## South Carolina Beaches

24 Copeland, Leona and Lewis, supra,  
at 8.

25 Research Triangle Institute, 1973  
North Carolina Travel Survey, Research  
Triangle Park, North Carolina, 1974,  
at 7.

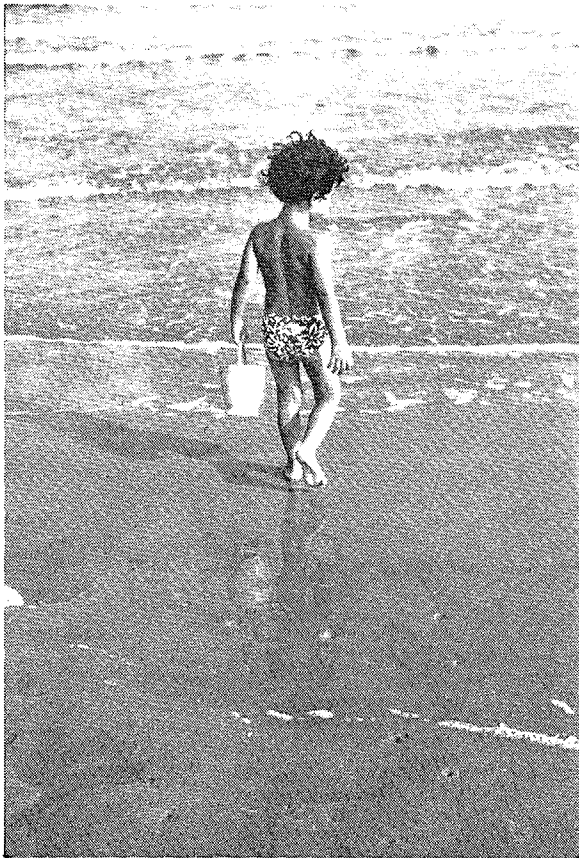
26 Copeland, Leona and Lewis, supra,  
at 9-11.

27 South Carolina Department of Parks,  
Recreation and Tourism, supra, at 10.

28 South Carolina Department of Parks,  
Recreation and Tourism, Orientation Report  
for Governor-Elect James B. Edwards,  
December 10, 1974, no page numbers.



# Market Analysis



## Part Three

### Market Analysis

Coastal planning requires market analysis which recognizes various kinds of beach use, differentiates user characteristics, and contrasts markets for particular beach areas. This study consequently,

- \* analyzes South Carolina beach users as described in secondary data;
- \* estimates current and projected levels of demand for specific beach areas; and
- \* describes trends which will likely impact future South Carolina tourism and recreation markets.

Considered with the Beach User Survey, this market analysis raises significant issues for the proposed Beach Access Plan to address.

The resources of South Carolina and Charleston PRT's, BOR, the Myrtle Beach Chamber of Commerce, and studies conducted by private research firms are the foundation for this market analysis. However, projections of beach use were previously made on a regional basis and did not segment public beaches as

## Market Analysis

a special area of concern. It was necessary, therefore, for this market analysis to employ a gravity model to determine current and projected demand for subject beaches.

This mathematical model relates such quantifiable factors as population, distance, and available facilities to projected demand for specific beach areas. Specific numbers representing demand projections are estimates derived from the best available data. Such quantitative inputs and conclusions serve primarily as references for relative consideration of overload and underuse of particular beach areas. The numbers are not absolute and should not be so interpreted for any purpose.

Although it is generally known that certain beaches are primarily used for vacations or day-use, there exists little data concerning specific beach users, demographics, their trip characteristics, or their residence of origin. To fill this gap, this firm conducted a Beach Use Survey of nine public beach areas. Data and findings from the sampling of nearly 1,300 respondents contributed to and supplements this market analysis.

# Market Analysis

## Part Three

Certain market trends are central to this analysis. Anticipated changes in economic and demographic characteristics which shape the family vacation market will greatly influence the State's tourism industry. Strongly rising discretionary incomes, increases in the 25-34 and 35-44 age groups, and a decline in birth rates will combine to contribute to a growing, more affluent family vacation market.

Socio-cultural trends point to additional leisure and travel expenditures, both in gross and as an increasing portion of total personal consumption. Effects of the 1973-74 recession, the compressed work week, the energy crisis, increased vacation time, and private development strategies are additional factors which this study considers.

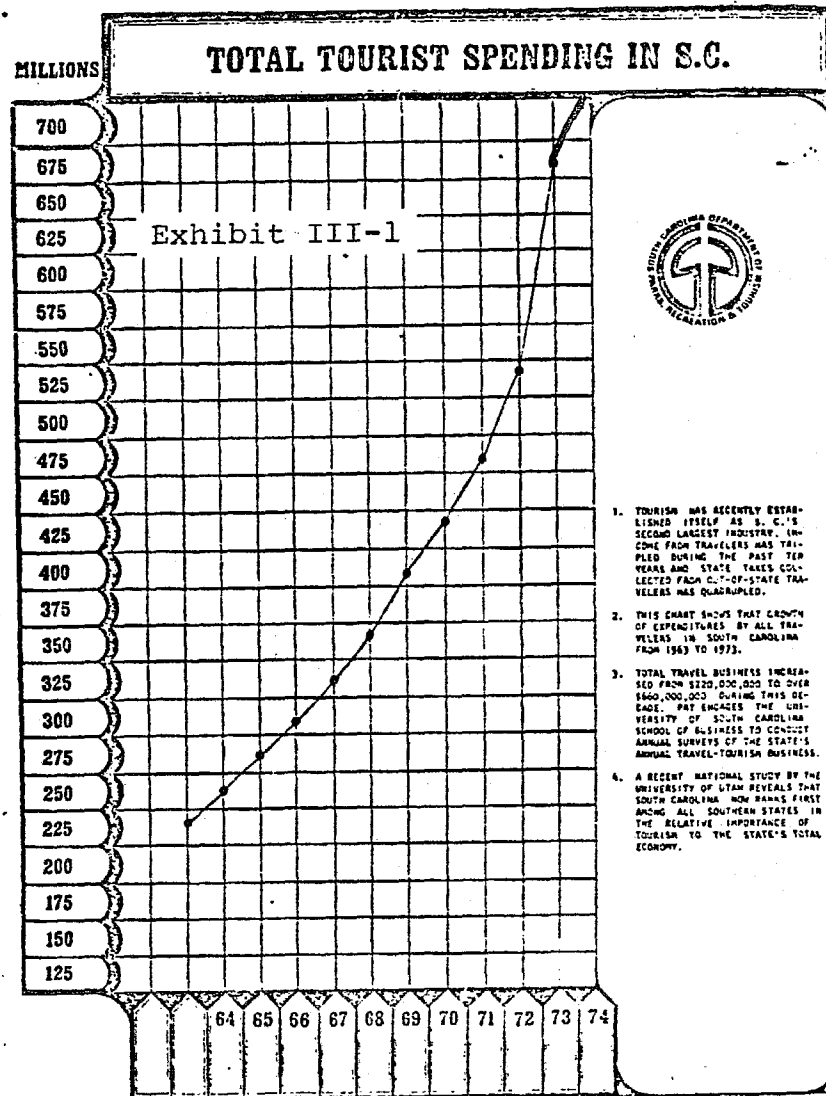
## Market Overview

South Carolina possesses a wealth of water- and land-based recreation areas. The favorable climate, various types of tourist attractions, and wide range of facilities draw a large number of both South Carolina residents and out-of-state visitors each year. Tourism has recently established itself as South Carolina's second largest industry. /1/

The 1974 South Carolina Travel Study showed that South Carolina was the destination point of more than ten million tourists in 1974. /2/ Another twenty million passed through the State on their way to various northern and southern destinations. Total tourist spending amounted to \$896,244,000, with \$618,229,000 being spent by tourists having South Carolina destinations.

These figures represent an increase of 36% in total tourist expenditures from 1973 to 1974. Approximately one-third of this increase can be attributed to the effect of inflation, but expenditures were substantially higher in real terms. South Carolina tourist spending, graphically noted in Exhibit III-1, has tripled during the past ten years.

## Part Three



Source: South Carolina PRT, Orientation Report for Governor Elect James B. Edwards, December 10, 1974.

## Market Analysis

### The Tourism Industry

Tourism can be a major vehicle for statewide economic development. In 1972, the U.S. Travel Data Center estimated that travel expenditures on trips 100 miles or more away from home produced expenditures topping \$1 billion in eight states: California, Florida, New York, Texas, Pennsylvania, Illinois, Michigan and Ohio. /3/

Tourism is also a potent tool for increasing personal income. A recent study of family income patterns during two decades concluded that increases were greater in tourism/recreation areas than in those dominated by other industries. Tourism development is particularly good for depressed rural areas which cannot attract manufacturing, professional service, or public administration employment. /4/

Tourism development in South Carolina thus provides the opportunity to increase employment and living standards in low income areas while strengthening the State's economic base.

Seventy-two percent of South Carolina-bound vacationers visited the State's coastal areas in 1974. Myrtle Beach, Charleston, and Hilton Head Island together received 78% of the \$618.2 million spent by South Carolina-bound tourists. /5/ Recreational

# Market Analysis

## Part Three

use of the State's coastline is clearly vital to the State's tourism, and this industry presents further opportunities for the State's economic growth and conservation of valuable natural resources.

### Tripmaker Characteristics

Tripmaker characteristics differ according to the type of beach use. Exhibit 2 summarizes the demographic characteristics of the two primary groups of beach users: day visitors and vacationers.

Thus, the demographic differences of beach users vary only slightly by type of use. As the cost involved might suggest, vacationing families are slightly older, slightly more affluent than day visitors.

Exhibit III-2		
DEMOGRAPHIC SUMMARY OF SOUTH CAROLINA BEACH USERS BY TYPE OF BEACH USE		
	<u>Day Visitor</u> <u>%</u>	<u>Vacationer</u> <u>%</u>
Age of Household Head		
under 25	20.8	14.6
25-34	24.2	24.1
35-44	23.7	26.2
45-54	23.2	23.7
55-64	6.1	7.3
over 65	1.4	2.9
Median Age	37	39
Household Income		
under 5,000	9.2	3.5
5,000 - 999	21.1	19.2
10,000-14,999	27.6	25.8
15,000-24,999	22.8	27.9
25,000-49,999	7.8	11.6
50,000 +	.7	.9
Median Income	\$12,600	\$14,200
Source: <u>HLR Beach Use Survey</u> , August, 1975.		

## Part Three

### The Auto Vacation Market

Auto vacationers comprise an upscale market. /6/ The typical auto vacationer is relatively well-educated, has an above-average income, and is likely to be employed in a white-collar occupation. These demographic characteristics are compared with the national average in Exhibit III-3.

Approximately 54 percent of auto vacationers have at least some college education, compared to the national percentage of 21 percent. The median household income in the United States is slightly above \$10,000, yet the average household income in the auto vacation market is estimated to be more than \$16,000. More than one-half of the household heads of auto vacationing families are employed in professional, technical, and managerial positions, compared with the 24 percent nationally.

Thus, a substantial portion of the auto vacation market is not motivated primarily by the economics of auto travel. Although a family of four may be able to take a long-distance vacation by car for less than the total cost of the same trip by air, the car is chosen primarily because of the desire for flexibility. Travel by any other mode reduces the family's ability to change

## Market Analysis

plans en route, to remain mobile, and to enjoy various attractions along the way.

The implications of the figures in Exhibit III-3 should be instructive to South Carolina tourism and recreation planners. The typical auto vacationer's above-average income permits him to be a "free spender". He is willing to spend discretionary dollars when he knows he is receiving something of value in return. Generally, auto vacationers do not budget their vacations in much detail before leaving home. They generally utilize credit cards to a significant extent. /7/

The vacation is an escape from the family's normal living environment, one dominated by clocks, calendars, and schedules. Although vacations may be tentatively planned, the automobile allows a family to deviate -- to escape the fixed schedule.

Thus, auto vacationing can be explained more in terms of psychology than economics. Because of relatively high incomes, many auto travelers could choose other modes of transportation. In fact, the auto traveler is also a frequent user of air transportation. Generally, however, the automobile is chosen for vacation because of the freedom it provides families.

# Market Analysis

## Part Three

### Exhibit III-3

#### AUTO VACATION MARKET DEMOGRAPHIC CHARACTERISTICS

	<u>Auto Travelers</u> <u>Family Head a)</u> <u>%</u>	<u>National</u> <u>Average b)</u> <u>%</u>		<u>Auto Travelers</u> <u>Family Head a)</u> <u>%</u>	<u>National</u> <u>Average b)</u> <u>%</u>
Educational Level - Head of Household			Occupation - Head of Household		
Less than High School	11	45	Professional/Technical	30	14
High School Graduate	35	34	Managerial/Self-Employed	25	11
1-3 years of college	18	10	Semi-skilled	14	36
College graduate	17		Sales	7	7
Post-graduate	<u>19</u>	<u>11</u>	Clerical	4	18
	100	100	Others	<u>20</u>	<u>14</u>
				100	100
Household Income			Source: a) Mayo, Edward J., <u>The Psychology of Choice in the Lodging Market.</u>		
Under 7,000	5	31	b) <u>U.S. Bureau of the Census, U.S. Census of Population.</u>		
7,000-9,999	12	20			
10,000-14,999	32	27			
15,000-19,999	26				
20,000-24,999	11	22			
Over 25,000	<u>14</u>	<u>—</u>			
	100	100			

## Part Three

The auto vacationer's life-style indicates that his psychological needs -- change of pace and scenery, freedom from fixed schedules and itineraries -- take precedence over the economics of vacation travel. Nevertheless, he is a rational decision-maker and is price-conscious, if not price-sensitive. His confidence in the familiar or well-known affects his travel decisions and partially explains the high repeat business of beach communities like Myrtle Beach.

For South Carolina to maintain significant increases in tourist expenditures and to lengthen the average length-of-stay, the State must take advantage of the flexibility of the auto traveler. Tourists should be made aware of all the activities available within a short driving distance of one area. For example, the historical attractions of Charleston could be combined with a beach vacation at Edisto Beach or Kiawah Island. Similarly, the auto vacationer may be diverted to unplanned destinations where beach access is nearby and evident.

## Market Analysis

### Activity Participation

Northeastern respondents have a substantially higher interest in golf, tennis and sailing than the national average. Fifty-five percent and 42 percent represent Northeasterners' participation rates in sightseeing and outdoor exhibits, such as historic areas. It is no wonder that South Carolina's coast, rich in these recreational opportunities enjoys a major portion of the Northeastern tourism market.

Swimming, fishing and picnicking remain among the nation's most popular recreational pursuits and show no correlation with income. There is a steady increase in overall participation with income levels up to \$15,000, most likely resulting from increased leisure and slightly higher income. Above the \$15,000 level, however, the increase is noteworthy -- especially in tennis, golf and sailing participation, a phenomenon attributed to the higher fixed expenses usually incurred in these sports. Exhibit III-4 shows that as income increases, there is a corresponding increase in the frequency of participation in activities associated with the South Carolina coast.



# Market Analysis

## Part Three

Exhibit III-4

### INCOME EFFECTS ON ADULT PARTICIPANT ACTIVITIES

Increasing With Increasing Income	Flat	Decreases With Increasing Income
Pool Swimming	Cards and Games	Bowling
Photography	Walking	
Golf	Ocean, Lake Swimming	
Tennis	Picnicking	
Snow Skiing	Gardening	
Sailing	Cooking	
	Bicycling	
	Fishing	

Source: Midwest Research Institute,  
Unpublished Data, 1974.

The 1974 S.C. Travel Survey showed that North Carolina contributes more than 28% of South Carolina's visitors. The next four states -- Ohio, Tennessee, Virginia, and Pennsylvania -- contribute 28%, and the remainder is divided among numerous other states. Since more than one-third of North Carolina and Georgia visitors vacation at inland vacation sites, coastal areas seem to be dominated by northern visitors./8/ Recreational preferences of South Carolina's coastal tourists can be inferred, consequently, from the Northeast regional summary of a recent leisure study./9/

More than two-thirds of Northeastern vacationers travel to the same location each year; 78% regularly pursue the same vacation activity. Thirty-nine percent cite the Atlantic Ocean as their favorite vacation area. There are, consequently, long-term benefits of attracting this market.

There is no doubt that coastal recreation, and particularly beach swimming, is America's favorite pastime. But important differences may be observed in national and state preferences.

As Exhibit III-5 illustrates, residents are far more likely to swim at the coast while vacationing in-state. They

## Part Three

prefer to swim in their home State and leave other activities for their out-of-state holidays.

Non-resident participation rates are not directly comparable to resident participation rates because the rates shown for non-residents represent the percentage of total activities participated in rather than the percentage of visitors participating in that activity. The comparison, however does serve to show that the most popular South Carolina recreational activities for non-residents are beach swimming, commercial attractions, visiting historic places, and camping. The same four activities are very popular with resident vacationers with one important addition - boating/fishing.

Thus, beach access and recreation is crucial to the State's tourism industry. Moreover, the facility requirements of resident and non-resident vacationers in South Carolina are quite similar.

### Trip Characteristics /10/

The average length of stay in South Carolina by non-resident tourists is quite low (3.7 days) in comparison to other states. Seasonal variation

## Market Analysis

is apparent: summer has the longest duration period (4.2 average days), followed by spring (4.1 days), fall (3.1 days), and winter (2.1 days).

South Carolina residents vacationing in-state spend an average of 6.4 nights away from home on a vacation trip. The average number of nights away from home on a weekend trip is 2.4 nights.

The average party size for vacationers in South Carolina is 3.9. Similarly, the typical auto vacation travel party was found to consist of four persons -- usually two adults and two children.

"Pleasure and outdoor recreation" is the major trip purpose of South Carolina vacationers, accounting for 54.7 percent of the total trips. Although nationally, "visiting friends and relatives" is the major reason for travel, that category ranks second in South Carolina and accounts for only 28.2 percent of the total person trips. The third major reason of travel, "business and convention," accounts for only 8.8 percent of the total person trips.

### Exhibit III-5

#### SOUTH CAROLINA VACATION ACTIVITY PARTICIPATION

<u>Activity</u>	<u>Vacation In-State %</u>	<u>Vacation Out-of-State %</u>	<u>Non- Residents %</u>
Visit to Historic Places	21.6	50.0	18.3
Swimming at Beaches	84.5	41.5	34.2
Commercial attractions	13.4	29.5	20.5
Golfing	8.2	6.8	3.2
Camping	33.0	16.5	12.3
Boating/Fishing	40.2	26.7	4.4
Watching Sports	6.2	8.5	4.4
Attending Shows/Events	7.2	26.1	--

Source: South Carolina Department of Parks, Recreation and Tourism, South Carolina Private Outdoor Recreation Systems Plan, Private Recreation Users Profile, p. 37.

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## Market Analysis

Exhibit III-6

### PURPOSE OF TRAVEL

<u>Purpose of Travel</u>	<u>Trip to South Carolina</u> %	<u>National Classification</u> %
Pleasure/ Outdoor Recreation	54.7	39.8
Visiting Friends & Relatives	28.2	42.2
Business & Convention	8.8	16.0
Personal/ Moving	5.9	2.0
Purpose Unknown	2.5	0.0
TOTAL	100.00	100.0

Source: South Carolina PRT, South Carolina Private Outdoor Recreation Plan, Title 3, p. 36.

Exhibit III-7

### PRIMARY TRIP PURPOSE AUTO VACATIONERS

Sightseeing	68%
Personal Reasons	13%
Relaxation	6%
Recreation	4%
Education	2%
Business & Pleasure	2%
Conventions, Conferences, etc.	2%
Company Business	1%
Other	2%
TOTAL	100%

Source: Mayo, Edward J., The Psychology of Choice in the Lodging Market, 1974.

# Market Analysis

## Part Three

Exhibit III-7, presenting the primary trip purposes of auto vacationers, demonstrates the popularity of sightseeing. The vacation, for most travelers, is an opportunity to discover America, to explore and enjoy the country's landscape. People think less frequently in such specific terms as educating children or seeking pure relaxation. Beach access and coastal recreation, therefore, can be significant factors in attracting more out-of-state tourists and in lengthening their stay.

The daily travel pattern of vacationers begins with the travel party driving shortly before 9:00 a.m. and ends at approximately 8:00 p.m. Eating patterns and end-of-the-day recreation for travelers explain adherence to this routine.

The greatest spending by travelers visiting South Carolina is for lodging; food is the second largest spending source, and automobile expenses and purchasing gifts rank third. Spending for entertainment ranks the lowest.

### Exhibit III-8

#### DISTRIBUTION OF EXPENDITURES OF SOUTH CAROLINA VISITORS

<u>Type of Spending</u>	<u>Percent of Total</u>
Lodging	35.06
Food	29.39
Auto-Gas	13.40
Entertainment	8.55
Gift	<u>13.60</u>
TOTAL	100.00

Source: South Carolina PRT, South Carolina Private Outdoor Recreation Systems Plan, Title 3, p. 39.

## Part Three

Average expenditures per party per day in South Carolina is \$29.06, considerably lower, for example, than Pennsylvania (\$86.40); Oklahoma (\$73.72); Hawaii (\$55.85); Florida (\$55.50); Nebraska (\$50.00) and California (\$49.77). South Carolina spending recorded only \$106.93 per party per visit in 1970. /11/

South Carolina's travelers' expenditures are as follows:

Average expenditure per party per visit in South Carolina	\$106.93
--	----------

Average expenditure per party per day in South Carolina	\$ 29.06
--	----------

Average expenditure per person per visit in South Carolina	\$ 39.02
---	----------

Average expenditure per person per day in South Carolina	\$ 10.60
---	----------

South Carolina's winter visitors are likely to be slightly older and more affluent than summer family vacationers, spend more money per person than their counterparts in any other season. Many are convention or conference attendees or participate in golf and tennis parties. (Exhibit III-9)

## Market Analysis

Generally, the most important motivation for long-distance family pleasure travel is the perceived educational benefits which the experience provides children. /12/ The second in importance is a need for new experiences. Other significant factors are bringing the family together, getting the most out of life while young enough to enjoy it, and collecting pleasant memories. (Exhibit III-10) Three deterrents are perceived as most important: the costs of transportation, lodging and food; the need for privacy; and problems of family travel plan organization. (Exhibit III-11)

# Market Analysis

## Part Three

### Exhibit III-9

#### AVERAGE DAILY TRIP EXPENDITURE PER PARTY IN SOUTH CAROLINA - 1970

	Spring		Summer		Fall		Winter	
	\$	%	\$	%	\$	%	\$	%
Lodging	9.54	34.40	11.72	37.47	7.95	28.60	20.13	35.43
Food	8.74	31.51	9.12	29.13	7.31	26.40	17.23	30.32
Auto/Gas	3.54	12.77	3.79	12.11	4.50	16.20	7.74	15.38
Entertain- ment	2.78	10.03	2.70	8.63	2.34	8.40	3.50	6.15
Gifts & Others	3.13	11.29	3.96	12.66	5.66	20.40	7.22	12.71
TOTAL	27.73	100.00	31.29	100.00	27.76	100.00	56.82	100.00

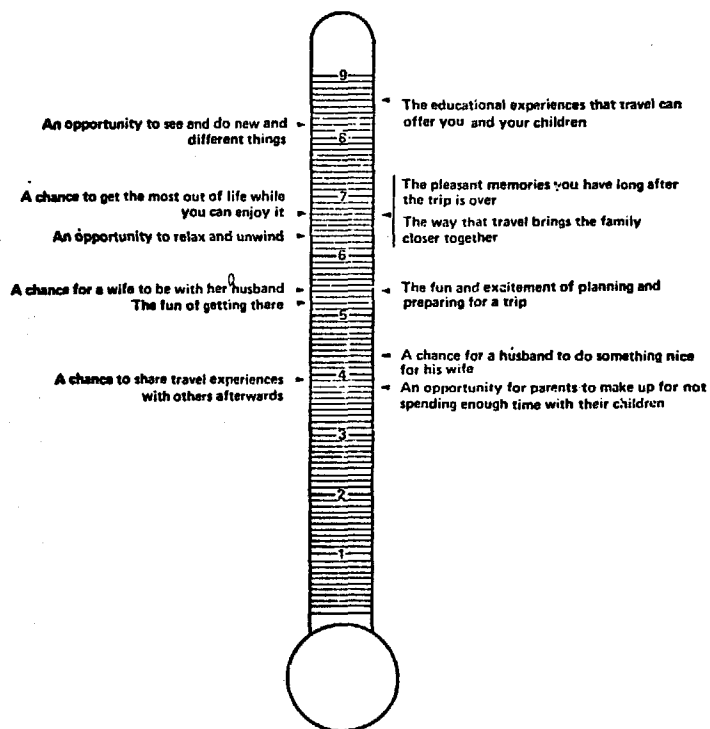
Source: South Carolina PRT, South Carolina Private Outdoor Recreation Plan, Title 3, p. 40.

## Part Three

## Market Analysis

Exhibit III-10

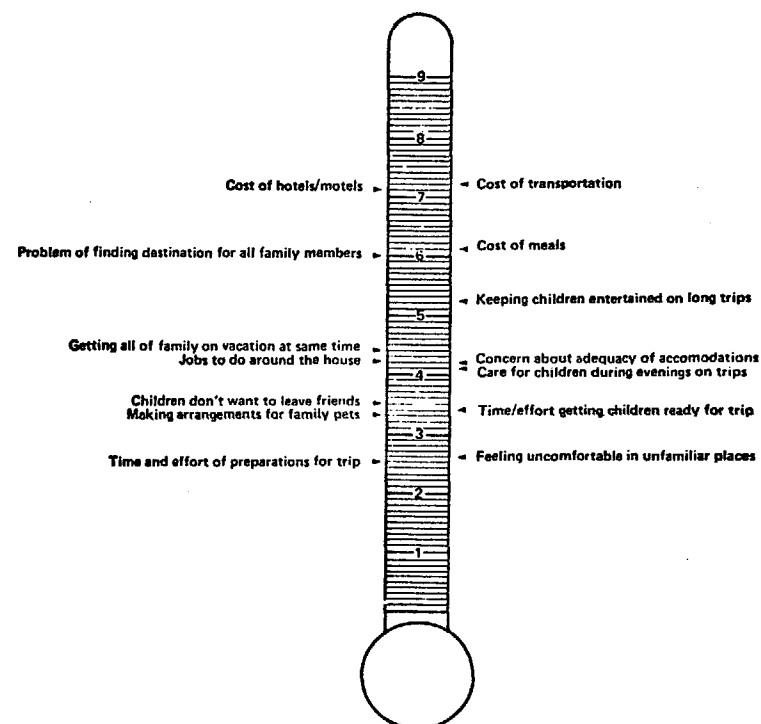
### RATINGS OF THE IMPORTANCE OF FAMILY TRAVEL MOTIVATORS



Source: Behavior Science Corporation, Developing the Family Travel Market, 1972, p. 33.

EXHIBIT III-11

### RATINGS OF THE IMPORTANCE OF DETERRENTS TO FAMILY TRAVEL



Source: Behavior Science Corporation, Developing the Family Travel Market, p. 44.



# Market Analysis

## Part Three

### Beach Recreation Response

If coastal planning purports to sustain or increase South Carolina's travel revenues, therefore, its recreation components must accomplish several objectives:

- (1) emphasize educational experiences as a long-lasting benefit that travel provides for children;
- (2) develop themes relating to bringing families closer together;
- (3) appeal to the need to see and do something different;
- (4) keep costs competitive for the average family; and
- (5) provide planned activities for children in order to satisfy parents' fundamental need for privacy.

Beach recreation responds directly to these motivational requirements.

The South Carolina coast offers abundant educational opportunities about fish, wildlife, and environmental processes. Vacations at the beach -- including swimming, picnicking, and beach walks -- are times for the entire family to play together.

To most Americans, these activities are a change-of-scenery and pace. If costs are kept competitive and children's programs are expanded, the coast can continue to be the State's major tourism attraction. Where vacationers -- in-state and out-of-state alike -- can go and want to go, therefore, are central criteria for a public beach access plan.



## Part Three

### The Gravity Model: Determining Market Demand

To identify the origins and targets of significant potential demand for beach access, existing beach use needs must be quantified and future demand levels projected. This demand analysis, consequently, constitutes the quantitative base from which subjective considerations may be inferred. The numbers derived are estimates based upon the best available data and thus serve as a reference for relative considerations of pressure or underuse.

In this analysis, "demand" is defined as that quantity of use necessary to satisfy all potential participants. Potential demand, a function of intent, may not necessarily be realized. The basic unit of measure, "beach user-occasion", is one instance of participation in ocean beach recreation by one person.

A mathematical construct, the "gravity model", can best relate quantifiable factors, such as population, distance, and available facilities, to project demand for specific beach areas. Important unquantifiable factors

## Market Analysis

can then be considered as an adjunct to the numerical projections.

Implicit in the gravity model is the assumption that a certain population center generates a given number of beach user-occasions which will be distributed over several beach areas. The number of user-occasions from any one population center to be absorbed at a specific beach area is directly proportional to the number of facilities at the beach area, and inversely proportional to the distance between the origin and destination.

This demand analysis methodology requires:

- (1) determination of likely areas of origin of day-users, resident vacation users, and non-resident vacation users;
- (2) determination of the number of user-occasions generated from each of the origin zones for each of these groups; and
- (3) distribution of beach user-occasions by type across the South Carolina beaches which provide opportunities for that type of use.

# Market Analysis

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At the outset, demand is distributed according to this formula without regard to actual capacity. Subsequent capacity analysis and subjective considerations may then be applied. Exhibit III-12 outlines the methodology, criteria, and sources of data.

### Exhibit III-12

#### BEACH ACCESS DEMAND ANALYSIS Day Use

##### Methodology

1. Determine origin zones.
2. For each origin zone determine 1975 population by income class.
3. Determine annual Day Use Beach-user occasions by income class.

##### Method/Criteria

- Population of origin zone should not be more than 1 1/2 hours driving time from beach area.
- Apply household income distribution to population projections for county origin zones.
- Population X average annual per capita user occasions = annual day use person beach days.

##### Sources /13/

- American Automobile Association; South Carolina Road Maps; HLR Descriptive Analysis of South Carolina Beach areas.
- Marketing Economics Institute (MEI), Marketing Economics Guide, 1974-75; S.C. State Demographic Office.
- Midwest Research Institute, Opportunities in the Leisure Industry, Statistical Data Base, 1972, 1974; HLR South Carolina Beach Use Survey; [sic], South Carolina PRT, South Carolina Private Outdoor Recreation Systems Plan, Title 3, Chapter 3.

## Market Analysis

## Exhibit III-12 (con't.)

BEACH ACCESS DEMAND ANALYSISDay Use

<u>Methodology</u>	<u>Method/Criteria</u>	<u>Sources /13/</u>
4. Distribute total demand (total beach-user occasions) across currently available beach destinations.	Proportion of demand from any origin zone for any particular beach is assumed directly proportional to # of public parking spaces within distance of the beach and inversely proportional to the distance between the origin and destination.	HLR Descriptive Analysis of South Carolina Beach Areas; PRT Computer Inventory; Harvard University, <u>Ecologic-Economic Analysis for Regional Development</u> .
5. Discussion of income from which demand at particular beach area is likely to occur.	Subjective - Characteristics of beach area accessibility.	Kiawah Beach Company, <u>Myrtle Beach Market Study</u> ; Sea Pines Company, <u>Resort Guest Tracking Report</u> ; <u>HLR Descriptive Analysis of South Carolina Beach Areas</u> .
	<u>Resident Vacation Use</u>	
1. Determine origin zones.	Assume statewide-use regional planning districts.	
2. For each origin zone determine 1975 population by income class.	Apply household income distribution to population projections by county - perform weighted averages to derive income distribution for each planning district.	Marketing Economics Institute, <u>Marketing Economics Guide 1974-75</u> ; S.C. State Demographer's Office.
3. Determine annual Resident Vacation Use Beach-User Occasions by income class.	Population X average annual per capita vacation beach days = annual vacation use person beach days.  Average annual per capita beach-user occasions by income = (% that take vacation X % of vacations in state X % of beach vacations X average length of stay) + (% that take weekend vacations in state X % at beach X average length of stay.)	Midwest Research Institute, <u>Opportunities in the Leisure Industry, Statistical Data Base, 1972, 1974.</u> ; S.C. PRT, <u>South Carolina Private Outdoor Recreation Systems Plan, Title 3, Chapter 3</u> .

# Market Analysis

## Part Three

### Exhibit III-12 (con't.)

#### Resident Vacation Use

<u>Methodology</u>	<u>Method/Criteria</u>	<u>Sources /13/</u>
4. Distribute total demand across available vacation destinations.	Proportion of demand from any origin zone for any particular beach is assumed directly proportional to # overnight accommodations and inversely proportional to the distance between the origin and destination.	<u>HLR Descriptive Analysis of South Carolina Beach Areas</u> ; PRT Computer Inventory; AAA; Harvard University, <u>Eco-logic-Economic Analysis for Regional Development</u> .
5. Discussion of income cell from which demand at beach area is likely to come.	Subjective characteristics of the area accommodation costs.	Kiawah Beach Company, Myrtle Beach Market Study; Sea Pines Company Resort Guest Tracking Report; <u>HLR Descriptive Analysis of South Carolina Beach Areas</u> .

#### Non-Resident Use Method/Criteria

1. Determine states of origin of out-of-state visitors.		<u>S.C. PRT, South Carolina Private Outdoor Recreation Systems Plan, Title 3, Chapter 3.</u>
2. Project future non-resident beach vacation volume.		<u>S.C. PRT, South Carolina Private Outdoor Recreation Systems Plan, Title 3, Chapter 3.</u>
3. Effects of income, private resort development.	Subjective.	<u>Sea Pines Company, Resort Guest Tracking Report, HLR South Carolina Beach Use Survey</u>

## Part Three

## Market Analysis

### Demand for Day Use

There is a strong correlation between recreational activity participation and income. /14/ Other demographic variables, such as age, education, occupation, and household size, are also linked to activity patterns but play roles secondary to income. Therefore, for each of the South Carolina counties comprising the set of origin zones, income distribution was used to determine the population by income class for each county.

Average annual per capita beach user-occasions by income class are then applied directly to the population base for each income class. Average annual beach user-occasions are determined from data generated by Midwest Research Institute, South Carolina PRT, and this firm's Beach Survey.

As Exhibit III-13 shows, they vary from 3.3 occasions for the "under \$5,000" income class to 12.9 for the "\$25,000 and over" class. These figures are consistent with an overall average of 10.2 occasions per capita for all types of beach areas, fresh water as well as ocean, and an overall coastal average slightly greater than 5.0./15/

### Exhibit III-13

#### DAY USE AVERAGE ANNUAL BEACH USER-OCCASIONS BY INCOME CLASS

<u>Income</u>	<u>Occasions</u>
Under \$5,000	3.3
\$5,000-\$9,999	4.6
\$10,000-\$14,999	6.5
\$15,000-\$24,999	10.2
\$25,000+	12.9

Source: Midwest Research Institute,  
Opportunities in the  
Leisure Industry, 1972;  
and HLR's South Carolina  
Beach Use Survey, August,  
1975.

# Market Analysis

## Part Three

### Projecting Population and Income

1980, 1985, and 1990 population figures are derived from projections for each county. /16/ Changes in income distribution are projected for each of these years by county. /17/ All projections are made in constant dollars (1975 dollars) so that the increase or decrease in each income class over time is real, not a function of inflation.

Day-use demand is assumed to come only from those areas within reasonable driving distance (less than 100 miles) from the coast. Thus, only seventeen counties are considered as origin zones for day use: Horry, Williamsburg, Georgetown, Berkeley, Charleston, Dorchester, Colleton, Beaufort, Hampton, Jasper, Dillon, Marion, Florence, Clarendon, Orangeburg, Bamberg, Alledale. Only demand for ocean beaches is considered.

Several counties (Darlington, Marlboro, Sumter, Calhoun) which marginally meet the distance criteria have not been included as day use origin zones, as most of the day visitor demand generated by these residents would be consumed at nearby fresh-water beaches.

While it is recognized that many out-of-state residents, especially North Carolinians, are day visitors to South Carolina beaches, it was not considered within the scope of this study to quantify that demand. For this reason, day use demand at some destinations is most likely understated. However, such a conservative approach is consistent with that maintained throughout the Study.

To clarify the methodology, calculations pertaining to the first origin zone, Horry County, appear in Exhibit III-14.

# Part Three

# Market Analysis

Exhibit III-14

## METHODOLOGY CALCULATIONS

County	Avg. Annual Per Capita Beach User Occasions
Zone 1    Horry (1975 dollars)	
Household income under 5,000	3.3
5,000-9,999	4.6
10,000-14,999	6.5
15,000-24,999	10.2
25,000 +	12.9

1975 Income Distribution %	1975 Population by Income Class (000)	1975 Beach User Occasions (000)
32.7	26.9	88.8
31.5	26.0	119.6
17.6	14.5	94.3
12.0	9.9	101.0
6.2	5.1	65.8
	82.4	469.5

1980 Income Distribution %	1980 Population by Income Class (000)	1980 Beach User Occasions (000)
28.3	21.5	71.0
29.2	22.2	102.1
16.5	12.5	81.3
16.5	12.5	127.5
9.5	7.2	92.8
	76.0	494.7

1985 Income Distribution %	1985 Population by Income Class (000)	1985 Beach User Occasions (000)
24.4	19.7	65.0
26.7	21.6	99.4
13.6	11.0	71.5
20.5	16.6	169.3
14.8	12.0	154.8
	80.8	560.0

1990 Income Distribution %	1990 Population by Income Class (000)	1990 Beach User Occasions (000)
21.3	18.3	60.4
24.4	21.0	96.6
11.0	9.5	61.8
21.1	18.1	184.6
22.2	19.1	246.4
	86.0	649.8



# Market Analysis

## Part Three

### Applying Income Distribution to the Population Base

For each county, the income distribution (in 1975 dollars) is applied to the population base to determine the approximate population in each income class. The number of persons in each income class is then multiplied by per capita beach-user occasions (ranging from 3.3 for under \$5,000 class to 12.9 for the \$25,000 and over class) to determine beach-user occasions for that projection year.

For each projection year, the income distribution is adjusted to reflect the increase in affluence as projected by the U.S. Department of Commerce, and the population base was adjusted according to South Carolina Demographic Office statistics. Average annual per capita beach-user occasions are held constant and therefore not repeated in the table for each projection year.

The total day use demand (Exhibit III-15) increases from 5.6 million occasions in 1975 to 5.9 million occasions in 1980, to 7.2 million in 1985, to 8.1 million in 1990. Since per capita occasions are assumed to be constant over time, the increase is generated by (1) modest increases in population

and (2) more important, a shift in the income distributions.

For example, in Horry County, the percentage of households earning less than \$5,000 (in constant 1975 dollars) decreases from 32.7% in 1975 to 21.3% in 1990. The \$25,000 and up income category comprises only 6.2% of households in 1975 compared with 22.2% in 1990. This dramatic increase in income accounts for substantial increases in beach user participation. As a higher percentage of the population becomes more affluent, leisure time and recreational activity participation will also increase.

Two rather remarkable findings are illustrated in Exhibit III-15. First, more than 45% of the day-use demand is generated by Berkeley, Charleston, and Dorchester counties (the Charleston SMSA). Second, although some changes in distribution occur throughout the projection years, neither the magnitude of demand from the Charleston area nor the percentage of the total it represents diminishes over time. Thus, the Charleston beach areas will increasingly become a focal point for day visitors.

# Part Three

# Market Analysis

Exhibit III-15

## SOUTH CAROLINA DAY USE BEACH USER OCCASIONS 1975, 1980, 1985, 1990

### Day-Use Origin Zones

County	1975 (000)	% of Total	1980 (000)	% of Total	1985 (000)	% of Total	1990 (000)	% of Total
1. Horry	469.5	8.3	494.7	8.4	560.0	7.8	649.8	8.0
2. Williamsburg	175.3	3.1	205.8	3.5	236.3	3.3	272.4	3.4
3. Georgetown	207.8	3.7	220.8	3.7	259.7	3.6	303.1	3.8
4. Berkeley	422.5	7.5	535.3	9.1	650.8	9.1	780.9	9.7
5. Charleston	1,866.6	33.1	2,038.4	34.3	2,314.3	32.3	2,598.9	32.2
6. Dorchester	258.2	4.6	266.6	4.5	358.7	5.0	390.9	4.8
7. Colleton	157.7	2.8	171.9	2.9	191.7	2.7	212.0	2.6
8. Beaufort	320.9	5.7	345.1	5.8	386.3	5.4	428.7	5.3
9. Hampton	85.1	1.5	84.8	1.4	97.5	1.4	107.9	1.3
10. Jasper	70.0	1.2	72.2	1.2	84.3	1.2	95.4	1.2
11. Dillion	159.2	2.8	183.7	3.1	224.8	3.1	238.5	3.0
12. Marion	174.1	3.1	191.2	3.2	223.3	3.1	262.0	3.2
13. Florence	597.8	10.6	665.3	11.3	766.4	10.7	873.7	10.8
14. Clarendon	125.4	2.2	125.9	2.1	144.3	2.0	162.2	2.0
15. Orangeburg	409.8	7.3	432.9	7.3	493.9	6.9	507.6	6.3
16. Bamberg	84.7	1.5	98.0	1.7	106.8	1.5	120.3	1.5
17. Allendale	51.4	.9	57.5	1.0	67.5	.9	73.6	.9
TOTALS	5,636.0	100.0	5,903.0	100.0	7,166.6	100.0	8,077.9	100.0

Source: Hartzog, Lader and Richards.

# Market Analysis

## Part Three

### Distributing Day-Use Demand

To distribute the day-use demand displayed in Exhibit III-15 across South Carolina, the coast is divided into major day-use beaches. Study of the coastline's natural features, shoreline interruption, and public and private ownership patterns results in thirteen principal day-use beach destinations:

- North Myrtle Beach
- Atlantic Beach
- Myrtle Beach State Park
- Myrtle Beach
- Garden City - Surfside
- Huntington Beach State Park
- Isle of Palms
- Sullivans Island
- Folly Beach
- Kiawah Island
- Edisto Island
- Hunting Island State Park
- Hilton Head Island

The distance between these beach zones and population centers is determined by measuring the distance between points on a map of the State primary highway system. Since virtually all South Carolina day visitors drive family automobiles to the beach, this method is valid. /18/

The final quantifiable factor is adequacy of beach facilities. Although arguments can be made concerning the importance of comfort stations or recreational facilities, this firm's experience dictates that the availability of parking is the most important extrinsic determinant of a beach area's attractiveness. If the day visitor cannot legally park nearby, then his access to the beach is theoretical.

Estimated public parking available at each of the beach zones is shown in Exhibit III-16. Parking spaces included in these estimates meet the criteria of being legal public parking spaces, such as on-street or public lots. Parking provided exclusively for the use of clientele of retail stores, hotels, and motels is specifically excluded because day-use beachgoers, though possibly patronizing such establishments on a brief basis, would not be allowed to use these parking facilities for all day parking.

For the population center of each origin zone, a parking-to-distance ratio is calculated for the beach zone, and the sum of these ratios is computed. (See Exhibit III-16) The proportion of an origin zone's beach user-occasions

## Part Three

distributed at a particular beach is expressed as the ratio of that beach's parking-to-distance ratio to the sum of all the ratios for that origin zone. For example, the distance from the population center of Horry County to North Myrtle Beach is approximately 30 miles, and North Myrtle Beach has an estimated 375 public parking spaces. Thus, the parking-to-distance ratio for Horry County to North Myrtle Beach is  $375 \div 30$  or 12.5. Repeating this process for each of the destination beaches and adding the ratios, the sum is 75.5. The proportion of total Horry County day-use resident occasions absorbed at North Myrtle Beach, therefore, is  $12.5 \div 75.5$  or 10.8%. (See Exhibit III-17)

Exhibit III-18 shows the numerical distribution of day visitor demand. Although potential day-use demand is greatest at Sullivan's Island, Isle of Palms, and Myrtle Beach, several other factors should be considered simultaneously.

First, the Beach Use Survey documents that Sullivan's Island and Isle of Palms are almost exclusively day visitor beaches, while Myrtle Beach experiences only a small proportion of day visitor traffic. Day visitors have access

## Market Analysis

problems at both Isle of Palms and Sullivan's Island, and there is considerable resident resentment of transient-use overcrowding. These conditions cause a portion of the potential demand for each of these beach areas to be diverted to Folly Island and Edisto Island.

Also, the tremendous demand generated from Charleston County magnifies this problem as Charleston broadens its economic base and as the interstate highway connecting Columbia and Charlotte to Charleston is completed.

# Market Analysis

## Part Three

Exhibit III-16  
DAY USE DESTINATION RATIOS  
(# parking spaces/distance)

Destination Beaches	Estimated Existing Public Parking Spaces	Horry	Williamsburg	Georgetown	Berkeley	Charleston	Dorchester	Colleton	Beaufort	Hampton	Jasper	Dillon	Marion	Florence	Clarendon	Orangeburg	Bamberg	Allendale
N. Myrtle Beach	375	12.5	-	6.8	-	-	-	-	-	-	-	5.8	5.8	4.4	-	-	-	-
Atlantic	50	1.7	-	1.0	-	-	-	-	-	-	-	.7	.8	.6	-	-	-	-
Myrtle Beach	950	63.3	12.7	27.1	11.2	10.0	-	-	-	-	-	12.7	21.1	14.6	-	-	-	-
Myrtle Beach State Park	400	20.0	5.3	13.3	5.0	4.4	-	-	-	-	-	5.0	8.0	5.7	-	-	-	-
Garden City - Surfside	100	5.0	1.4	3.3	1.3	1.2	-	-	-	-	-	1.3	1.8	1.3	-	-	-	-
Huntington Beach State Park	325	13.0	5.0	13.0	4.3	3.8	-	-	-	-	-	3.8	5.4	4.1	-	-	-	-
Isle of Palms	920	-	-	14.2	20.4	61.3	14.2	15.3	10.8	-	-	-	-	-	10.2	10.2	9.6	-
Sullivans Island	1,000	-	-	17.0	25.5	102.0	17.0	17.0	12.8	-	-	-	-	-	12.0	12.0	11.3	-
Folly Island	450	-	-	6.4	10.0	45.0	7.5	7.5	5.6	-	-	-	-	-	5.3	5.3	5.0	-
Kiawah Island	150	-	-	1.9	3.0	7.5	2.1	2.7	2.0	1.6	1.9	-	-	-	-	1.6	1.6	-
Edisto Island	1,000	-	-	-	12.5	20.0	14.3	20.0	14.3	13.3	16.7	-	-	-	-	10.5	11.1	11.1
Hunting Island State Park	600	-	-	-	-	4.0	5.0	6.7	20.0	6.2	7.3	-	-	-	-	-	4.0	5.0
Hilton Head Island	100	-	-	-	-	-	1.0	1.3	2.9	1.7	2.5	-	-	-	-	-	1.1	1.1
Total		<u>115.5</u>	<u>24.4</u>	<u>104.0</u>	<u>93.2</u>	<u>259.2</u>	<u>61.1</u>	<u>70.5</u>	<u>68.4</u>	<u>22.8</u>	<u>28.4</u>	<u>29.3</u>	<u>42.9</u>	<u>30.7</u>	<u>27.5</u>	<u>39.6</u>	<u>43.7</u>	<u>17.2</u>

Source: Hartzog, Lader & Richards.

# Part Three

# Market Analysis

Exhibit III-17

## DAY USE DESTINATION RATIOS

(Percentage of day use beach user occasions from each origin to each destination)

Destination Beaches	Horry	Williamsburg	Georgetown	Berkeley	Charleston	Dorchester	Colleton	Beaufort	Hampton	Jasper	Dillon	Marion	Florence	Clarendon	Orangeburg	Bamberg	Allendale
N. Myrtle Beach	10.8	-	6.5	-	-	-	-	-	-	-	19.8	13.5	14.3	-	-	-	-
Atlantic	1.5	-	1.0	-	-	-	-	-	-	-	2.4	1.9	2.0	-	-	-	-
Myrtle Beach	54.8	52.0	26.1	12.0	3.9	-	-	-	-	-	43.3	49.2	47.6	-	-	-	-
Myrtle Beach State Park	17.3	21.7	12.8	5.4	1.7	-	-	-	-	-	17.1	18.6	18.6	-	-	-	-
Garden City - Surfside	4.3	5.8	3.2	1.4	.5	-	-	-	-	-	4.4	4.2	4.2	-	-	-	-
Huntington Beach State Park	11.3	20.5	12.5	4.6	1.5	-	-	-	-	-	13.0	12.6	13.3	-	-	-	-
Isle of Palms	-	-	13.7	21.9	23.6	23.2	21.7	15.8	-	-	-	-	-	37.1	25.8	22.0	-
Sullivans Island	-	-	16.3	27.4	39.4	27.8	24.1	18.7	-	-	-	-	-	43.6	30.3	25.9	-
Folly Island	-	-	6.2	10.7	17.4	12.3	10.6	8.3	-	-	-	-	-	19.3	13.4	11.4	-
Kiawah Island	-	-	1.7	3.2	2.9	3.5	3.9	2.9	7.0	6.7	-	-	-	-	4.0	3.7	-
Edisto Island	-	-	-	13.4	7.7	23.4	28.4	20.9	58.3	58.8	-	-	-	-	26.5	25.4	64.5
Hunting Island State Park	-	-	-	-	1.4	8.2	9.5	29.2	27.2	25.7	-	-	-	-	-	9.2	29.1
Hilton Head Island	-	-	-	-	-	1.6	1.8	4.2	7.5	8.8	-	-	-	-	-	2.4	6.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Hartzog, Lader & Richards.

# Market Analysis

## Part Three

Matrices displaying similar projections for 1980, 1985, and 1990 appear in Exhibits III-18, III-19, III-20, and III-21. For the purposes of this day-use demand analysis, distribution proportions are based on current parking capacities and distances. Parking capacity may drastically change during the next fifteen years, but projections would be impractical. Moreover, it is the relative capacities which are important to this analysis.

Review of Exhibits III-18, III-19, III-20, and III-21 establishes most clearly that the demand generated from the Charleston area for Charleston area beaches increases for each projection period. Increased facilities, particularly more parking, at any of the beach areas will re-distribute demand, but will not diminish the magnitude of demand. For example, the tremendous potential demand shown for Isle of Palms and Sullivans Island may perhaps be diverted to Folly Beach or Kiawah Island by the addition of large quantities of public parking at those beaches, but the total demand will not be altered.

# Part Three

# Market Analysis

Exhibit III-18

## DISTRIBUTION OF TOTAL DAY USE BEACH USER OCCASIONS, 1975 (thousands of beach user occasions)

Destination Beaches	Horry	Williamsburg	Georgetown	Berkeley	Charleston	Dorchester	Colleton	Beaufort	Hampton	Jasper	Dillon	Marion	Florence	Clarendon	Orangeburg	Bamberg	Allendale	Total (000)
N. Myrtle Beach	50.7	-	13.5	-	-	-	-	-	-	-	31.5	23.5	85.5	-	-	-	-	204.7
Atlantic	7.0	-	2.1	-	-	-	-	-	-	-	3.8	3.3	12.0	-	-	-	-	28.2
Myrtle Beach	257.3	91.2	54.2	50.7	72.8	-	-	-	-	-	68.9	85.7	284.5	-	-	-	-	965.3
Myrtle Beach State Park	81.2	38.0	26.6	22.8	31.7	-	-	-	-	-	27.2	32.4	111.2	-	-	-	-	371.1
Garden City - Surfside	20.2	10.2	6.7	5.9	9.3	-	-	-	-	-	7.1	7.3	25.1	-	-	-	-	91.8
Huntington Beach State Park	53.1	35.9	26.0	19.4	28.0	-	-	-	-	-	20.7	21.9	79.5	-	-	-	-	284.5
Sullivan's Island	-	-	33.9	115.8	735.4	71.8	38.0	60.0	-	-	-	-	-	54.7	124.2	21.9	-	877.1
Isle of Palms	-	-	28.5	92.5	440.5	59.9	34.2	50.7	-	-	-	-	-	46.5	105.7	18.6	-	1,255.7
Folly Island	-	-	12.9	45.3	324.8	31.8	16.7	26.6	-	-	-	-	-	24.2	54.9	9.7	-	546.9
Kiawah Island	-	-	3.4	13.5	54.1	9.0	6.2	9.3	6.0	4.7	-	-	-	-	16.4	3.1	-	125.7
Edisto Island	-	-	-	56.6	143.7	60.4	44.8	67.1	49.6	41.2	-	-	-	-	108.6	21.5	33.1	626.6
Hunting Island State Park	-	-	-	-	26.3	21.2	15.0	93.7	23.1	18.0	-	-	-	-	-	7.8	15.0	220.1
Hilton Head Island	-	-	-	-	-	4.1	2.8	13.5	6.4	6.1	-	-	-	-	-	2.1	3.3	38.3
Total	<u>469.5</u>	<u>175.3</u>	<u>207.8</u>	<u>422.5</u>	<u>1,866.6</u>	<u>258.2</u>	<u>157.7</u>	<u>320.9</u>	<u>85.1</u>	<u>70.0</u>	<u>159.2</u>	<u>174.1</u>	<u>597.8</u>	<u>125.4</u>	<u>409.8</u>	<u>84.7</u>	<u>51.4</u>	<u>5,636.0</u>

Source: Hartzog, Lader & Richards.



# Market Analysis

## Part Three

Exhibit III-19  
DISTRIBUTION OF TOTAL DAY USE BEACH USER OCCASIONS, 1980  
(thousands of beach user occasions)

Destination Beaches	Horry	Williamsburg	Georgetown	Berkeley	Charleston	Dorchester	Colleton	Beaufort	Hampton	Jasper	Dillon	Marion	Florence	Clarendon	Orangeburg	Bamberg	Allendale	Total (000)
N. Myrtle Beach	51.2	-	14.4	-	-	-	-	-	-	-	31.5	23.5	95.1	-	-	-	-	215.7
Atlantic	7.1	-	2.2	-	-	-	-	-	-	-	3.8	3.3	13.3	-	-	-	-	29.7
Myrtle Beach	260.0	107.0	57.6	54.2	72.8	-	-	-	-	-	68.9	85.7	316.7	-	-	-	-	1,032.9
Myrtle Beach State Park	82.1	44.7	28.3	28.9	31.7	-	-	-	-	-	27.2	32.4	123.7	-	-	-	-	399.0
Garden City - Surfside	20.4	11.9	7.1	7.5	9.3	-	-	-	-	-	7.1	7.3	27.9	-	-	-	-	98.5
Huntington Beach State Park	53.6	42.2	27.6	24.6	28.0	-	-	-	-	-	20.7	21.9	88.4	-	-	-	-	307.0
Isle of Palms	-	-	30.3	117.2	440.5	59.9	34.2	50.7	-	-	-	-	-	46.7	111.7	20.5	-	911.7
Sullivan's Island	-	-	36.0	146.7	735.4	71.8	38.0	60.0	-	-	-	-	-	54.9	131.2	24.1	-	1,298.1
Folly Island	-	-	13.6	57.3	324.8	31.8	16.7	26.6	-	-	-	-	-	24.3	58.0	10.6	-	563.7
Kiawah Island	-	-	3.7	17.2	54.1	9.0	6.2	9.3	6.0	4.7	-	-	-	-	17.3	3.4	-	130.9
Edisto Island	-	-	-	71.7	143.8	60.4	44.8	67.1	49.6	41.2	-	-	-	-	114.7	23.6	37.1	654.0
Hunting Island State Park	-	-	-	-	26.2	21.2	15.0	93.7	23.1	18.0	-	-	-	-	-	8.6	16.7	222.5
Hilton Head Island	-	-	-	-	-	4.1	2.8	13.5	6.4	6.1	-	-	-	-	-	2.2	3.7	38.8
Total	<u>474.7</u>	<u>205.8</u>	<u>220.8</u>	<u>535.3</u>	<u>1,866.6</u>	<u>258.2</u>	<u>157.7</u>	<u>320.9</u>	<u>85.1</u>	<u>70.0</u>	<u>159.2</u>	<u>174.1</u>	<u>665.3</u>	<u>125.9</u>	<u>432.9</u>	<u>93.0</u>	<u>57.5</u>	<u>5,903.0</u>

Source: Hartzog, Lader & Richards.

# Part Three

# Market Analysis

Exhibit III-20  
DISTRIBUTION OF TOTAL DAY USE BEACH USER OCCASIONS, 1985  
(thousands of beach user occasions)

Destination Beaches	Horry	Williamsburg	Georgetown	Berkeley	Charleston	Dorchester	Colleton	Beaufort	Hampton	Jasper	Dillon	Marion	Florence	Clarendon	Orangeburg	Bamberg	Allendale	Total (000)
N. Myrtle Beach	60.5	-	16.9	-	-	-	-	-	-	-	44.5	30.1	109.6	-	-	-	-	261.6
Atlantic	8.4	-	2.6	-	-	-	-	-	-	-	5.4	4.2	15.3	-	-	-	-	35.9
Myrtle Beach	306.8	122.9	67.8	78.1	90.3	-	-	-	-	-	97.3	109.9	364.8	-	-	-	-	1,237.9
Myrtle Beach State Park	96.9	51.3	33.2	35.3	39.3	-	-	-	-	-	38.4	41.5	142.6	-	-	-	-	478.5
Garden City - Surfside	24.1	13.7	8.3	9.1	11.6	-	-	-	-	-	9.9	9.4	32.2	-	-	-	-	118.3
Huntington Beach State Park	63.3	48.4	32.5	29.9	34.7	-	-	-	-	-	29.3	28.2	101.9	-	-	-	-	368.2
Isle of Palms	-	-	35.6	142.5	546.2	83.3	41.6	56.7	-	-	-	-	-	53.5	127.4	23.5	-	1,110.3
Sullivans Island	-	-	42.3	178.3	911.8	99.7	46.2	67.1	-	-	-	-	-	62.9	149.7	27.7	-	1,585.7
Folly Island	-	-	16.1	69.6	402.7	44.1	20.3	29.8	-	-	-	-	-	27.9	66.2	12.2	-	688.9
Kiawah Island	-	-	4.4	20.8	67.1	12.6	7.5	10.4	6.8	5.6	-	-	-	-	19.8	4.0	-	159.0
Edisto Island	-	-	-	87.2	178.2	83.9	54.4	75.0	56.8	49.6	-	-	-	-	130.8	27.1	43.5	786.5
Hunting Island State Park	-	-	-	-	32.4	29.4	18.2	104.7	26.5	21.7	-	-	-	-	-	9.8	19.6	262.3
Hilton Head Island	-	-	-	-	-	5.7	3.5	15.0	7.4	7.4	-	-	-	-	-	2.5	4.4	45.9
Total	<u>560.0</u>	<u>236.3</u>	<u>259.7</u>	<u>650.8</u>	<u>2,314.3</u>	<u>358.7</u>	<u>191.7</u>	<u>358.7</u>	<u>97.5</u>	<u>84.3</u>	<u>224.8</u>	<u>223.3</u>	<u>766.4</u>	<u>144.3</u>	<u>493.9</u>	<u>106.8</u>	<u>67.5</u>	<u>7,139.0</u>

Source: Hartzog, Lader & Richards.

# Market Analysis

## Part Three

Exhibit III-21  
DISTRIBUTION OF TOTAL DAY USE BEACH USER OCCASIONS, 1990  
(thousands of beach user occasions)

Destination Beaches	Horry	Williamsburg	Georgetown	Berkeley	Charleston	Dorchester	Colleton	Beaufort	Hampton	Jasper	Dillon	Marion	Florence	Clarendon	Orangeburg	Bamberg	Allendale	Total (000)
N. Myrtle Beach	70.2	-	19.7	-	-	-	-	-	-	-	47.2	35.4	124.9	-	-	-	-	297.4
Atlantic	9.7	-	3.0	-	-	-	-	-	-	-	5.7	5.0	17.5	-	-	-	-	40.9
Myrtle Beach	356.1	141.6	79.1	93.7	101.4	-	-	-	-	-	103.3	128.9	415.9	-	-	-	-	1,420.0
Myrtle Beach State Park	112.4	59.2	38.8	42.2	44.2	-	-	-	-	-	40.8	48.7	162.5	-	-	-	-	548.8
Garden City - Surfside	27.9	15.8	9.7	10.9	13.0	-	-	-	-	-	10.5	11.0	36.7	-	-	-	-	135.5
Huntington Beach State Park	73.5	55.8	37.9	35.9	39.0	-	-	-	-	-	31.0	33.0	116.2	-	-	-	-	422.3
Isle of Palms	-	-	41.5	171.0	613.3	90.7	46.0	67.7	-	-	-	-	-	60.2	131.0	26.5	-	1,247.9
Sullivans Island	-	-	49.4	214.0	1,024.0	108.5	51.1	80.2	-	-	-	-	-	70.7	153.8	31.2	-	1,782.9
Folly Island	-	-	18.7	83.6	452.2	48.1	22.5	35.6	-	-	-	-	-	31.3	68.0	13.7	-	773.7
Kiawah Island	-	-	5.3	25.0	75.4	13.7	8.3	12.4	7.6	6.4	-	-	-	-	20.3	4.5	-	178.9
Edisto Island	-	-	-	104.6	200.1	91.5	60.2	89.6	62.9	56.1	-	-	-	-	134.5	30.4	47.5	877.4
Hunting Island State Park	-	-	-	-	36.3	32.1	20.1	125.2	29.3	24.5	-	-	-	-	-	11.1	21.4	300.0
Hilton Head Island	-	-	-	-	-	6.3	3.8	18.0	8.1	8.4	-	-	-	-	-	2.9	4.7	52.2
Total	649.8	272.4	303.1	780.9	2,598.9	390.9	212.0	428.7	107.9	95.4	238.5	262.0	873.7	162.2	507.6	120.3	73.6	8,077.9

Source: Hartzog, Lader & Richards.

## Part Three

# Market Analysis

### Demand for Resident Vacation/ Weekend Use

Resident vacation and weekend beach use include all user-occasions generated by residents who spend at least one night in the beach area (i.e., occasions occurring on weekend or vacation trips). The methodology used to determine resident vacation demand precisely parallels that for day-use demand. Although the procedure is the same, definitions of variables are changed:

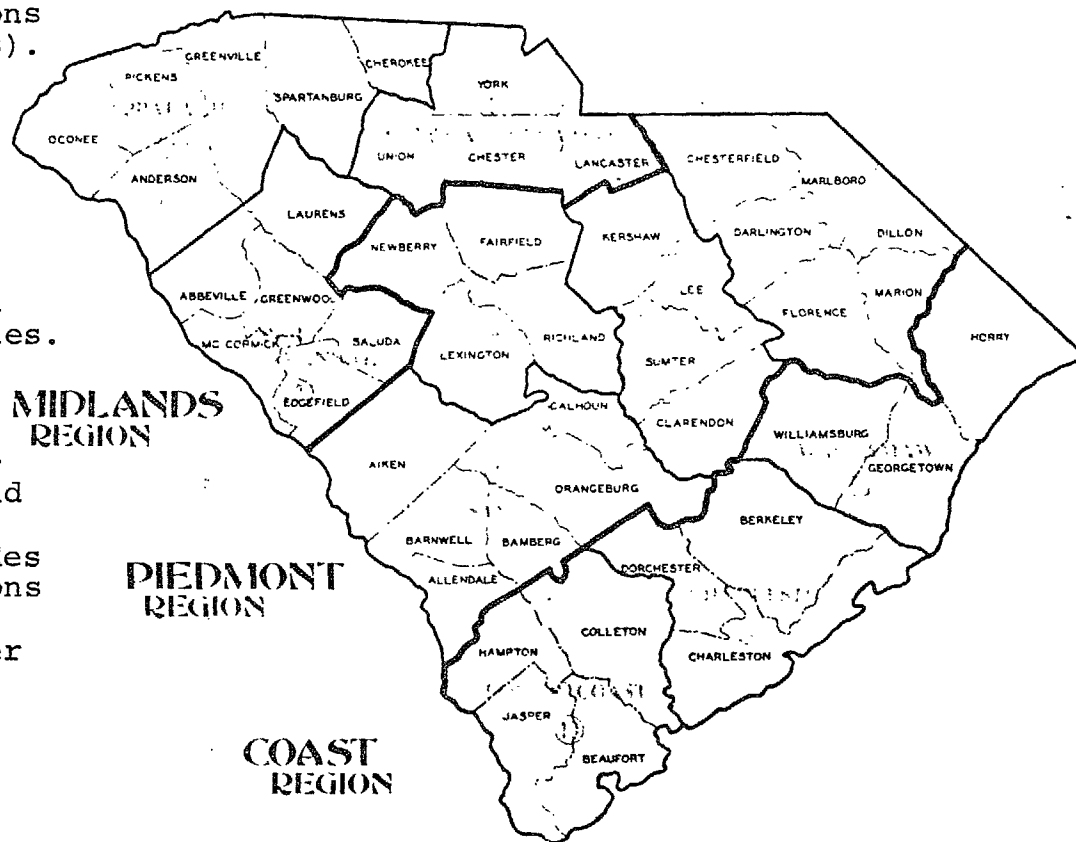
(1) The origin zones are the ten regional planning districts which include all South Carolina counties. (See Exhibit III-22)

(2) Average annual per capita vacation/weekend beach user-occasions are calculated using PRT and Midwest Research Institute data, which for each income cell provides the percentage of instate vacations at an identified South Carolina beach location, the average number of beach user-occasions utilized in this analysis are shown in Exhibit III-23.

EXHIBIT III-22

### SCORP RECREATION PLANNING AREAS

#### Three Regions and Ten Planning Districts



# Market Analysis

## Part Three

### Exhibit III-23

#### AVERAGE ANNUAL SOUTH CAROLINA RESIDENT VACATION USE BEACH USER-OCCASIONS BY INCOME CLASS

<u>Income</u>	<u>Occasions Per Capita</u>
Under \$5,000	.5
\$5,000-\$9,999	.8
\$10,000-\$14,999	.9
\$15,000-\$24,999	1.0
\$25,000+	1.1

Source: Midwest Research Institute,  
Opportunities in the Leisure  
Industry, Statistical Summary,  
1972;

South Carolina PRT, South  
Carolina Private Outdoor  
Recreation Systems Plan, p.3-70

HLR Beach Use Survey.

- (3) Nine vacation and weekend destination areas are designated:

Grand Strand /9/  
Isle of Palms  
Sullivans Island  
Folly Beach  
Kiawah Island  
Edisto Island  
Hunting Island State Park  
Fripp Island  
Hilton Head Island

- (4) User-occasions are distributed, using the number of overnight accommodations as the key criteria instead of parking spaces. Overnight accommodations include hotel rooms, cottages, rental homes, condominiums and campsites.

Exhibit III-24 displays demand projections for resident vacation beach user occasions. As for day visitor occasions, the increase in vacation beach user occasions for each time increment is primarily due to population shifts to higher income groups (in 1975 constant dollars). These increases are especially important in projecting vacation demand because of vacation frequency and trip characteristics differ greatly by income class. /20/ The greatest proportion of vacation demand is generated

Exhibit III-24

S.C. RESIDENT VACATION BEACH USER OCCASIONS  
1975, 1980, 1985, 1990

<u>South Carolina Regional Planning District</u>	<u>1975 (000)</u>	<u>% of Total</u>	<u>1980 (000)</u>	<u>% of Total</u>	<u>1985 (000)</u>	<u>% of Total</u>	<u>1990 (000)</u>	<u>% of Total</u>
Appalachia	581.5	35.6	658.5	28.3	735.8	27.7	818.7	30.8
Upper Savannah	128.3	7.8	142.1	6.1	157.3	5.9	173.6	6.5
Central Piedmont	153.8	9.4	169.3	7.3	184.6	6.9	210.5	7.9
Midlands	347.0	21.2	384.0	16.5	428.7	16.1	470.7	17.7
Lower Savannah	178.6	10.9	188.3	8.1	203.5	7.7	220.0	8.3
Santee Wateree	121.7	7.4	126.7	5.4	135.3	5.1	143.5	5.4
Pee Dee	202.0	12.4	214.3	9.2	234.4	8.8	255.0	9.6
Waccamaw	115.5	7.1	115.4	5.0	127.2	4.8	139.9	5.3
Charleston	304.0	18.6	336.4	14.4	360.1	13.6	395.4	14.9
Lower Coast	83.7	5.1	85.1	3.7	90.3	3.4	95.2	3.6
Totals	<u>1,634.6</u>	<u>100.0</u>	<u>2,330.1</u>	<u>100.0</u>	<u>2,657.2</u>	<u>100.0</u>	<u>2,922.5</u>	<u>100.0</u>

Source: HLR.

# Market Analysis

## Part Three

from the Appalachia, Midlands, and Charleston districts. These districts have the State's largest population concentrations.

As previously explained, the gravity model was used to distribute this potential resident vacation demand across the various destination areas. Appendices of this Report show the driving distances, accommodation estimates, and destination ratios determined for vacation use. Application of these ratios completes the distribution of resident vacation beach user occasions.

Exhibits III-25, III-26, III-27, and III-28 display the projected vacation beach use demand for each destination from 1975 to 1990. As might be expected, a substantial proportion (88%) of the demand will be absorbed in the Grand Strand area. Second highest demand is projected for Hilton Head Island. Substantial demand is also shown for Folly Beach and Edisto Island.

Although Myrtle Beach/Grand Strand provides vacation accommodations to suit all tastes, budgets, and motivations, Hilton Head Island is a relatively expensive resort area. Demographic characteristics of Hilton

Head Island visitors include high median incomes (\$35,000) and median age of household head (40 years). / 21/ Thus, the demand projections shown for Hilton Head Island will almost exclusively be absorbed by the upper income class.

It is assumed that the number of accommodations will remain constant over the fifteen-year projection period. For developed beach areas, the relative proportion will likely not change drastically, but there are possibilities of capacity expansion at several vacation destination areas.

Kiawah Island will probably witness the largest increase, but Hilton Head Island, Fripp Island, and Isle of Palms also have considerable expansion potential. Such expansions would affect resident vacation patterns, but the greatest effect, if present development strategies are followed, would be to greatly increase the number of non-resident visitors to these areas.

Total resident vacation beach user occasions are estimated at 2.2 million in 1975, 2.3 million in 1980, 2.7 million in 1985, and 2.9 million in 1990, a growth rate of 4.5% from 1975 to

# Part Three

# Market Analysis

## Exhibit III-25

### DISTRIBUTION OF TOTAL RESIDENT VACATION BEACH USER OCCASIONS, 1975 (thousands of beach user occasions)

<u>Destination Beaches</u>	<u>Appalachia</u>	<u>Upper Savannah</u>	<u>Central Piedmont</u>	<u>Midlands</u>	<u>Lower Savannah</u>	<u>Santee Waterlee</u>	<u>Pee Dee</u>	<u>Waccamaw</u>	<u>Charleston</u>	<u>Lower Coast</u>	<u>Total</u>	<u>%</u>
Grand Strand	519.9	113.2	140.1	309.8	153.7	111.3	191.5	113.9	237.4	53.4	1,944.2	87.7
Isle of Palms	2.3	.6	.6	1.7	1.1	.5	.4	.1	5.5	.7	13.5	.6
Sullivan's Island	2.3	.6	.6	1.4	.9	.4	.4	.1	5.2	.6	12.5	.6
Folly Beach	12.2	3.0	2.8	8.0	5.0	2.2	2.4	.3	26.7	3.2	65.8	3.0
Kiawah Island	2.3	.5	.5	1.4	.9	.4	.4	.1	4.5	.5	11.5	.5
Edisto Island	8.7	2.2	2.0	5.6	3.4	1.6	1.6	.2	8.2	2.3	35.8	1.6
Hunting Island State Park	2.4	.6	.6	1.7	1.1	.4	.4	.1	1.2	2.3	10.8	.5
Fripp Island	2.9	.9	.6	2.1	1.4	.5	.4	.2	1.5	2.9	13.4	.6
Hilton Head Island	<u>28.5</u>	<u>6.7</u>	<u>6.0</u>	<u>15.3</u>	<u>11.1</u>	<u>4.4</u>	<u>4.5</u>	<u>.5</u>	<u>13.8</u>	<u>17.8</u>	<u>108.6</u>	<u>4.9</u>
Total	581.5	128.3	153.8	347.0	178.6	121.7	202.0	115.5	304.0	83.7	2,216.1	

Source: Hartzog, Lader & Richards.



# Market Analysis

## Part Three

### Exhibit III-26

DISTRIBUTION OF TOTAL RESIDENT VACATION BEACH USER OCCASIONS, 1980  
(thousands of beach user occasions)

<u>Destination Areas</u>	<u>Appalachia</u>	<u>Upper Savannah</u>	<u>Central Piedmont</u>	<u>Midlands</u>	<u>Lower Savannah</u>	<u>Santee Wateree</u>	<u>Pee Dee</u>	<u>Waccamaw</u>	<u>Charleston</u>	<u>Lower Coast</u>	<u>Total</u>
Grand Strand	588.7	125.3	154.2	342.9	162.1	116.0	117.8	113.8	262.7	54.3	2,037.8
Isle of Palms	2.6	.7	.7	1.9	1.1	.5	.2	.1	6.1	.7	14.6
Sullivan's Island	2.6	.7	.7	1.5	.9	.4	.2	.1	5.7	.6	13.4
Folly Beach	13.8	3.3	3.0	8.8	5.3	2.3	1.6	.3	29.6	3.2	71.2
Kiawah Island	2.6	.6	.5	1.5	.9	.4	.2	.1	5.0	.5	12.3
Edisto Island	9.9	2.4	2.2	6.3	3.6	1.6	1.0	.2	9.1	2.3	38.6
Hunting Island State Park	2.6	.7	.7	1.9	1.1	.4	.2	.1	1.3	2.4	11.4
Fripp Island	3.3	1.0	.7	2.3	1.5	.5	.2	.1	1.7	3.0	14.3
Milton Head Island	<u>32.4</u>	<u>7.4</u>	<u>6.6</u>	<u>16.9</u>	<u>11.8</u>	<u>4.6</u>	<u>2.9</u>	<u>.6</u>	<u>15.2</u>	<u>18.1</u>	<u>116.5</u>
Total	658.5	142.1	169.3	384.0	188.3	126.7	124.3	115.4	336.4	85.1	2,330.1

Source: Hartzog, Lader & Richards.

## Part Three

# Market Analysis

### Exhibit III-27

DISTRIBUTION OF TOTAL RESIDENT VACATION BEACH USER OCCASIONS, 1985  
(thousands of beach user occasions)

<u>Destination Areas</u>	Appalachia	Upper Savannah	Central Piedmont	Midlands	Lower Savannah	Santee Waterlee	Pee Dee	Waccanaw	Charleston	Lower Coast	<u>Total</u>
Grand Strand	657.8	138.7	168.2	382.8	175.2	123.9	222.0	125.4	281.2	57.6	2,332.8
Isle of Palms	2.9	.8	.7	2.1	1.2	.5	.5	.1	6.5	.7	16.0
Sullivan's Island	2.9	.8	.7	1.7	1.0	.4	.5	.1	6.1	.6	14.8
Folly Beach	15.5	3.6	3.3	9.9	5.7	2.5	2.8	.4	31.7	3.4	78.8
Kiawah Island	2.9	.6	.6	1.7	1.1	.4	.5	.1	5.4	.5	13.8
Edisto Island	11.0	2.7	2.4	6.9	3.9	1.8	1.9	.3	9.7	2.4	43.0
Hunting Island State Park	2.9	.8	.7	2.1	1.2	.4	.5	.1	1.4	2.5	12.6
Fripp Island	3.7	1.1	.7	2.6	1.6	.5	.5	.1	1.8	3.3	15.9
Hilton Head Island	<u>36.2</u>	<u>8.2</u>	<u>7.3</u>	<u>18.9</u>	<u>12.6</u>	<u>4.9</u>	<u>5.2</u>	<u>.6</u>	<u>16.3</u>	<u>19.3</u>	<u>129.5</u>
Total	735.3	157.3	184.6	428.7	203.5	135.3	234.4	127.2	360.1	90.3	2,657.2

Source: Hartzog, Lader & Richards.

# Market Analysis

## Part Three

### Exhibit III-28

#### DISTRIBUTION OF TOTAL RESIDENT VACATION BEACH USER OCCASIONS, 1990 (thousands of beach user occasions)

<u>Destination Areas</u>	Appalachia	Upper Savannah	Central Piedmont	Midlands	Lower Savannah	Santee Wateres	Pee Dee	Waccamaw	Charleston	Lower Coast	Total
Grand Strand	731.8	153.0	191.8	420.3	189.4	131.4	241.7	137.9	308.8	60.6	2,566.7
Isle of Palms	3.3	.9	.8	2.4	1.3	.6	.5	.1	7.1	.8	17.8
Sullivan's Island	3.3	.9	.8	1.9	1.1	.4	.5	.1	6.7	.7	16.4
Folly Beach	17.2	4.0	3.8	10.8	6.2	2.6	3.1	.4	34.8	3.6	86.5
Kiawah Island	3.3	.7	.6	1.9	1.1	.4	.5	.1	5.9	.6	15.1
Edisto Island	12.3	3.0	2.7	7.5	4.2	1.9	2.0	.3	10.7	2.6	47.2
Hunting Island State Park	3.3	.9	.8	2.4	1.3	.4	.5	.1	1.6	2.7	14.0
Fripp Island	4.1	1.2	.8	2.8	1.8	.6	.5	.1	2.0	3.3	17.2
Hilton Head Island	<u>40.1</u>	<u>9.0</u>	<u>8.4</u>	<u>20.7</u>	<u>13.6</u>	<u>5.2</u>	<u>5.7</u>	<u>.8</u>	<u>17.8</u>	<u>20.3</u>	<u>141.6</u>
Total	818.7	173.6	210.5	470.5	220.0	143.5	255.0	139.9	395.4	95.2	2,922.5

Source: Hartzog, Lader & Richards.

## Part Three

1980, 17.4% from 1980 to 1985, and 7.4% from 1985 to 1990. Thus, a surge of resident vacation beach user occasions is expected from 1980-1985.

### Non-Resident Vacation Use

In addition to resident vacation demand, thousands of visitors from other states travel to South Carolina each year. In 1974, for example, more than 30 million non-South Carolina residents visited this state. South Carolina was the final destination for 11 million.  
/22/

The number of beach user-occasions per non-resident visitor can be determined from PRT projections of non-resident visitors to South Carolina by state of origin. Based upon the percentage of such non-resident visitors who are destined for beach areas, the average length-of-stay, and the average number of occasions per day at the beach, the average annual per capita ocean beach user-occasion rate is estimated to be 1.2. This figure compares with 1.56 occasions for all beach areas. /23/

## Market Analysis

As shown in Exhibit III-29, demand generated by non-resident vacationers is estimated at 13.2 million occasions in 1975, 13.9 million in 1980, 14.6 million in 1985, and 15.4 million in 1990.

Assuming that non-resident demand is distributed similarly to total resident vacation demand, Exhibit III-30 illustrates the total vacation demand at each of the nine subject beach vacation destinations.

Several interesting points surface from Exhibit III-30. First, non-vacation demand for South Carolina beaches, both current and projected, is more than five times as great as resident demand, notwithstanding conservative projections. With additional resort and hotel/motel development (e.g., Kiawah Island, Fripp Island, Hilton Head Island), these figures may be surpassed.

Second, resident occasions are shown to increase at a rate of 5.1% from 1975 to 1980, 14.0% from 1980 to 1985, and 10% from 1985 to 1990, as compared to a constant increase of approximately 5.1% for the same time periods for non-resident occasions. Thus, although significant demand increases are expected in both categories throughout the projected

# Market Analysis

## Part Three

### Exhibit III-29

#### PROJECTED NON-RESIDENT BEACH USER OCCASIONS BY STATE 1975, 1980, 1985, 1990

	Non-Resident Visitors to S.C. (000's)				Beach User Occasions (000's)			
	<u>1</u> <u>1975</u>	<u>2</u> <u>1980</u>	<u>3</u> <u>1985</u>	<u>4</u> <u>1990</u>	<u>5</u> <u>1975</u>	<u>6</u> <u>1980</u>	<u>7</u> <u>1985</u>	<u>8</u> <u>1990</u>
Alabama	237.3	241.7	246.4	251.0	284.8	290.0	295.7	301.2
Alaska	7.0	7.6	8.0	8.4	8.4	9.1	9.6	10.1
Arizona	12.9	14.2	15.4	16.7	15.5	17.0	18.5	20.0
Arkansas	34.6	35.7	37.0	38.3	41.5	42.8	44.4	46.0
California	103.1	113.1	123.4	134.6	123.7	135.7	148.1	161.5
Colorado	9.5	10.4	11.4	12.1	11.4	12.5	13.4	14.5
Connecticut	246.4	259.6	279.7	301.2	295.7	311.5	335.6	361.4
Delaware	63.9	69.6	75.4	81.7	76.7	83.5	90.5	98.0
Florida	720.1	789.0	855.7	928.4	864.1	946.8	1,026.8	1,114.1
Georgia	1,463.1	1,554.0	1,644.8	1,740.1	1,755.7	1,864.8	1,973.8	2,088.1
Hawaii	10.9	11.5	11.9	12.3	13.1	13.8	14.3	14.8
Idaho	2.7	2.8	2.9	3.0	3.2	3.4	3.5	3.6
Illinois	168.7	177.2	186.3	195.8	202.4	212.6	223.6	235.0
Indiana	238.5	251.5	265.0	279.3	286.2	301.8	318.0	335.2
Iowa	15.7	16.0	16.3	16.6	18.8	19.2	19.6	19.9
Kansas	15.8	16.1	16.4	16.7	19.0	19.3	19.7	20.0
Kentucky	161.5	165.6	169.9	174.3	193.8	198.7	203.9	209.2
Louisiana	66.9	69.8	72.7	75.8	80.3	83.8	87.2	91.0
Maine	48.2	48.9	49.5	50.3	57.8	58.7	59.5	60.4
Maryland	288.9	317.8	347.2	379.5	346.7	381.4	416.6	455.4
Massachusetts	230.1	241.7	253.6	266.0	276.1	290.0	304.3	319.2
Michigan	347.4	368.9	391.3	415.2	416.9	442.7	469.6	498.2
Minnesota	40.2	42.5	44.8	47.2	48.2	51.0	53.8	56.6
Mississippi	3.9	3.9	4.0	4.1	4.7	4.7	4.8	4.9
Missouri	65.4	68.2	71.1	74.2	78.5	81.8	85.3	89.0
Montana	3.0	3.2	3.3	3.4	3.7	3.8	4.0	4.1
Nebraska	7.6	7.9	8.1	8.3	9.1	9.5	9.7	10.0
Nevada	2.7	3.1	3.5	4.0	3.2	3.7	4.2	4.8
New Hampshire	11.7	12.7	13.8	15.0	14.0	15.2	16.6	18.0
New Jersey	517.0	555.4	596.0	639.5	620.4	666.5	715.2	767.4
New Mexico	6.7	6.9	7.1	7.3	8.0	8.3	8.5	8.8
New York	698.3	728.6	760.7	794.2	838.0	874.3	912.8	953.0
North Carolina	1,853.2	1,925.2	1,995.4	2,067.2	2,233.8	2,310.2	2,394.5	2,480.6
North Dakota	3.2	3.1	2.9	2.9	3.8	3.7	3.5	3.5

## Exhibit III-29 (con't.)

PROJECTED NON-RESIDENT BEACH USER OCCASIONS BY STATE  
1975, 1980, 1985, 1990

	Non-Resident Visitors to S.C. (000's)				Beach User Occasions (000's)			
	<u>1</u> <u>1975</u>	<u>2</u> <u>1980</u>	<u>3</u> <u>1985</u>	<u>4</u> <u>1990</u>	<u>5</u> <u>1975</u>	<u>6</u> <u>1980</u>	<u>7</u> <u>1985</u>	<u>8</u> <u>1990</u>
Ohio	797.7	835.1	874.0	915.0	957.2	1,002.1	1,048.8	1,098.0
Oklahoma	11.9	12.4	13.0	13.6	14.3	14.9	15.6	16.3
Oregon	7.9	8.5	9.1	9.7	9.5	10.2	10.9	11.6
Pennsylvania	719.9	731.5	743.9	756.5	863.9	877.8	892.7	907.8
Rhode Island	12.9	13.5	14.0	14.5	15.5	16.2	16.8	17.4
South Dakota	1.9	1.9	1.9	1.9	2.3	2.3	2.3	2.3
Tennessee	333.5	347.4	361.4	375.8	400.2	416.9	433.7	451.0
Texas	39.6	42.3	45.0	47.9	47.5	50.8	54.0	57.5
Utah	7.8	8.4	9.0	9.6	9.4	10.1	10.8	11.5
Vermont	15.3	16.3	17.3	18.4	18.4	19.6	20.8	22.1
Virginia	756.4	801.3	844.6	890.2	907.7	961.6	1,013.5	1,068.2
Washington	4.5	4.9	5.2	5.5	5.4	5.9	6.2	6.6
West Virginia	241.1	234.4	229.2	224.2	289.3	281.3	275.0	269.0
Wisconsin	62.2	65.7	69.4	73.3	74.6	78.8	83.3	88.0
Wyoming	2.0	2.0	2.0	2.0	2.4	2.4	2.4	2.4
D.C.	51.0	51.0	51.0	51.0	61.2	61.2	61.2	61.2
Canada	219.5	246.5	276.8	310.8	263.4	295.8	332.2	373.0
Other Countries	39.9	40.4	40.9	41.4	47.9	48.5	49.1	49.7
Total	11,025.0	11,606.7	12,198.7	12,825.8	13,230.00	13,928.0	14,638.4	15,391.0

Note: Items may not add to totals due to round-off error

## Source Notes:

- 1) 2) 3) S.C. Department of Parks, Recreation and Tourism
- 4) Assumption is made that 85 to 90 growth rate will equal 80 to 85 growth rate
- 5) - 8) Estimated at 3.0 user occasions per visitor - based on PRT sub region analysis.

# Market Analysis

## Part Three

### EXHIBIT III-30

#### VACATION BEACH USER OCCASIONS 1975, 1980, 1985, 1990

	1975 (000's)			1980 (000's)			1985 (000's)			1990 (000's)		
	<u>Resident</u>	<u>Non-Resident</u>	<u>Total</u>	<u>Resident</u>	<u>Non-Resident</u>	<u>Total</u>	<u>Resident</u>	<u>Non-Resident</u>	<u>Total</u>	<u>Resident</u>	<u>Non-Resident</u>	<u>Total</u>
Grand Strand	1,944.2	11,602.7	13,545.9	2,037.8	12,214.9	14,252.7	2,332.8	12,837.9	15,270.7	13,497.9	13,497.9	16,064.6
Isle of Palms	13.5	79.4	92.9	14.6	83.6	98.2	16.0	87.9	103.9	17.8	92.3	110.1
Sullivan's Island	12.5	79.2	91.7	13.4	83.6	97.0	14.8	87.8	102.6	16.4	92.3	108.7
Folly Beach	65.8	396.9	462.7	71.2	417.8	489.0	78.8	439.2	518.0	86.5	461.7	548.2
Kiawah Island*	11.5	66.2	77.7	12.3	69.6	81.9	13.0	73.2	87.0	15.1	77.0	92.1
Edisto Island	35.8	211.7	247.5	38.6	222.8	261.4	43.0	234.2	277.2	47.2	246.3	293.5
Hunting Island State Park	10.8	66.2	77.0	11.4	69.6	81.0	12.6	73.2	85.8	14.0	77.0	91.0
Fripp Island	13.4	79.4	92.8	14.3	83.6	97.9	15.9	87.9	103.8	17.2	92.3	109.5
Hilton Head Island	108.6	648.3	756.9	116.5	682.5	799.0	129.5	717.4	846.9	141.6	254.2	895.8
Total	2,216.1	13,230.0	15,446.1	2,330.1	13,928.0	16,258.1	2,657.2	14,638.4	17,295.6	2,922.5	15,391.0	18,313.5

Source: Hartzog, Lader & Richards.

\*Figures are shown for 1975 though facilities will not be available to public until early 1976.

## Part Three

period, day-use from 1980 to 1985 will likely present the most critical problems.

Although these figures represent a slight decline in the growth rate of out-of-state tourism, several factors bias these calculations toward that conclusion. First, both day visitor demand and non-resident vacation demand are tied to the income distribution of the population. Much of the increase in demand for these segments results from projected growth in real income. Since the consultant applied per capita activity rates directly to PRT projections of non-resident visitors, the expected growth in upper income groups (those groups with sufficient discretionary income to travel during leisure time) is not reflected in non-resident projections as it is for day visitors and resident vacationer segments.

Furthermore, PRT projections were based upon historical growth rates to 1972 and, therefore, do not reflect the strong growth period from 1972 to the present. Thus, estimated non-resident demand may be significantly understated, but at this time no better data upon which to base the projections is available.

Third, vacation demand is extremely sensitive to promotional and marketing

## Market Analysis

efforts. Additional demand can be created by market forces and further development of resort facilities on the coast.

### Future Vacation Markets: Resident and Non-Resident

Strong leisure market growth is expected through the 1980's. The key indicators of this phenomenon are economic and demographic characteristics:

- \* strongly rising income, particularly after basic expenses are satisfied;
- \* increases in the 25-34 age group;
- \* increases in the 35-44 age group;
- \* a decline in birth rates.

Each of these trends is anticipated in the next fifteen years.

Strong growth in real income of the \$12,500+ income class is expected through 1990. /23/ As shown in



## EXHIBIT III-31

### DISTRIBUTION OF FAMILIES AND UNRELATED INDIVIDUALS BY INCOME LEVELS (1971 Dollars)

	1971	1980*	1985*	1990*
Below 12,499	71.2	56.0	48.4	41.1
12,500 to 14,999	9.1	10.8	9.0	8.3
15,000 to 17,499	6.6	8.6	9.4	7.8
17,500 to 19,999	4.3	6.5	7.6	8.3
20,000 to 24,999	4.5	8.7	10.9	12.4
25,000 to 34,999	2.9	6.3	9.5	13.6
35,000 to 49,999	.9	2.1	3.7	6.0
50,000 and over	.5	1.0	1.5	2.5

\*3.0% Projected Growth Rate.

### PERCENTAGE GROWTH YEAR TO YEAR AND TOTAL

	1971	1980	1985	1990	1971-1990
Below 12,499	Base	(10)	(6)	(10)	(2)
12,500 to 14,999	"	35	(10)	(2)	19
15,000 to 17,499	"	48	18	(4)	55
17,500 to 19,999	"	72	25	14	151
20,000 to 24,999	"	119	36	21	260
25,000 to 34,999	"	153	63	34	524
35,000 to 49,999	"	175	87	73	787
50,000 +	"	119	66	45	562

Source: U.S. Bureau of the Census, Current Population Reports, Series P-23, No. 47, "Illustrative Projections of Money Income Size Distribution for Families and Unrelated Individuals", U.S. Government Printing Office.

## EXHIBIT III-32

PROJECTED POPULATION OF  
FAMILIES AND UNRELATED INDIVIDUALS  
BY AGE  
(000's)

	1971	1975	1980	1985	1990
Under 25	6,367	6,363	7,045	6,863	6,233
25 - 34	13,402	15,448	18,730	20,982	21,663
35 - 44	11,886	11,848	13,333	16,481	19,571
45 - 54	13,048	12,665	11,986	11,763	13,115
55 - 64	11,366	11,822	12,570	12,743	12,144
65 +	13,538	14,322	15,811	17,273	18,865

PERCENTAGE GROWTH RATE  
FROM YEAR TO YEAR  
AND TOTAL

	1971	1975	1980	1985	1990	1971-1990
Under 25	Base	0	10%	(2%)	(9%)	(2%)
25 - 34	"	15%	21%	12%	3%	62%
35 - 44	"	0	13%	24%	19%	65%
45 - 54	"	(3%)	(5%)	(1%)	11%	0
55 - 64	"	4%	6%	1%	(5%)	7%
65 +	"	6%	10%	9%	9%	39%

Source: U.S. Bureau of Census, Current Population Reports,  
Series P-23, No. 47, U.S. Government Printing Office.

### EXHIBIT III-33

#### AGE GROUP AS PERCENT OF TOTAL POPULATION\* FAMILIES AND UNRELATED INDIVIDUALS

	1971	1975	1980	1985	1990
Under 25	9	9	9	8	7
25 - 34	19	21	24	24	24
35 - 44	17	16	17	19	21
45 - 54	19	17	15	14	14
55 - 64	16	16	16	15	13
65 +	19	20	20	20	21

\*Columns may not equal 100% due to rounding

Source: U.S. Bureau of Census, Current Population Reports  
Series P-23, No. 47, U.S. Government Printing Office.

Exhibits III-31-III-33, the greatest population growth will occur in households with household heads between the ages of 25-34 and 35-44. The entire population will be shifting upward in terms of real income. Over time, there will be a clustering of consumer units from the \$12,000+ range into the \$20,000-\$35,000 range in 1971 dollars. As these youthful age groups increase during the next fifteen years, they will simultaneously be growing more affluent.

This growth promises to have a substantial impact on total travel spending: travel expenditures per person-day increase dramatically with increasing income. In terms of total 1972 spending, the \$10,000-\$24,999 income groups accounted for nearly 60 percent of travel spending while representing only 40 percent of consumer units.

Thus, more families are moving into the income ranges with the highest per capita travel expenditure history. This data in itself lends substantial support to a growing and more affluent family vacation market in the next decade. For this reason, conservative projections, such as is study's demand analysis, may fall short of fact in the years ahead.

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Social attitudes toward vacation and weekend travel are expected to develop favorably, but only in line with the normal pattern of rising income. /25/ The main limitations on travel are income and inertia. People who do travel tend to spend well within their incomes for travel; and the proportion of income spent for travel is increased continuously up to very high income levels.

Inertia is the second factor because a substantial proportion of consumers who could afford to travel do so very little. The income factor is expected to develop favorably and encourage more travel; but after the income growth is taken into account, consumers in each income range are likely to maintain their inertia factor on about the same scale as in the seventies.

Aggregate consumer expenditures for leisure-specific goods and services are expected to increase from \$73.8 billion in 1973 to \$119.4 billion in 1985 (1973 dollars). /26/ Further leisure-specific expenditures continue to form an increasing portion of total personal consumption spending. Now at just below 10 percent, leisure expenditures are forecast to reach 12 percent by 1985.

## Market Analysis

In the present recessionary period, experience may be sought from the 1958 and 1970-71 recessions. In short, total consumer expenditures for recreation, as measured in constant dollars, continued during both of the prior sharp recessions. Aggregate consumer expenditures for leisure activities are remarkably resistant to the effects of short-term recession. /26/

Moreover, more families than ever before are currently making vacation plans. As Exhibit III-34 indicates, Americans continue to travel.

The average full-time worker had 1.8 weeks of vacation in 1960 and 2.2 weeks in 1969. By 1982, this average will probably be 3.0 weeks per employee, representing a growth rate of 2.4 percent per year. Most of the gain in leisure time over the next decade will be in the form of vacation increases. /28 /

Similarly, the number of employees working on compressed work weeks is expected to increase from a present 1 1/2 to 2 million to approximately 16 million in 1980. Although this firm cannot appraise this projection, it is based on a continued evolutionary pace of relatively small-scale conversions. Should this occur, one result will be

### Exhibit III-34

#### VACATION INTENDED WITHIN SIX MONTHS: DESTINATION AND MEANS OF TRAVEL

	1974					1975	
	March- April	May- June	July- August	September- October	November- December	January- February	March April
Vacation Intended	38.7	44.2	42.8	42.9	38.3	38.8	43.7
Destination							
Home state	11.5	12.9	11.2	10.7	10.6	10.6	11.7
Other states	24.6	28.4	28.8	28.7	26.1	25.6	29.4
Foreign country	3.9	3.6	4.2	3.6	2.9	3.4	3.5
Means of Travel							
Automobile	28.6	33.8	32.9	32.7	30.9	30.4	33.6
Airplane	9.4	9.7	9.7	8.8	6.8	7.3	9.8
Other	3.4	2.6	2.4	2.9	2.2	2.3	2.2

Source: Conference Board, "Consumer Attitudes and Buying Plans", May, 1975.

## Part Three

an incremental 1980 consumer spending of approximately \$1.4 billion for goods and services employed in participant recreation activities, especially those that are traditionally pursued on weekends. /29/

One impact on South Carolina's beach use is clear. Adoption of compressed work weeks would be expected to increase tourism and hospitality markets, particularly those associated with relatively short weekend trips. Compressed work weeks would stimulate travel, while energy shortages and increased fuel prices would tend to result in shorter average trip distances. Thus, beach areas near metropolitan centers will be in even greater demand.

### Effects of Private Development

Currently in South Carolina, private enterprise provides the largest percentage of outdoor recreation facilities and services. More than 82 percent of such facilities are operated by the private sector, while the public sector provides only approximately 18 percent of such facilities. Exhibit III-35 shows the distribution of the State's facilities by type of operation.

## Market Analysis

Exhibit III-35

### DISTRIBUTION OF THE STATE'S TOTAL OUTDOOR RECREATION FACILITIES BY TYPE OF OPERATION

<u>Facilities</u>	<u>Private Sector</u>	<u>Public Sector</u>
Campgrounds	110	68
Riding Stables	21	2
Fishing Piers	14	1
Golf Courses	181	5
Marinas	36	1
Hunting Areas	42	47
Fishing/Boating Facilities (Boat Ramps)	111	225
Amusement, Theme Park, Fairground, Gardens	78	1
Auto/Horse Racing Tracks	3	0
Accommodations	966 hotel/ motel	11 cabin de- velopments
Charter Fishing Boats	29	0
TOTALS	1,591	Enter-346 Facility prise
	(82.1%)	(17.9%)

Source: South Carolina PRT, South  
Carolina Private Outdoor  
Recreation Systems Plan, *supra.*, p. 7.

# Market Analysis

## Part Three

In the past decade, extensive development of recreation facilities and destination areas by the private sector has had the effect of greatly increasing South Carolina's share of the family vacation market, providing second home and recreational property opportunities for residents of states with inclement weather, and developing some of the finest golf, tennis, and beach facilities in the nation.

In conclusion, the demand for beach use and beach vacations will continue to grow throughout the next fifteen years. Resort areas such as Myrtle Beach and Hilton Head Island will continue to attract the large majority of the South Carolina vacation market. Additionally, Kiawah Island has the potential to become a resort destination of the same magnitude as Hilton Head Island. The South Carolina coast currently provides accommodations and vacation opportunities for families of nearly all income ranges and recreational interests. These opportunities will greatly increase in the future primarily on Kiawah and Hilton Head Islands.

A major concern, however, is the availability of coastal recreation facilities for lower income classes and especially for resident day use of the beach area. The ever increasing

tourist trade, and the lack of public parking at the beach facilities, make opportunities for residents to spend a day at the beach increasingly difficult. Further, in areas of large population concentration, especially Charleston, traffic congestion to popular public beach areas has increased to the extent that residents of the beach communities are strongly opposed to additional development of facilities in their community. These factors will necessitate strong action by the public sector to provide balance between permanent resident and transient resident demand.

## Market Conclusions

In terms of market considerations, South Carolina's tourism and recreation growth potential is tremendous. The facts that tourist expenditures increased 36 percent from 1973 to 1974, that tourism is the State's second largest industry, and that nearly 80 percent of this spending occurred at coastal areas indicate the importance of beaches to the State's economy.

## Part Three

South Carolina tourism's history has been marked by continued increases in the number of visitors and their expenditures. Tourist spending has tripled in the last decade. This remarkable record notwithstanding, demographic and psychographic characteristics of beach users, especially auto travelers, evidence the significant untapped potential which can be realized by creative inducement of increased tourist expenditures and lengthened average visitor stays.

Beach demand from both day visitors and vacationers will continue to increase in the next fifteen years. Total day-use demand for South Carolina beaches is conservatively estimated to be 5.6 million beach-user occasions in 1975. This figure will grow to 5.9 million occasions in 1980, 7.2 million occasions in 1985, and 8.1 million occasions in 1990. The dramatic increase between 1980 and 1985 can be ascribed to an upward shift in projected real incomes.

Although demand distribution may be effectively altered by provision or expansion of additional beach access points and recreation facilities, the total potential demand will not be diminished, and the origin of the demand will not be significantly changed.

## Market Analysis

Day visitor access is a problem for the entire coast, but is particularly critical in the Charleston area. More than 45 percent of the State's beach-user occasions are generated by residents of the Charleston SMSA. Parking is, perhaps, the most critical factor affecting day visitor opportunities, and legal parking -- inadequate throughout the coast -- is totally inadequate near Charleston. For example, capacity analysis identifies conservatively, a need for three times as many legal parking spaces as are currently available at Sullivans Island and twice as many at Hunting Beach State Park, Isle of Palms, and Folly Island to merely accommodate 1975 level of demand.

Total vacationer demand for beach use, resident and non-resident, is estimated to be 15.4 million user-occasions in 1975, 16.3 million occasions in 1980, 17.3 million in 1985, and 18.3 million in 1990. Non-resident demand, current and projected, is more than five times as great as resident demand -- evidence of the fact that South Carolina's coast is truly a regional resource. Expansion of the vacation market is projected to occur at the greatest rate from 1980 to 1985.



# Market Analysis

## Part Three

Resort areas such as Myrtle Beach and Hilton Head Island will continue to attract a majority of the South Carolina vacation market. Additionally, Kiawah Island has the potential to become a resort destination of the same magnitude as Hilton Head Island.

A major problem is the limit of available coastal recreation facilities for resident day users. Ever-increasing tourism and inadequate public parking compound the constraints of most beaches' recreational carrying capacity. Even 1975 average summer weekend crowds strain capacity of Myrtle, Sullivans, Folly and Edisto beaches. Beach communities near large urban areas, principally Charleston, are threatened with traffic congestion and inordinate fiscal burdens because they will increasingly serve as metropolitan ocean playgrounds.

Strong leisure market growth, expected throughout the 1980's due to changing demographic characteristics and socio-economic trends, requires that beach use demand be dispersed. The private sector will play an important role by developing facilities to accommodate vacationers and to service certain day use needs. Whether by acquisition, regulation, or other means, however, State and local governments must expand public beach access and recreation opportunities to meet demand projections lest South Carolina lose the great natural, social, and economic benefits derived from its beaches.

## Part Three

<sup>1</sup> South Carolina PRT, Orientation Report for Governor-Elect James B. Edwards, December 10, 1974, no page.

<sup>2</sup> South Carolina PRT, 1974 South Carolina Travel Study-Summary Report, 1975, no page.

<sup>3</sup> U.S. Travel Data Center, 1972 National Expenditure Study: Summary Report, Washington, D.C., September, 1973, at 45.

<sup>4</sup> Centaur Management Consultants, Inc., Family Income Patterns in Tourism/Recreation Areas, U.S. Department of Commerce, Washington, D.C., 1974, at 48.

<sup>5</sup> 1974 South Carolina Travel Study. Supra.

<sup>6</sup> Mayo, Edward J., The Psychology of Choice in the Lodging Market, University of Notre Dame, 1974, at 3-8.

<sup>7</sup> Ibid., at 6.

<sup>8</sup> 1974 South Carolina Travel Study, supra.

## Market Analysis

<sup>9</sup> Midwest Research Institute, Opportunities in the Leisure Industry: Statistical Summary, February, 1972, no page.

<sup>10</sup> All trip characteristics data, except where otherwise noted, is extracted from the South Carolina PRT, South Carolina Private Outdoor Recreation Systems Plan, Title 3, Chapter 3.

<sup>11</sup> South Carolina PRT, South Carolina Private Outdoor Recreation Systems Plan Supra, at 39.

<sup>12</sup> The following instructional data is derived from Behavior Science Corporation, Developing the Family Travel Market, Los Angeles, CA, 1972, at 34-49.

<sup>13</sup> The major sources of data reflected in this demand analysis follow:

South Carolina PRT,  
South Carolina Private  
Outdoor Recreation Systems  
Plan, supra, Appendix 3,  
at 31-55.

American Automobile association  
"Distances Between Cities,"  
South Carolina State Map.

# Market Analysis

## Part Three

Marketing Economics Institute,  
Marketing Economics Guide 1974-1975,  
1974, at 2-15, 72-73.

Kiawah Beach Company,  
Myrtle Beach Market Study,  
March 3, 1975.

Sea Pines Company,  
Resort Guest Tracking Systems  
Quarterly Reports, June, 1974;  
January, 1975; May, 1975.

Greater Myrtle Beach Chamber of  
Commerce, Visitor Survey, September,  
1974.

Harvard University,  
Ecologic-Economic Analysis for  
Regional Development; Regional  
Science and Landscape Analysis  
Project, Department of Landscape  
Architecture, Graduate School of  
Design, Harvard University Free  
Press, New York, New York,  
November, 1969, at 31-36.

14 See, e.g., South Carolina PRT, South  
Carolina Private Outdoor Recreation Systems  
Plan, Private Recreation User's Profile,  
op. cit., at 42; U.S. Travel Data Center,  
1972 National Travel Expenditure Study,  
September, 1973; Midwest Research Institute,  
Opportunities in the Leisure Industry:  
Statistical Summary, 1972, no pages.

15 South Carolina PRT, South Carolina  
Private Outdoor Recreation Systems Plan,  
supra, at 3-70.

16 Population figures used are the most  
uniformly derived projections available  
at the time of this study and may be a  
source of disagreement. More reliable  
projections will only strengthen the  
gravity model. The gravity model's value  
as a predictive device will increase if  
more accurate information can be supplied.  
South Carolina Demographer's Office supplied  
the projections used here.

17 U.S. Department of Commerce, Current  
Population Reports, Series, P-23, No. 47,  
"Illustrative Projections of Money Income  
Size Distribution for Families and Unre-  
lated Individuals," U.S. Government  
Printing Office, 1974, at 14, 20, 38, 56.

18 See Appendix III-B.

19 The Grand Strand includes Atlantic  
Beach, North Myrtle Beach, Myrtle Beach,  
Surfside Beach, Garden City Beach,  
Huntington Beach State Park, Litchfield  
Beach, and Pawleys Island. Although it  
is highly desirable to determine demand  
for each of these areas separately, data  
was insufficient for doing so at the  
time of this study.

## Part Three

20 See Appendix Exhibits III-C to III-K.

21 HLR Beach Use Survey, August, 1975.

22 South Carolina PRT, 1974 South Carolina Travel Study, supra, no pages.

23 South Carolina PRT, South Carolina Private Outdoor Recreation Systems Plan; supra, at 3-70.

24 These projections appear in U.S. Department of Commerce, Current Population Reports, Series P-23, No. 47, supra.

## Market Analysis

25 Lionel D. Edie and Company, U.S. Travel Outlook Through 1982, May, 1972, at 81.

26 Midwest Research Institute, unpublished data, 1974.

27 Ibid.

28 Lionel D. Edie and Company, supra, at 83.

29 Midwest Research Institute, Compressed Work Weeks - Impact for L/R Products and Services, 1974, at 3.



## Part Four

### Beach Use Survey

Currently available information concerning beach use, by income levels and driving distance to day-use beach areas, was inadequate for this study. A survey of beach users at selected points along the South Carolina coast was therefore conducted. Its objectives were to describe the profile of beach users; to examine the distance traveled by beachgoers to the shore; and to determine the extent of demand for beach recreation in South Carolina.

Nine public beach areas were selected to secure a representative sampling of beach users. Each site was monitored during three interview periods -- a week-end day, a week day, and a holiday week-end day -- between August 16 and September 1, 1975. A questionnaire -- inquiring about distance from home to beach, vacation or day use, camping, income, education, age, occupation, residence, and composition of visitor group -- was administered through personal interviews. (Appendix IV-A)

The survey results, as noted in Exhibit IV-1 represent responses from 1,293 interviewees. Only one person from any group was questioned, and such persons were selected at random from

## Beach Use Survey

every third or fourth group. Completed questionnaires were coded and computer-processed for the following cross-tabulations: (1) All respondents; (2) Respondents by beach area; (3) Respondents by type of beach use, i.e., overnight, vacation, or day only; and (4) Respondents by income class.

### EXHIBIT IV-1

#### BEACH DESTINATION AND SAMPLE SIZE

<u>Beach Area</u>	<u># of Respondents</u>
Atlantic Beach	210
Myrtle Beach Pavilion	120
Myrtle Beach State Park	224
Huntington Beach State Park	107
Isle of Palms	113
Sullivans Island	66
Folly Beach	184
Edisto Beach State Park	130
Hilton Head Island	119
Total Respondents	1,293

# Beach Use Survey

## Part Four

### Summary

The total sample, through no technical manipulation, is comprised of approximately equal numbers of South Carolinians and out-of-state residents. Yet, there are significant differences in homes-of-residence at each of the beaches. The most northern -- Atlantic Beach and Myrtle Beach -- were dominated by non-residents, especially North Carolinians. Isle of Palms, Sullivans Island, and Folly Beach are almost exclusively used by Charleston residents.

Demographically, beach visitors in all use categories -- vacation, overnight, and day only -- are middle income, young households. Most are employed in professional/technical, business, or labor positions. Most beach visitors come in family groups, and the average party size is four.

Generally, vacationers and overnight visitors are unlikely to visit the beach more than once a year, and they are not likely to use other South Carolina beaches in the same year. Most day visitors, on the other hand, make several trips to one particular beach each year, but also make visits to other South Carolina beaches. Day users generally do not make vacation or overnight trips to South Carolina beaches.

Hotels, motels, and campgrounds provide the most common overnight or vacation accommodations. Relatively few persons stay in cottages or the homes of friends or relatives. Nearly all beachgoers, whether vacationers or day-users, drive automobiles to the beach. Most park between one and two blocks from the shore in a free public parking lot or on the street.



## Part Four

### Beach Use Profile

The respondents are divided almost equally between male and female. Their median age is 28 years, and the median age of their head-of-household is 37 years. Median household income is \$13,350, and the head-of-household is typically employed as professional/technical (20.9%), followed by business (13.3%) and laborer (10.8%). Only 3.8 percent of heads-of-households are retired.

After South Carolina (54%), North Carolina (15.7%) is the most popular permanent residence for the State's beach users. Most are vacationing for more than two days (44.6%) or are at the beach just for the day (45.5%). Fewer than 10 percent are on an overnight or weekend trip to the beach. Hotels and motels commonly accommodate those who are on an overnight trip, although almost one-fourth of such travelers stay at campgrounds and an approximately equal number with friends or relatives. Most of the vacationing respondents (56.1%) plan to stay less than a week and at a hotel/motel (34.2%).

Most respondents do not use the particular beach at which they were interviewed at any other time. More than four-fifths have not visited the

## Beach Use Survey

beach for a weekend trip at any other time during the year; two-thirds had not vacationed at the particular beach during the year. More than half of the beachgoers interviewed did not visit the particular beach at other time just for the day. These frequencies, it should be noted, differed greatly by beach area. Such differences will be addressed in the next section. A similar pattern exists for total respondents when asked about their use of other South Carolina beaches.

Most respondents (58%) come to the beach with their families. Approximately equal numbers come with friends (21.3%), or a combination of family and friends (19.7%). The average party size is four. Nearly all drive automobiles to the beach (81.4%), and most park between one and two blocks away either in a free parking lot or on the street. Less than four percent of all beach users park in parking facilities where they have to pay.

Important differences can be discerned from the profiles of respondents in the respective destination beach area. Exhibit IV-2 tabulates these conclusions.



# Beach Use Survey

## Part Four

### EXHIBIT IV-2

#### BEACH USER PROFILE BY BEACH AREA

TYPE OF USE	Total Re- spondents	Atlantic Beach	Myrtle B. Pavilion	Myrtle B. St. Park	Huntington B. St. Park	Sullivan's Island	Isle of Palms	Folly Beach	Edisto B. St. Park	Hilton Head Island
	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
Overnight	9.8	12.9	5.8	10.7	13.1	7.6	3.5	5.4	12.3	15.1
On Vacation	44.6	53.3	90.0	63.9	68.2	7.6	26.5	13.0	16.9	39.5
Just for the day	45.5	33.3	4.2	25.4	18.7	84.8	70.0	81.5	70.8	45.4
No answer	.1	.5	-	-	-	-	-	-	-	-
(Respondents)	(1,293)	(210)	(120)	(244)	(107)	(66)	(113)	(184)	(130)	(119)
<b>OVERNIGHT ACCOMMODATIONS</b>										
Campground	26.0	3.7	14.3	57.8	57.2	-	-	20.0	31.2	5.6
Hotel/motel	33.1	59.2	85.7	19.2	21.4	20.0	-	10.0	6.3	33.3
Cottage/vacation home	12.6	11.2	-	3.8	14.3	-	50.0	10.0	31.2	16.6
Friend/relative home	23.6	25.9	-	19.2	7.1	80.0	25.0	30.0	12.5	38.9
Other	4.7	-	-	-	-	-	25.0	30.0	12.5	5.6
No Answer	-	-	-	-	-	-	-	-	6.3	-
(Respondents)	(127)	(27)	(7)	(26)	(14)	(5)	(4)	(10)	(16)	(18)
<b>VACATION - LENGTH OF STAY</b>										
1-2 nights	16.5	10.7	20.4	21.2	12.3	20.0	10.0	16.7	4.6	25.5
Less than a week	39.6	14.3	55.6	43.6	39.7	40.0	43.3	45.8	40.9	31.9
One week	27.0	51.8	16.7	17.9	31.5	-	36.7	25.0	31.8	17.1
More than a week	15.4	23.2	6.4	14.7	16.5	40.0	100.0	4.2	22.7	25.5
No answer	1.5	-	.9	2.6	-	-	-	8.3	-	-
(Respondents)	(589)	(112)	(108)	(156)	(73)	(5)	(30)	(24)	(22)	(47)
<b>VACATION ACCOMMODATIONS</b>										
Campground	26.4	3.6	1.8	53.2	64.4	-	-	12.5	50.0	6.4
Hotel/motel	34.2	30.4	88.9	15.4	13.7	-	23.3	8.3	18.2	48.9
Cottage/vacation home	10.2	12.5	.9	6.4	11.0	20.0	20.0	12.5	45.4	23.4
Friend/relative home	12.8	17.8	-	10.9	8.2	80.0	36.7	29.2	9.1	17.0
Other	.9	.9	-	1.9	-	-	3.3	-	-	-
No answer	15.5	34.8	8.4	12.2	2.7	-	16.7	37.5	27.3	4.3
(Respondents)	(579)	(112)	(108)	(156)	(73)	(5)	(30)	(24)	(22)	(47)

## Beach Use Survey

## EXHIBIT IV-2

## BEACH USER PROFILE BY BEACH AREA (con't.)

	Total Re- spondents	Atlantic Beach	Myrtle B. Pavillion	Myrtle B. St. Park	Huntington B. St. Park	Sullivan's Island	Isle of Palms	Folly Beach	Edisto B. St. Park	Hilton Head Island
	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
<u>DISTANCE FROM PERMANENT RESIDENCE</u>										
1-5 miles	7.6	6.2	2.5	5.3	4.7	18.2	9.7	12.5	1.5	13.4
6-15 miles	12.5	6.2	-	3.7	3.7	39.4	15.0	46.7	-	5.0
16-30 miles	8.6	1.9	-	.8	5.6	25.8	34.5	20.1	2.3	2.5
31-60 miles	9.1	3.3	-	1.2	.9	1.5	7.1	2.2	59.2	14.3
61-90 miles	3.5	3.3	1.7	6.1	3.7	-	1.8	.5	7.7	3.4
90+	58.0	76.2	95.8	82.0	81.3	15.2	31.9	17.4	28.5	61.3
No answer	.8	2.9	-	.8	-	-	-	.5	.8	-
(Respondents)	(1,293)	(210)	(120)	(244)	(107)	(66)	(113)	(184)	(130)	(119)
<u>FREQUENCY OF WEEKEND VISITS</u>										
0	82.0	80.0	85.0	76.2	85.0	61.8	79.6	81.5	83.8	92.4
1	8.2	10.0	6.7	9.4	8.4	4.5	8.8	17.4	3.8	5.0
2	4.3	4.3	4.2	6.6	1.9	6.1	3.5	3.8	4.6	1.7
3	1.4	1.4	1.7	1.2	4.7	1.5	-	.5	2.3	-
4+	4.0	3.8	2.5	6.6	-	6.1	8.1	2.2	4.6	.8
No answer	.1	.5	-	-	-	-	-	.5	.8	-
(Respondents)	(1,293)	(210)	(120)	(244)	(107)	(66)	(113)	(184)	(130)	(119)
<u>FREQUENCY OF VACATION TRIPS TO THIS BEACH THIS YEAR</u>										
0	66.7	55.7	32.5	49.2	47.7	89.4	77.0	90.8	90.8	88.2
1	20.5	27.1	35.8	32.0	31.8	6.1	20.4	6.0	5.4	6.7
2	7.4	10.0	16.7	11.5	15.0	3.0	2.6	.5	.8	3.4
3	2.4	3.3	9.2	2.5	2.8	-	-	.5	.8	1.7
4+	2.8	3.3	5.8	4.9	2.8	1.5	-	1.6	2.3	-
No answer	.2	.5	-	-	-	-	-	.5	-	-
(Respondents)	(1,293)	(210)	(120)	(244)	(107)	(66)	(113)	(184)	(130)	(119)

# Beach Use Survey

## Part Four

### EXHIBIT IV-2

#### BEACH USER PROFILE BY BEACH AREA (con't.)

	Total Re- spondents	Atlantic Beach	Myrtle B. Pavilion	Myrtle B. St. Park	Huntington B. St. Park	Sullivan's Island	Isle of Palms	Folly Beach	Edisto B. St. Park	Hilton Head Island
<u>FREQUENCY OF DAY USE AT THIS BEACH THIS YEAR</u>										
0	55.5	61.9	91.7	73.0	73.8	16.7	31.9	14.1	58.5	60.5
1-5	18.4	20.0	1.7	11.5	12.1	19.7	23.0	28.3	31.5	17.6
6-10	6.2	4.3	.8	4.5	2.8	16.7	7.1	13.6	2.3	7.7
11-20	5.8	1.4	.8	.4	4.7	15.2	11.5	16.3	1.5	8.4
20+	13.9	11.9	5.0	10.7	6.5	31.8	26.5	27.2	6.2	5.9
No answer	.2	.5	-	-	-	-	-	.5	-	-
(Respondents)	(1,293)	(210)	(120)	(244)	(107)	(66)	(113)	(184)	(130)	(119)
<u>FREQUENCY OF WEEKEND TRIPS TO OTHER SC BEACHES THIS YEAR</u>										
0	88.5	95.2	96.7	91.8	89.7	66.7	86.7	83.7	77.7	93.3
1	6.3	3.3	3.3	3.7	6.5	22.7	7.1	8.7	9.2	3.4
2	2.6	1.0	-	2.5	.9	3.0	3.5	4.9	4.6	3.4
3	.9	-	-	.4	1.9	1.5	.9	2.2	2.3	-
4+	1.5	-	-	1.6	.9	6.1	1.8	.5	6.2	-
No answer	.2	.5	-	-	-	-	-	-	-	-
(Respondents)	(1,293)	(210)	(120)	(244)	(107)	(66)	(113)	(184)	(130)	(119)
<u>FREQUENCY OF VACATION TRIPS TO OTHER SC BEACHES THIS YEAR</u>										
0	91.9	92.9	93.3	90.6	86.9	83.8	92.0	95.7	93.8	92.4
1	5.0	4.3	3.3	4.9	8.4	12.1	5.3	3.8	3.8	4.2
2	1.7	1.9	2.5	2.0	.9	3.0	.9	.5	1.5	2.5
3	.8	.5	.8	1.2	2.8	-	-	-	.8	.8
4+	.5	-	-	1.2	.9	1.5	1.8	-	-	-
No answer	.1	.5	-	-	-	-	-	-	-	-
(Respondents)	(1,293)	(210)	(120)	(244)	(107)	(66)	(113)	(184)	(130)	(119)
<u>FREQUENCY OF DAY-USE AT OTHER SC BEACHES THIS YEAR</u>										
0	75.9	93.3	98.3	89.8	90.7	34.8	53.1	48.4	61.5	84.0
1-5	13.8	3.8	1.7	4.5	2.8	27.3	31.9	31.0	23.8	10.9
6-10	4.4	1.9	-	1.6	-	12.1	8.0	11.4	6.9	1.7
11-20	1.7	-	-	-	.9	4.5	2.7	3.8	3.1	3.4
20+	4.0	.5	-	4.1	5.6	21.2	4.4	5.4	4.6	-
No answer	.1	.5	-	-	-	-	-	-	-	-
(Respondents)	(1,293)	(210)	(120)	(244)	(107)	(66)	(113)	(184)	(130)	(119)

## Beach Use Survey

## EXHIBIT IV-2

BEACH USER PROFILE BY BEACH AREA (con't.)

	Total re- spondents	Atlantic Beach	Myrtle B. Pavilion	Myrtle B. St. Park	Huntington B. St. Park	Sullivan's Island	Isle of Palms	Folly Beach	Edisto B. St. Park	Hilton Head Island
	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
<u>PARTY SIZE</u>										
1	8.9	14.3	3.3	6.1	9.3	3.0	8.0	7.6	4.7	21.0
2	26.4	24.3	26.7	29.1	27.1	16.7	27.4	29.3	24.0	26.1
3	14.2	10.0	15.0	14.3	13.1	12.1	12.4	20.1	17.1	12.6
4	19.0	15.2	17.5	20.9	16.8	30.3	17.7	17.4	27.1	14.3
5	10.0	7.1	12.5	9.8	14.0	9.1	13.3	8.7	7.8	10.9
6	8.0	8.1	10.8	9.4	5.6	12.1	8.0	4.3	7.8	7.6
7	4.4	2.9	5.8	4.9	6.5	6.1	4.4	3.8	3.1	4.2
8	1.9	4.8	.8	.8	.9	3.0	1.8	1.1	1.6	2.5
9+	6.8	12.9	6.7	4.5	6.5	6.1	7.1	7.6	6.2	.8
No answer	.4	.5	.8	-	-	1.5	-	-	1.6	-
(Respondents)	(1,293)	(210)	(120)	(244)	(107)	(66)	(113)	(184)	(130)	(119)
<u>PARTY COMPOSITION</u>										
Friends	21.3	15.2	16.7	14.8	19.6	30.3	19.5	40.2	17.1	23.5
Family	58.0	67.1	64.2	68.4	59.8	36.4	53.1	40.2	62.8	52.1
Both	19.7	17.1	15.8	14.3	20.6	31.8	27.4	19.6	20.2	23.5
No answer	1.0	.5	3.3	2.5	-	1.5	-	-	.8	.8
(Respondents)	(1,293)	(210)	(120)	(244)	(107)	(66)	(113)	(184)	(130)	(119)
<u>DRIVE TO BEACH</u>										
Yes	81.4	79.5	80.0	72.1	83.2	92.4	91.2	95.1	79.2	69.7
No	18.3	19.5	19.2	27.5	16.8	7.6	8.8	4.9	20.8	30.3
No answer	.3	1.0	.8	.4	-	-	-	-	-	-
(Respondents)	(1,293)	(210)	(120)	(244)	(107)	(66)	(113)	(184)	(130)	(119)
<u>DISTANCE PARKED FROM THE BEACH</u>										
1-2 blocks away	89.4	71.3	97.9	86.4	89.9	93.4	88.3	95.4	100.0	98.8
3-5	7.8	21.0	2.1	9.7	10.1	4.9	11.7	2.3	-	-
5+	2.1	7.7	-	3.9	-	-	-	.6	-	1.2
No answer	.7	-	-	-	-	1.7	-	1.7	-	-
(Respondents)	(1,057)	(167)	(96)	(176)	(89)	(61)	(103)	(175)	(103)	(83)

# Beach Use Survey

## Part Four

### EXHIBIT IV-2

#### BEACH USER PROFILE BY BEACH AREA (con't.)

	Total re- spondents	Atlantic Beach	Myrtle B. Pavilion	Myrtle B. St. Park	Huntington B. St. Park	Sullivan's Island	Isle of Palms	Folly Beach	Edisto B. St. Park	Hilton Head Island
<u>WHERE VEHICLE WAS PARKED</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
Free Parking	57.9	26.3	96.9	90.3	65.4	3.3	74.8	9.1	72.8	92.8
On the street	27.2	42.5	2.1	4.0	11.2	80.3	5.8	65.8	20.4	6.0
In a pay parking lot	3.5	9.6	-	.6	-	-	-	11.4	-	-
Other	10.9	21.6	1.0	5.1	6.5	16.4	19.4	13.7	5.8	1.2
No answer	.5	-	-	-	16.8	-	-	-	1.0	-
(Respondents)	(1,059)	(167)	(96)	(176)	(107)	(61)	(103)	(175)	(103)	(83)
<u>SEX OF RESPONDENT</u>										
Male	48.3	55.2	43.3	56.2	48.6	27.3	54.0	39.1	37.7	52.1
Female	51.7	44.8	56.7	43.9	51.4	72.7	46.0	60.9	62.3	47.9
(Respondents)	(1,293)	(210)	(120)	(244)	(107)	(66)	(113)	(184)	(130)	(119)
<u>AGE OF RESPONDENT</u>										
-18	8.4	6.2	3.3	7.4	6.5	9.1	9.7	13.0	3.8	16.8
18-24	32.9	27.6	23.3	33.2	33.6	34.8	33.6	37.0	33.1	42.0
25-34	26.3	23.8	31.7	26.6	30.8	31.8	23.9	23.4	30.8	19.3
45-54	17.7	22.9	21.7	17.6	17.8	9.1	11.5	16.3	17.7	17.6
55-64	10.7	12.4	16.7	10.7	7.5	10.6	15.9	8.2	10.8	3.4
65+	2.3	2.9	2.5	2.5	2.8	3.0	3.5	1.1	3.1	-
No answer	.6	1.9	.8	.8	-	-	.9	-	-	-
Median	28 yrs.	31 yrs.	32 yrs.	28 yrs.	28 yrs.	27 yrs.	27 yrs.	25 yrs.	25 yrs.	23 yrs.
(Respondents)	(1,293)	(210)	(120)	(244)	(107)	(66)	(113)	(184)	(130)	(119)
<u>AGE OF HEAD OF HOUSEHOLD</u>										
-25	17.5	15.2	9.2	21.3	27.1	13.6	17.7	17.9	16.9	15.1
25-34	25.3	22.9	29.2	26.6	24.3	31.8	23.9	22.3	30.0	21.0
35-44	24.5	31.4	27.5	20.9	21.5	19.7	23.0	22.3	20.0	31.9
45-54	22.5	20.0	25.0	19.3	19.6	18.2	26.5	28.8	23.8	21.0
55-64	7.0	4.3	6.7	7.4	4.7	12.1	7.1	8.2	6.2	9.2
65+	2.1	3.8	-	2.0	2.8	4.5	1.8	.5	3.1	.8
No answer	1.2	2.4	2.5	2.5	-	-	-	-	-	.8
Median	37 yrs.	38 yrs.	38 yrs.	35 yrs.	33 yrs.	37 yrs.	38 yrs.	39 yrs.	36 yrs.	39 yrs.
(Respondents)	(1,293)	(210)	(120)	(244)	(107)	(66)	(113)	(184)	(130)	(119)

# Part Four

# Beach Use Survey

## EXHIBIT IV-2

	Total Re- spondents	Atlantic Beach	Myrtle B. Pavilion	Myrtle B. St. Park	Huntington B. St. Park	Sullivan's Island	Isle of Palms	Folly Branch	Edisto B. St. Park	Hilton Head Island
	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
<b>HOUSEHOLD INCOME</b>										
-5,000	6.1	9.0	-	6.6	4.7	3.0	6.2	8.7	6.9	4.2
5-10,000	20.4	32.4	18.3	20.5	21.5	16.7	15.0	19.0	21.5	8.4
10-15,000	27.1	32.4	22.5	32.8	28.0	15.2	26.5	28.8	30.0	11.8
15-25,000	25.2	15.2	35.0	24.2	26.2	40.9	25.7	32.6	20.8	18.5
25-50,000	9.6	3.8	15.8	5.3	15.0	15.2	12.4	9.2	15.4	5.9
50,000+	.9	-	-	1.2	1.9	1.5	-	-	4.6	-
No answer	10.6	7.1	8.3	9.4	2.8	7.6	14.2	1.6	.8	51.3
Median	\$13,350.00	\$10,800.00	\$16,400.00	\$13,000.00	\$14,000.00	\$17,800.00	\$14,100.00	\$13,700.00	\$13,500.00	\$15,000.00
(Respondents)	(1,293)	(210)	(120)	(244)	(107)	(66)	(113)	(184)	(130)	(119)
<b>OCCUPATION OF HEAD OF HOUSEHOLD</b>										
Prof./technical	20.9	16.7	20.0	18.4	21.5	34.8	28.3	17.9	21.5	22.7
Management	8.1	3.3	12.5	9.0	15.9	12.1	4.4	3.8	8.5	10.9
Government	5.6	6.2	4.2	4.9	2.8	9.1	3.5	6.5	8.5	5.9
Skilled Craftsmen	7.4	6.7	10.8	10.7	8.4	-	7.1	7.1	3.8	6.7
Service Worker	6.3	16.2	1.7	7.0	3.7	1.5	1.8	5.4	5.4	3.4
Clerical	4.6	6.2	4.2	3.7	3.7	6.1	4.4	6.5	.8	5.9
Armed Forces	8.0	3.8	.8	7.0	10.3	10.6	18.6	11.4	12.3	.8
Laborer	10.8	21.9	12.5	13.1	7.5	1.5	6.2	6.0	7.7	8.4
Business	13.8	9.5	25.0	10.7	16.8	9.1	11.5	15.2	14.6	16.0
Retired	3.8	2.9	3.3	3.3	2.8	4.5	5.3	6.5	3.1	2.5
Other	10.6	6.7	5.0	12.3	6.5	10.6	8.8	13.6	13.8	16.8
No answer	-	-	-	-	-	-	-	-	-	-
(Respondents)	(1,293)	(210)	(120)	(244)	(107)	(66)	(113)	(184)	(130)	(119)
<b>OCCUPATION PRIOR TO RETIREMENT</b>										
Professional/technical	22.4	33.2	50.0	25.0	-	-	-	25.0	50.0	-
Management	16.3	-	-	12.5	33.3	33.3	-	16.7	50.0	33.3
Government	18.4	-	-	-	66.7	-	66.6	8.3	-	33.3
Skilled Craftsmen	2.1	-	25.0	-	-	-	-	-	-	-
Service Worker	4.0	16.7	25.0	-	-	-	-	-	-	-
Clerical	2.1	-	-	-	-	-	-	-	-	-
Armed Forces	20.4	16.7	-	25.0	-	33.3	-	50.0	-	-
Laborer	6.1	16.7	-	-	-	-	16.7	-	-	33.4
Other	8.2	-	-	12.5	-	33.4	16.7	-	-	-
Business	-	16.7	-	25.0	-	-	-	-	-	-
No answer	-	-	-	-	-	-	-	-	-	-
(Respondents)	(49)	(6)	(4)	(8)	(3)	(3)	(6)	(12)	(4)	(3)

Source: Hartzog, Lader & Richards, South Carolina Beach Use Survey, August, 1975.

# Beach Use Survey

## Part Four

### Atlantic Beach

Lower incomes are the principal demographic distinction between Atlantic Beach visitors and all other respondents. Atlantic Beach respondents have a median income of \$10,800, compared to \$13,350 for all respondents. Vocationally, respondents are concentrated in service worker or laborer positions.

More than half of the sample are at the beach on a vacation of one week or more. The most typical accommodation is a hotel or motel room. More than three-fourths of the visitors are 90 or more miles from home.

Generally, slightly more than one-third of the visitors to Atlantic Beach frequent it at other times during the year. Few indicate they visit other South Carolina beaches. More than 60 percent of the sample are from out of state, primarily North Carolina.

Atlantic Beach, consequently, can be characterized as primarily serving the lower income vacation market, and, secondarily, attracting the lower income day-use market.

### Myrtle Beach Pavilion

Respondents interviewed on the beach near the Myrtle Beach Pavilion are typically from households where the head-of-the household is 38 years, earns a median income of \$16,400, and is employed in a professional/technical or business occupation. These characteristics represent a somewhat upscale profile in comparison with those interviewed at other subject sites. Visitors here have the second highest median income of the surveyed beach areas. Myrtle Beach is used almost exclusively as a vacation destination: more than 90 percent of the respondents are on vacation. Their primary accommodations are hotels and motels. Campgrounds are the second most frequented accommodation.

Although most respondents have not frequented other South Carolina beaches this year, more than two-thirds have made other vacation trips to Myrtle Beach this year. Few use the beach just for the day or for an overnight trip at other times during the year. The length-of-stay is relatively short; more than half stay less than one week.

Almost all the respondents (96%) come from more than 90 miles away, and more than 80 percent were non-residents. As with Atlantic Beach, most respondents come from North Carolina.

## Part Four

Myrtle Beach is thus a middle-class vacation destination characterized by relatively short lengths-of-stay and many North Carolina visitors.

### Myrtle Beach State Park

Myrtle Beach State Park visitors are slightly younger and have lower incomes than those at the pavilion area of Myrtle Beach. The median age of head-of-household is 35, and his median income is \$13,000. The most prevalent occupational types were professional/technical (18%), laborer (13%), and business (11%).

Although most of its visitors are on vacation (64%), nearly one-quarter are day-use visitors (compared to four percent at the Myrtle Beach Pavilion). More than half of those on an overnight or vacation trip stay at the campgrounds. Like the pavilion users, more than 60 percent of the respondents stay for less than a week.

Although three-fourths of the visitors do not use Myrtle Beach State Park at other times during this year for either the weekend or a day, more than half have taken other vacation trips to this destination. In general, few of these respondents have visited other South Carolina beaches.

## Beach Use Survey

The typical Myrtle Beach State Park visitor drove to the area and came from more than 90 miles away. Nearly two-thirds were from other states, again predominately North Carolina.

### Huntington Beach State Park

The profile of the Huntington Beach State Park visitor is very similar to his counterpart at Myrtle Beach State Park: The typical household head earns \$14,000, is 33 years of age, and is employed in professional/technical, business, management, or the Armed Forces.

Approximately 70 percent of the respondents are vacationing in the park, and 20 percent there for the day. Campground accommodations were most popular. Nearly half of the visitors stay for more than one week.

Most visitors do not make week-end trips or come for the day, but more than half have made at least one other vacation trip to this beach this year. Their use of other South Carolina beaches is infrequent. Four-fifths of the visitors' primary residences are more than 90 miles away, 60 percent from out of state, particularly North Carolina and Georgia.



# Beach Use Survey

## Part Four

### Charleston Area Beaches

Because of their proximity, Sullivans Island, Isle of Palms, and Folly Beach may be considered simultaneously. Demographically, their beach users' profiles are quite similar: median age, 37-39; median income, \$13,700-\$17,800 (Sullivans Island having the highest median income of the nine beaches surveyed), and employment in professional/technical, business, or the Armed Forces. All three of these beaches have slightly higher proportions of military users than other surveyed beaches as a result of military installations located in the Charleston area.

All three beaches are primarily day-use destinations for residents of the Charleston Standard Metropolitan Statistical Area (SMSA). Most respondents indicate that they are less than 30 miles from home.

Unlike the other beaches, there is a high frequency of repeated day use, with some 40 percent of the respondents visiting the beach more than ten times this year. Also, they travel to other South Carolina beaches more frequently than other respondents, but primarily for day use.

In sum, Sullivans Island, Isle of Palms, and Folly Beach currently are

almost exclusively Charleston resident beaches, experiencing relatively little tourism traffic from elsewhere in the State or from out of state.

### Edisto Beach State Park

The typical Edisto Beach State Park visitor is 36 years old, earns \$13,500 annually, and is employed in professional/technical occupations, business, or the military. Seventy-one percent of the respondents are at the beach just for the day. Most are between 30 and 60 miles from home.

Fewer than half of the respondents made day use of Edisto Beach State Park at other times during the year, and fewer than ten percent visited the beach on overnight or vacation trips. Trips to other South Carolina beaches, other than day use, were also infrequent.

Charlestonians comprise the largest percentage of visitors (64%) to Edisto, and only 14 percent of visitors are from out of state. The presence of so many Charleston residents at a beach location an hour's drive away is a strong indication of the existing pressure on the local Charleston beaches for day-use access.

## Part Four

# Beach Use Survey

### Hilton Head Island

Visitors interviewed on Hilton Head Island at the public beach area near Coligny Circle were from families whose head-of-household's median age was 30. More than half of the respondents declined to reveal their household income, but the median of those who did is \$15,000. It might be assumed from their occupational distribution that the actual median income of their households is much higher than those reported. Nearly 73% of these household heads were employed in professional/technical fields, 16% in business and 11% in management.

Forty-five percent of the respondents come to the beach for the day only, 40 percent are on vacation, and 15 percent at the beach as part of an overnight trip. Most of the vacationers stay in a hotel or motel (49%), but many are accommodated in a vacation home (23%) or the home of a friend or relative (17%). Overnight accommodation patterns differ from vacation accommodations. The largest number of overnight visitors stay with friends or relatives (39%), but nearly the same proportion stayed in a hotel or motel (33%).

More than 60 percent of the visitors using this beach are more than 90 miles from home, and most did not use this or other South Carolina beaches at other times this year. Only 30 percent of the respondents are from South Carolina, 30 percent are from Georgia, and 40 percent are from other states.

# Beach Use Survey

## Part Four

### Beach User Profile By Type Of Beach Use

Respondents at each beach area were asked if their visits were for the day, overnight, or vacation. A cross-tabulation of the data base for each beach area was run for all questions according to these three categories of use. The sampling of nine beaches included approximately equal numbers of vacationers and day-users, but only one-fourth as many respondents at the beach overnight.

Demographically the three groups are quite similar, with median age of overnight visitor household heads the youngest at 33 years, and median age of vacationer household heads the oldest at 39 years. With respect to income, as might be expected, day-use household median income was the lowest, \$12,600, as compared to overnight visitors (\$13,100) and vacationers (\$14,200). The average party size for all three groups was approximately four, and most groups were composed of family members.

#### Overnight Visitors

For those visitors who stay in the beach area overnight, the largest per-

centage stay in hotels or motels (32%), followed by campgrounds (26%), homes of friends or relatives (24%), and cottages or vacation homes (12%). Most drive to the beach area and are more than 90 miles from their permanent residence.

Nearly half of all overnight visitors made other weekend trips to the same beach in 1975. Nearly 13 percent had come four or more times. Most, however, did not vacation at that particular beach area or use it as a day-use destination area. More than 85 percent of overnight visitors did not use other South Carolina beaches for any purpose during the year.

#### Vacationers

Nearly all vacationers drive to the beach from homes more than 90 miles away. During their visit, 34 percent stay with friends or relatives, and 10 percent at cottages or vacation homes. Most vacationers (55%) are at the beach for less than one week, but the average length of stay is 6.3 nights.

Most vacationers (62%) made other vacation trips to the same beach during the year, but they had not visited that beach or any other South Carolina beach for a weekend trip or day-use.

### Day Visitors

Those visitors who are at the beach just for the day are much closer to their permanent residence. The average distance from home is 23 miles; more than 40% of day visitors are 15 miles or less from home.

Day visitors are highly unlikely to use the same beach or other state beaches for vacations or overnight trips; however, they often visit the same beach for the day and frequent other South Carolina beaches for the day as well. More than one-fourth of the respondents visited the same beach 20 or more times in 1975, averaging 5 visits to the same beach. Nearly half of all day visitors indicate they make day visits to other South Carolina beaches as well.

# Beach Use Survey

## Part Four

### EXHIBIT IV-3

#### BEACH USER PROFILE BY TYPE OF BEACH USE

<u>TYPE OF USE</u>	<u>Overnight</u>	<u>On Vacation</u>	<u>Just for the day</u>
Overnight	100.0	-	-
On Vacation	-	100.0	-
Just for the day	-	-	100.0
No answer	-	-	-
(Respondents)	(127)	(577)	(587)
<u>OVERNIGHT ACCOMMODATIONS</u>			
Campground	26.0	-	-
Hotel/motel	32.3	-	-
Cottage/vacation home	11.8	-	-
Friend/relative home	23.6	-	-
Other	4.7	-	-
No answer	1.6	100.0	-
(Respondents)	(127)	(1)	(-)
<u>VACATION - LENGTH OF STAY</u>			
1-2 nights	-	16.8	-
Less than a week	-	38.6	-
One week	-	27.6	-
More than a week	-	15.8	-
No answer	100.0	1.2	-
(Respondents)	(1)	(577)	-
<u>VACATION ACCOMMODATIONS</u>			
Campground	-	26.5	-
Hotel/motel	-	34.3	-
Cottage/vacation home	-	10.2	-
Friend/relative home	-	12.8	-
Other	-	.9	-
No answer	100.0	15.3	-
(Respondents)	(1)	(577)	(-)

## Beach Use Survey

## EXHIBIT IV-3

## BEACH USER PROFILE BY TYPE OF BEACH USE (con't.)

	<u>Overnight</u> <u>%</u>	<u>On Vacation</u> <u>%</u>	<u>Just for the day</u> <u>%</u>
<u>DISTANCE FROM PERMANENT RESIDENCE</u>			
1-5 miles	1.6	.9	15.5
6-15 miles	3.9	1.0	25.6
16-30 miles	3.9	.9	17.2
31-60 miles	17.3	.9	15.5
61-90 miles	6.3	3.1	3.2
90+	65.4	92.9	22.3
No answer	1.6	.3	.7
(Respondents)	(127)	(577)	(587)
<u>FREQUENCY OF WEEKEND VISITS</u> <u>THIS YEAR</u>			
0	52.8	83.0	87.6
1	18.9	8.5	5.6
2	11.8	4.3	2.6
3	3.9	1.4	.9
4+	12.6	2.8	3.2
No answer	-	-	.2
(Respondents)	(127)	(577)	(587)
<u>FREQUENCY OF VACATION TRIPS TO</u> <u>THIS BEACH THIS YEAR</u>			
0	82.7	37.4	92.2
1	9.4	39.3	4.4
2	4.7	14.0	1.5
3	-	5.2	.2
4+	3.1	4.0	1.5
No answer	-	-	.2
(Respondents)	(127)	(577)	(587)

# Beach Use Survey

## Part Four

### EXHIBIT IV-3

#### BEACH USER PROFILE BY TYPE OF BEACH USE (con't.)

	<u>Overnight</u> <u>1</u>	<u>On Vacation</u> <u>1</u>	<u>Just for the day</u> <u>1</u>
<u>FREQUENCY OF DAY USE AT THIS BEACH THIS YEAR</u>			
0	70.1	92.2	16.4
1-5	18.9	2.4	34.1
6-10	3.9	1.0	11.8
11-20	.8	.7	11.9
20+	6.3	3.6	25.7
No answer	-	-	.2
(Respondents)	(127)	(577)	(587)
<u>FREQUENCY OF WEEKEND TRIPS THIS YEAR TO OTHER SC BEACHES</u>			
0	85.8	92.2	85.7
1	8.7	4.7	7.3
2	3.1	2.1	3.1
3	-	.3	1.7
4+	2.4	.7	2.2
No answer	-	-	-
(Respondents)	(127)	(577)	(587)
<u>FREQUENCY OF VACATION TRIPS TO OTHER SC BEACHES THIS YEAR</u>			
0	89.8	91.0	93.4
1	6.3	4.9	4.9
2	3.1	2.4	.7
3	.8	1.4	.2
4+	-	.3	.9
No answer	-	-	-
(Respondents)	(127)	(577)	(587)

## Beach Use Survey

## EXHIBIT IV-3

## BEACH USER PROFILE BY TYPE OF BEACH USE (con't.)

	<u>Overnight</u> <u>X</u>	<u>On Vacation</u> <u>X</u>	<u>Just for the day</u> <u>X</u>
<u>FREQUENCY OF DAY-USE AT OTHER</u> <u>SC BEACHES THIS YEAR</u>			
0	86.6	93.9	56.2
1-5	7.9	3.8	24.9
6-10	2.4	1.2	8.0
11-20	.8	.5	3.1
20+	2.4	.5	7.8
No answer	-	-	-
(Respondents)	(127)	(577)	(587)
<u>PARTY SIZE</u>			
1	12.6	7.1	9.9
2	31.5	23.2	28.5
3	14.2	14.0	14.3
4	16.5	19.9	18.8
5	9.4	12.5	7.7
6	6.3	11.3	5.1
7	1.6	4.9	4.6
8	.8	2.1	2.0
9+	6.3	5.0	8.7
No answer	.8	-	.3
(Respondents)	(127)	(577)	(587)
<u>PARTY COMPOSITION</u>			
Friends	18.1	12.3	30.9
Family	66.9	67.9	46.4
Both	14.2	18.5	22.0
No answer	.8	1.2	.7
(Respondents)	(127)	(577)	(587)



# Beach Use Survey

## Part Four

### EXHIBIT IV-3

#### BEACH USER PROFILE BY TYPE OF BEACH USE (con't.)

	<u>Overnight</u> <u>%</u>	<u>On Vacation</u> <u>%</u>	<u>Just for the day</u> <u>%</u>
<u>AGE OF HOUSEHOLD HEAD</u>			
-25	15.7	14.6	20.8
25-34	35.4	24.1	24.2
35-44	21.3	26.2	23.7
45-54	14.2	23.7	23.2
55-64	9.4	7.3	6.1
65+	1.6	2.9	1.4
No answer	2.4	1.2	.7
(Respondents)	(127)	(577)	(587)
<u>HOUSEHOLD INCOME</u>			
-5,000	3.9	3.5	9.2
5-10,000	22.8	19.2	21.1
10-15,000	30.7	25.8	27.6
15-25,000	23.6	27.9	22.8
25-50,000	8.7	11.6	7.8
50,000+	2.4	.9	.7
No answer	7.9	11.1	10.7
(Respondents)	(127)	(577)	(587)

Source: Hartzog, Lader & Richards, South Carolina  
Beach Use Survey, August, 1975.

## Part Four

# Beach Use Survey

### Beach User Profile By Income Class

Surprisingly few differences are apparent in the segmentation of beach use by income class. Most (81%) fall into income categories from \$5,000 to \$25,000. The \$15,000 and up income class, however, showed slightly longer lengths-of-stay and high frequencies of use.

Overnight accommodations used by respondents are noticeably affected by income. Although more than one quarter of the \$5,000-to-\$15,000 income group stay at campgrounds, not one respondent in the \$15,000+ category stayed in a campground. This group is much more likely to be accommodated in a cottage or vacation home.

Vacation accommodations are somewhat less affected by income than overnight accommodations. The largest percentage of each income group, except for the lower and upper extremes, stay in a hotel or motel, and the second most common accommodation is campgrounds.

Lower income groups tend to come from areas less distant from the beach. Thus, there is a direct correlation between distance-from-home, length-of-stay and income.

# Beach Use Survey

## Part Four

### EXHIBIT IV-4

#### BEACH USER PROFILE BY INCOME CLASS

	<u>Under 5,000</u>	<u>5,000-10,000</u>	<u>10,000-15,000</u>	<u>15,000-25,000</u>	<u>25,000-50,000</u>	<u>50,000+</u>
<u>TYPE OF USE</u>						
Overnight	6.3	11.0	11.0	9.2	8.9	25.0
On Vacation	25.3	42.0	42.5	49.4	54.0	41.7
Just for the day	68.4	47.0	46.2	41.1	37.1	33.3
No answer	-	-	.3	.3	-	-
(Respondents)	(79)	(264)	(351)	(326)	(124)	(12)
<u>OVERNIGHT ACCOMMODATIONS</u>						
Campground	40.0	24.2	27.5	-	-	-
Hotel/motel	20.0	41.4	27.5	25.8	16.7	-
Cottage/vacation home	-	3.4	12.5	32.3	33.3	33.4
Friend/relative home	20.0	27.6	25.0	16.1	16.7	33.3
Other	20.0	3.4	2.5	25.8	8.3	-
No answer	-	-	.5	-	25.0	33/3
(Respondents)	(5)	(29)	(40)	(31)	(12)	(3)
<u>VACATION - LENGTH OF STAY</u>						
1-2 nights	15.0	21.6	12.7	13.0	23.6	-
Less than a week	30.0	39.6	44.7	37.9	33.8	40.0
One week	30.0	24.3	30.7	28.0	17.6	20.0
More than a week	15.0	13.6	10.7	20.5	20.6	40.0
No answer	10.0	.9	1.2	.6	4.4	-
(Respondents)	(20)	(111)	(150)	(161)	(68)	(5)
<u>VACATION ACCOMMODATIONS</u>						
Campground	25.0	27.0	30.7	26.7	26.5	20.0
Hotel/motel	15.0	28.8	32.7	37.9	35.3	20.0
Cottage/vacation home	15.0	5.5	8.7	8.7	13.2	40.0
Friend/relative home	15.0	15.3	10.6	14.9	7.3	-
Other	5.0	.9	.6	.6	-	-
No answer	25.0	22.5	16.7	11.2	17.7	20.0
(Respondents)	(20)	(111)	(150)	(161)	(68)	(5)

# Part Four

# Beach Use Survey

## EXHIBIT IV-4

### BEACH USER PROFILE BY INCOME CLASS (con't.)

	<u>Under 5,000</u>	<u>5,000-10,000</u>	<u>10,000-15,000</u>	<u>15,000-25,000</u>	<u>25,000-50,000</u>	<u>50,000+</u>
	%	%	%	%	%	%
<u>DISTANCE FROM PERMANENT RESIDENCE</u>						
1-5 miles	21.5	6.4	7.1	5.5	7.3	8.3
6-15	16.5	15.9	12.0	12.3	12.1	-
16-30	11.4	8.0	8.0	11.0	4.8	-
31-60	12.7	8.7	8.8	7.1	8.8	41.7
61-90	-	5.3	3.1	2.5	3.2	16.7
90+	35.4	53.8	60.4	61.3	64.5	33.3
No answer	2.5	1.9	.6	.3	-	-
(Respondents)	(79)	(264)	(351)	(326)	(124)	(12)
<u>FREQUENCY OF WEEKEND VISITS THIS YEAR</u>						
0	86.1	80.7	80.6	81.6	79.8	66.7
1	7.6	8.3	8.8	8.9	9.7	-
2	-	4.5	5.1	4.0	4.0	16.7
3	-	1.5	1.1	1.8	3.2	-
4+	6.3	4.9	4.0	3.4	2.4	16.7
No answer	-	-	.3	.3	.8	-
(Respondents)	(79)	(264)	(351)	(326)	(124)	(12)
<u>FREQUENCY OF VACATION TRIPS TO THIS BEACH THIS YEAR</u>						
0	81.0	69.3	64.4	63.8	60.5	50.0
1	13.9	17.8	23.4	22.7	22.6	25.0
2	-	8.3	7.1	8.6	8.1	-
3	-	2.7	1.7	2.5	6.5	-
4+	-	1.9	3.1	2.5	1.6	25.0
No answer	5.1	-	.3	-	.8	-
(Respondents)	(79)	(264)	(351)	(326)	(124)	(12)

# Beach Use Survey

## Part Four

### EXHIBIT IV-4

#### BEACH USER PROFILE BY INCOME CLASS (con't.)

	<u>Under 5,000</u>	<u>5,000-10,000</u>	<u>10,000-15,000</u>	<u>15,000-25,000</u>	<u>25,000-50,000</u>	<u>50,000+</u>
<u>FREQUENCY OF DAY-USE AT THIS BEACH THIS YEAR</u>						
0	34.2	51.9	56.7	59.2	63.7	41.7
1-5	15.2	22.3	19.1	16.6	12.9	25.0
6-10	12.7	6.4	6.0	6.7	2.4	-
11-20	11.4	7.6	4.0	6.4	3.2	-
20+	26.6	11.7	14.0	11.0	15.9	33.3
No answer	-	-	.3	-	.8	-
(Respondents)	(79)	(264)	(351)	(326)	(124)	(12)
<u>FREQUENCY OF WEEKEND TRIPS THIS YEAR TO OTHER SC BEACHES</u>						
0	91.1	88.3	90.6	86.2	82.3	100.0
1	5.1	6.8	3.7	8.9	10.5	-
2	2.5	2.7	2.8	2.8	1.6	-
3	-	.8	.9	.6	3.2	-
4+	1.3	1.5	1.7	1.5	2.4	-
No answer	-	-	.3	-	-	-
(Respondents)	(79)	(264)	(351)	(326)	(124)	(12)
<u>FREQUENCY OF VACATION TRIPS TO OTHER SC BEACHES THIS YEAR</u>						
0	97.4	93.6	90.6	91.7	90.3	100.0
1	-	4.2	5.7	6.1	5.6	-
2	1.3	2.3	1.7	1.2	1.6	-
3	1.3	-	1.1	.3	.8	-
4+	-	-	.6	.6	1.6	-
No answer	-	-	.3	-	-	-
(Respondents)	(79)	(264)	(351)	(326)	(124)	(12)

# Part Four

# Beach Use Survey

## EXHIBIT IV-4

### BEACH USER PROFILE BY INCOME CLASS (con't.)

	<u>Under 5,000</u>	<u>5,000-10,000</u>	<u>10,000-15,000</u>	<u>15,000-25,000</u>	<u>25,000-50,000</u>	<u>50,000+</u>
<u>FREQUENCY OF DAY-USE AT OTHER</u> <u>SC BEACHES THIS YEAR</u>	<u><math>\frac{\%}{\%}</math></u>	<u><math>\frac{\%}{\%}</math></u>	<u><math>\frac{\%}{\%}</math></u>	<u><math>\frac{\%}{\%}</math></u>	<u><math>\frac{\%}{\%}</math></u>	<u><math>\frac{\%}{\%}</math></u>
0	74.7	76.5	74.9	76.7	77.4	58.3
1-5	10.1	14.0	15.1	13.5	11.3	16.7
6-10	10.0	4.5	4.0	3.7	4.0	8.3
11-20	1.3	1.5	2.0	1.5	.8	8.3
20+	3.8	3.4	3.7	4.6	6.5	8.3
No answer	-	-	.3	-	-	-
(Respondents)	(79)	(264)	(351)	(326)	(124)	(12)

Source: Hartzog, Lader & Richards, South Carolina Beach Use Survey, August, 1975.

COASTAL ZONE  
INFORMATION CENTER

FEB 1 1978



## Part Five

### Environmental Review

As part of this study, the firm's mandate was to synthesize existing, and sometimes conflicting, data to determine environmental characteristics and constraints of South Carolina beaches and adjacent waters. Sources include published and unpublished studies and reports, site visits, aerial photographs /1/, and correspondence with State and local experts. No original scientific research or investigation was authorized.

### Summary

This environmental review compares the State's beaches in terms of their environmental suitability for increased recreational use. Present development was considered only insofar as it relates to environmental factors. Particular beaches, therefore, may be assigned a high rating based on environmental factors although market, legal, or other considerations would suggest otherwise.

South Carolina has a relatively mild climate and good air and water quality. Although the industrial areas of Charleston

## Environmental Review

and Georgetown are potential sources of air pollution, predominant onshore winds protect beach areas most of the year.

Pollution of tidal waters occurs almost exclusively in the vicinity of the more highly populated areas and is due to the dumping of treated and untreated municipal wastes into estuaries and their tributaries. The Beaufort River, Charleston Harbor and its tributaries, and Winyah Bay are the three primary areas where pollution has already had detrimental effects on shell fishing and sport fishing. The quality of beach sand is somewhat better in the southern part of the state.

The comparative recreational suitability of the State's beaches, in terms of environmental factors, appears in Exhibit V-1.

Hilton Head Island, Kiawah Island, Litchfield Beach, and the area between North Ocean Forest and Windy Hill in Myrtle Beach are most suitable for beach access and recreation. The next most suitable are Fripp Island, Hunting Island, Edisto Island, Seabrook Island, Sullivan's Island, Isle of Palms, North Island, Debidue Beach, Huntington Beach State Park, Myrtle Beach to Ocean Forest, and Waties Island.



# Environmental Review

## Part Five

Turtle Island, Bay Point Island, St. Phillips Island, Edingsville Beach, and Botany Bay Island, Morris Island, Cape Romain Migratory Bird Refuge, and Murphy Island are not suitable for beach access and recreation within this study's environmental criteria.

Based on these criteria, ten environmental factors were examined:

- \* erosion/accretion
- \* littoral currents
- \* climate
- \* near-shore profile
- \* water quality
- \* air quality
- \* beach morphology
- \* fish and shellfish habitat
- \* wetlands
- \* wildlife habitat

*Potential  
Impact Area*

Review and analysis of environmental features resulted in a relative rating of each beach area. The suitability of the recreation activities offered at each beach has been categorized from "least" to "most suitable". The composite, finally, has been summarized in an overall suitability assessment of the State's beaches. (Exhibit V-1)

Available information is more complete for some beaches than for others. Recreational suitability judgments are, therefore, subject to refinement and updating. /2/

## Methodology

To determine the relative recreational suitability of the State's beaches, two criteria were used:

- \* Environmental Characteristics - The decision to use a particular area for marine recreation will be influenced by the environmental characteristics of that area, and
- \* Adverse Environmental Impact - Increased access to beach areas may have an adverse environmental impact on that area.

Four basic types of coastal recreation were considered: swimming/sunbathing, sport fishing, power boating, and sail boating.

## EXHIBIT V-1

RELATIVE COMPARISON OF SOUTH CAROLINA BEACHES  
BASED ON ENVIRONMENTAL CONSTRAINTS TO RECREATIONAL USE

LOCATION	ENVIRONMENTAL SUITABILITY FOR BEACH ACCESS				LOCATION	ENVIRONMENTAL SUITABILITY FOR BEACH ACCESS			
	POOR	FAIR	GOOD	EXCEL- LENT		POOR	FAIR	GOOD	EXCEL- LENT
Waties Island			●		Folly Island		●		
Crescent Beach to Cherry Grove		●			Kiawah Island				●
N. Ocean Forest to Windy Hill				●	Seabrook Island			●	
Myrtle Beach to Ocean Forest			●		Edingsville Beach & Botany Bay Island	●			
Garden City to Surfside Beach		●			Edisto Island			●	
Huntington Beach State Pk.			●		Harbor Island		●		
Litchfield Beach				●	Hunting Island			●	
Pawleys Island		●			Fripp Island			●	
Debidue Beach			●		Capers & Pritchards Is.		●		
North Island			●		St. Phillips Island	●			
South Island		●			Bay Point Island	●			
Cedar & Murphy Islands	●				Hilton Head Island				●
Cape Romain Bird Refuge	●				Daufuskie Island		●		
Dewees & Capers Islands		●			Turtle Island	●			
Isle of Palms			●						
Sullivans Island			●						
Morris Island	●								

## South Carolina's Coastal Zone

As EXHIBIT V-2 illustrates, South Carolina's coast is 187 miles long, and its shoreline includes 281 miles of beaches. Charleston County has the longest coastline in the State (78.9 miles); Jasper County has less than three miles of shorefront. The coastlines of Horry (33.0 miles), Georgetown (36.2 miles), and Beaufort (36.1 miles) are of approximately equal length.

It can also be seen in EXHIBIT V-2 that South Carolina's coastal zone encompasses 503,000 acres of tidal marsh. Tidal streams and estuaries cover another 450,000 acres. The southern coastal counties -- Beaufort, Jasper, Colleton, and Charleston -- have the greatest acreage concentration of wetlands.

## Climate

The climate of South Carolina's coast, oriented southwest to northwest, is strongly influenced by the ocean waters and, particularly, the Gulf Stream. Air over coastal waters is cooler in summer and warmer in winter than that over land, dampening coastal temperatures.

### EXHIBIT V-2

#### COASTAL ZONE STATISTICS IN SOUTH CAROLINA

##### South Carolina

##### Coastline length (in miles):

Horry County.....	33.0
Georgetown County.....	36.2
Charleston County.....	78.9
Colleton County.....	-
Beaufort County.....	36.1
Jasper County.....	2.8

TOTAL..... 187 miles

Beachfront shoreline length..... 281 miles

Tidal shoreline length.....2,879 miles  
(ocean, bays & streams)

Tidal streams and estuaries.....450,000 acres

##### Tidal marsh acreage:

Horry County.....	1,355
Georgetown County.....	67,200
Berkeley County.....	17,600
Colleton County.....	60,160
Dorchester County.....	1,500
Charleston County.....	153,478
Beaufort & Jasper Counties.....	201,600

TOTAL..... 502,893 acres

Sources: Office of the Governor, Division of Administration,  
1972, State Development Plan, Coastal Plains Area,  
Fiscal Year 1972-73.

U.S. Army Corps of Engineers, 1971, National  
Shoreline Study, Regional Inventory Report,  
South Atlantic Division, Atlanta, Georgia.

## Part Five

For example, the daily temperature range along the State's coast in July is about 13 degrees, compared to 21 degrees in the center of the State. In January the daily range along the coast is about 16 degrees, versus 23 degrees inland.

Overall, the coastal climate is extremely mild. Temperatures range from monthly averages of 47 to 80 degrees.

The coastal zone is relatively wet. Forty-eight to 53 inches of precipitation fall annually. During October and November, the driest period, little cyclonic storm activity occurs. Rainfall then increases gradually, reaching a peak in March when low pressure and cold front activity are at a maximum. A general decrease in precipitation follows, the relative dry period occurring from late April through early June. Late June through early September is wet. Thunderstorm and shower activity peaks in July, the wettest summer month.

## Environmental Review

Severe weather along the coast comes in the form of violent thunderstorms, tornadoes, and hurricanes. Although thunderstorms are common in summer, the most violent accompany squall lines and active cold fronts in the spring. Tropical storms or hurricanes affect the State about one of every two years. Most showers are tropical storms which do little damage.

Climatic summaries of four representative areas along the coast are shown in Exhibits V-3 (Myrtle Beach), V-4 (Georgetown), V-5 (Charleston), and V-6 (Beaufort).

The weather throughout the coast is temperate and encourages outdoor activity most of the year. The most pleasant meteorologic conditions occur in April, May, June, September, and October, when the air temperature is in the 70s and there is little precipitation.

# Environmental Review

## Part Five

EXHIBIT V-3

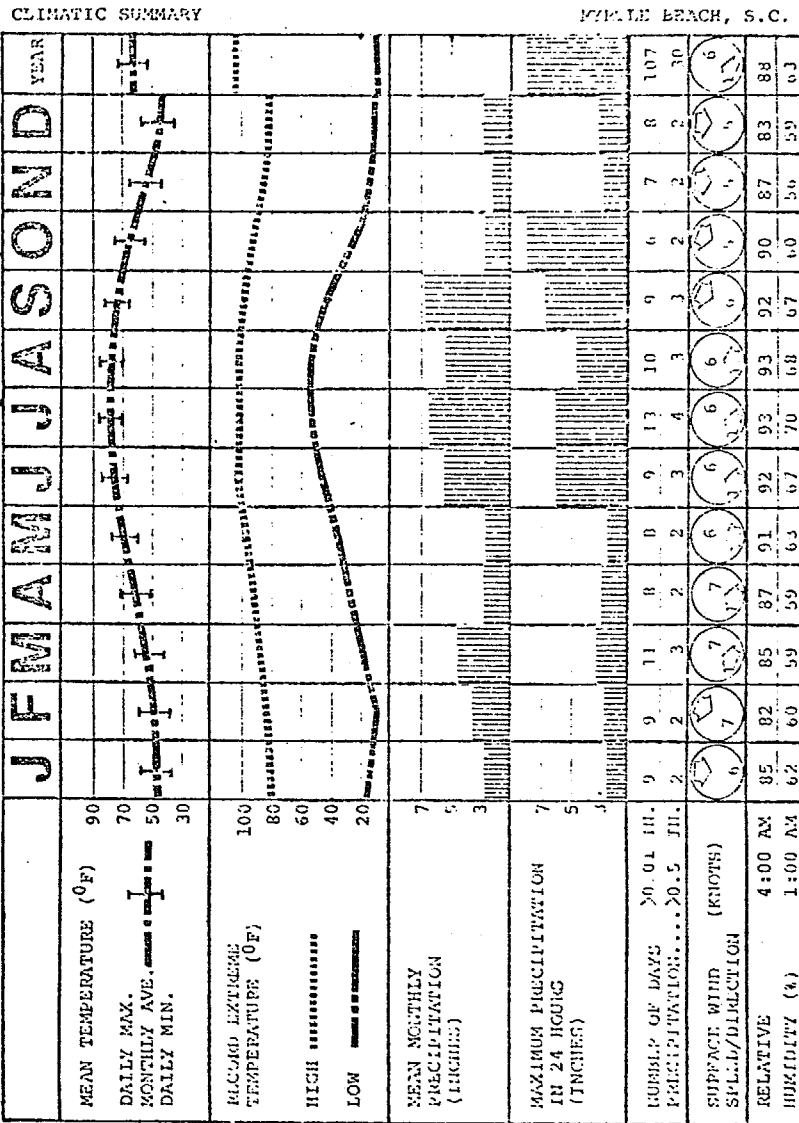
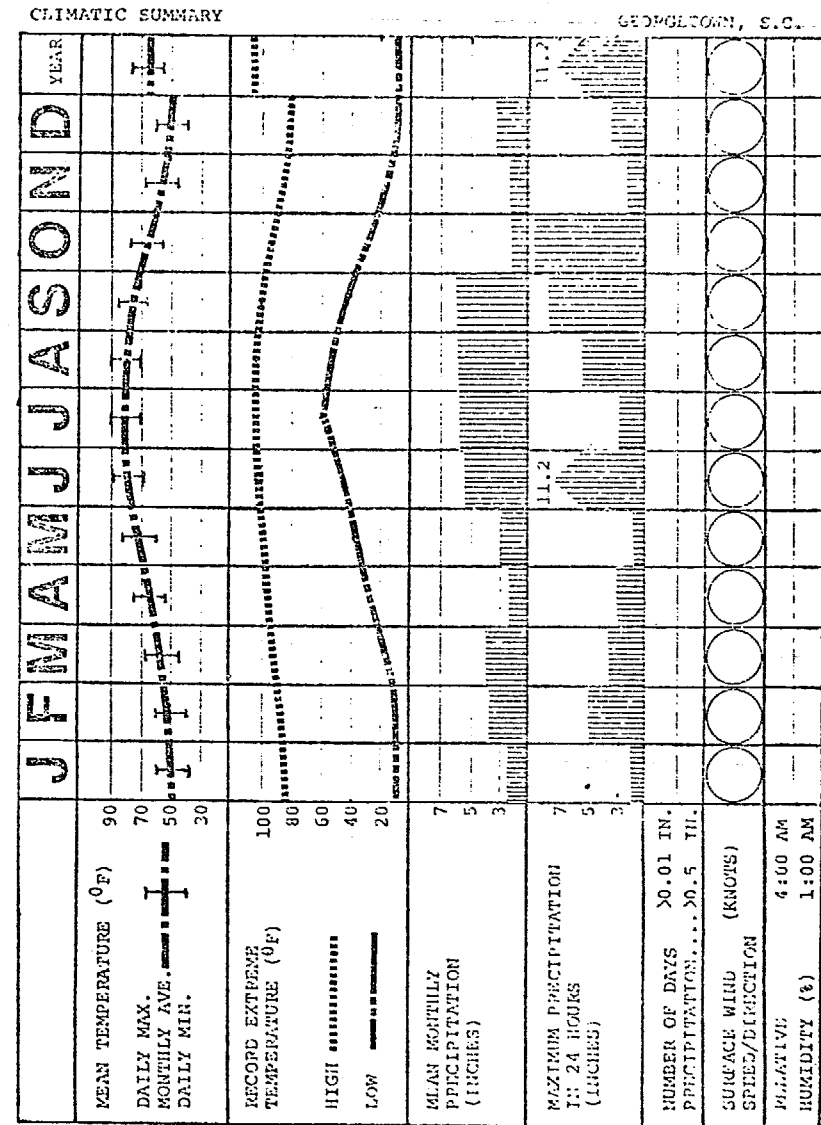
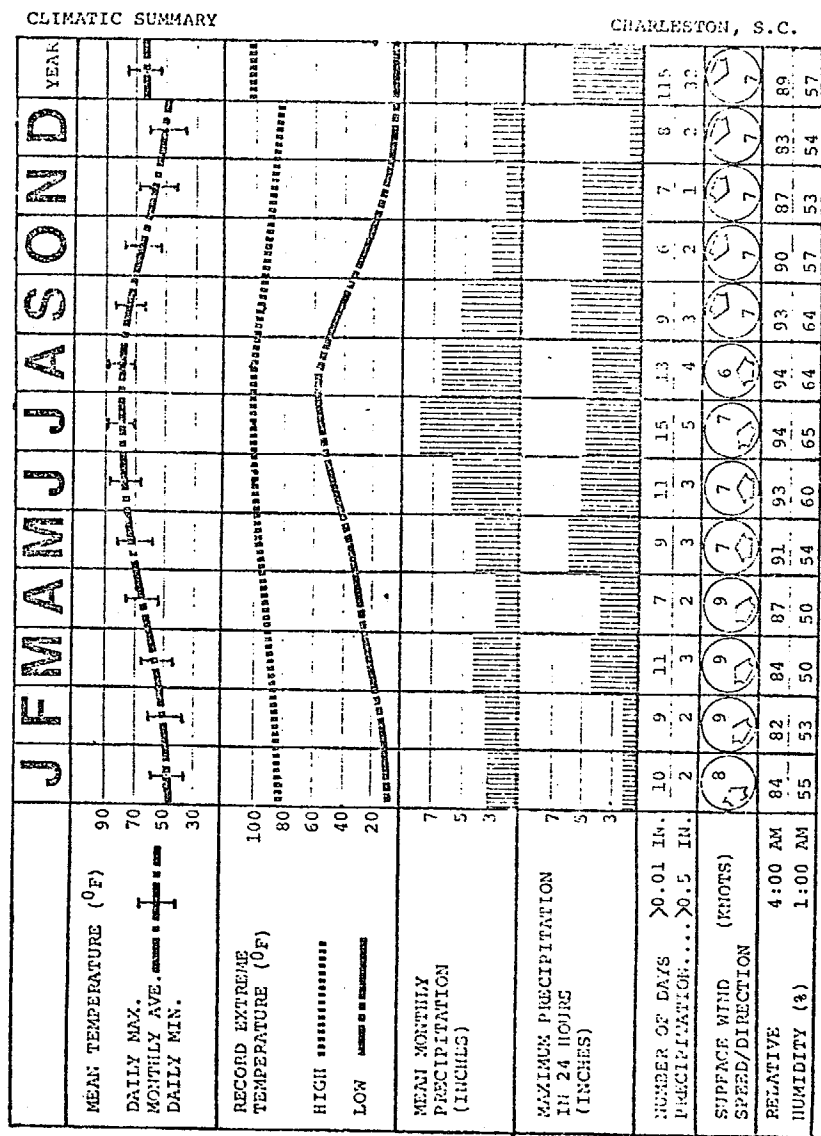


EXHIBIT V-4



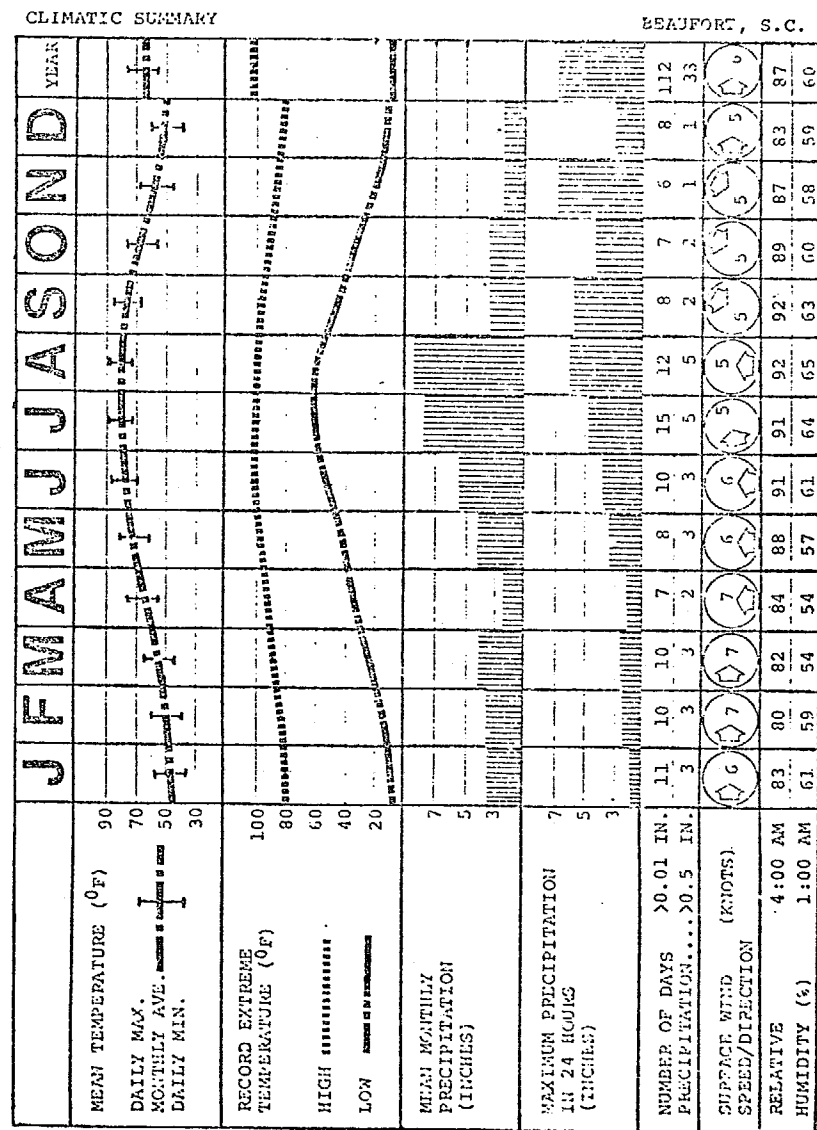
# Part Five

EXHIBIT V-5



# Environmental Review

EXHIBIT V-6



# Environmental Review

## Part Five

### Air Quality

Air pollution is not a serious problem for any of the State's beaches at this time. The industrial areas of Charleston and Georgetown are potentially threatened (Maps 1 and 2), although predominant onshore winds protect beach areas most of the year.

Potentially, there are numerous sources of air pollutants. Motor vehicles are the chief contributor of the nitrogen oxides, carbon monoxides, and organic gases. Industry, including fossil-fueled electricity plants, is the chief source of sulfur dioxide. Mining, agriculture, lumber operations, incinerators and the automobile contribute most suspended particulates.

Coastal air pollution is of special concern in that, in addition to damaging the recreational environment, it presents a unique health hazard. Sulfur dioxide pollution, mainly a product of fossil-fueled electric plants, is more dangerous in coastal fog areas. Chemical reactions there can produce a weak solution of sulfuric acid, a danger to humans, animals, and plants, and a damaging corrosive agent to many materials.

### Water Quality

The South Carolina Department of Health and Environmental Control classifies tidal waters within one of three categories:

- SA: Waters suitable for shellfishing for market purpose and any other uses. Suitable also for uses requiring water of lesser quality. (highest quality for saline waters)
- SB: Waters suitable for bathing and any other uses except shellfishing for market purposes. Suitable also for uses requiring water of lesser quality.
- SC: Waters suitable for crabbing, commercial fishing and other usages except bathing or shellfishing for market purposes. (lowest quality for saline waters).

As of 1970, shellfishing for marketing purposes was prohibited in 49,000 acres of the State's marshlands due to excessive concentrations of coliform bacteria. Pollution of tidal waters occurs almost

## Part Five

exclusively in the vicinity of the more highly populated areas, such as Charleston, and is due to the dumping of treated and untreated municipal wastes into estuaries and their tributaries. The Beaufort River, Charleston Harbor and its tributaries, and Winyah Bay are the three primary areas where water pollution has already had detrimental effects on shellfishing and sport fishing.

Dredging operations are another source of water degradation. 4.7 million cubic yards of material will be dredged from the Wando River as part of the proposed port development, and this will increase



## Environmental Review

turbidity in surrounding waters for an 8-to-10 month period. /4/ Periodic maintenance dredging in Charleston Harbor, as well as in other harbors along the coast, will cause short-term turbidity problems.

Thermal pollution is also a potential threat to coastal recreation. Power plant and industrial heat exchange systems may result in either the heating or cooling of coastal waters. Many biologic and physical characteristics of the discharge area can be affected. New currents and turbidity patterns may result.

Periodic "hot cycle", biocide and chemical flushings of industrial coolant systems are another problem. Their potential damage is a direct product of respective biocide or chemical toxicity levels, the severity of temperature variations, and the use of precautionary measures.

Such alterations are not necessarily harmful. There may be economic benefits resulting directly from thermal discharge of heated water which outweigh the costs of environmental change. But the risks are clear...and significant to the coast's recreational character.

Oil, in all of its forms, threatens the recreational beach. As a biocide, it destroys plant and animal life either



# Environmental Review

## Part Five

through the assimilation of its various constituent toxins or as a hydrophobic gel clogging pores and stomas. In crude form, it has an obnoxious smell and tenacious stain.

Oil finds its way into the coastal system from the bilges of boats, tankers, automobile crankcases, refineries, and other sources. It may be introduced directly, by natural seepage and oil spills, or indirectly by air pollution, sewerage disposal, or surface runoff.

Refined oil has a greater biocide impact than crude. Thus, the aggregate impact of small spills from automobile crankcases may be more dangerous than their volume suggest. Also, the use of various detergents in clean-up operations may have greater environmental consequences than oil spills themselves.

The most effective means of controlling petroleum, heavy metal, and other toxic pollution is at the source. No clean-up operation is thoroughly effective. The accumulation of residue may ultimately present a hazard of its own.



### Sand Quality

The quality of sand on the State's beaches is generally excellent for recreation purposes. Comparison of beach areas shows that sand in the southern part of the State is of the highest quality for typical beach recreation. Exhibit V-7 illustrates the relative grain size, shell, and mineral content of the sand.

South Carolina beaches, unlike those of Maine and the Pacific Northwest, are typically beaches of "emergence".

## EXHIBIT V-7

SAND QUALITY OF  
SOUTH CAROLINA BEACH AREAS

Area	Relative Grain Size	Shell Content	Heavy Mineral Content
North Carolina border to Santee River	medium	appreciable	3%
Santee River to Edisto River	small	little	7%
Edisto River to Georgia border	small	little	9%

They depend on sand transported by long-shore currents from neighboring beaches. Additional sand may be supplied by estuarine deposit or wave action. The net gain or loss of sand at a given site is known as the "sand budget". "Accretion" means a budget surplus; "erosion", a deficit.

There are two alternative approaches to beach maintenance and reclamation.

The first attempts to retain existing sand and to collect and save new material. Such a program is characterized by jetties, groins, or detached breakwaters placed to reduce longshore current velocity or wave action. The second alternative involves artificially changing the supply of sand. Sand acquired from offshore or inshore dredging projects is pumped onto the beach.

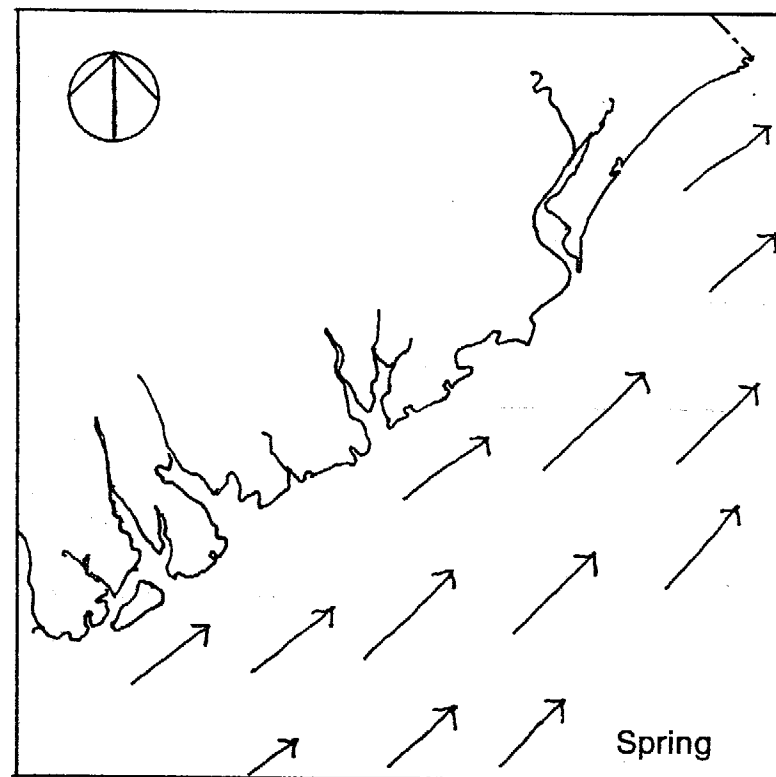
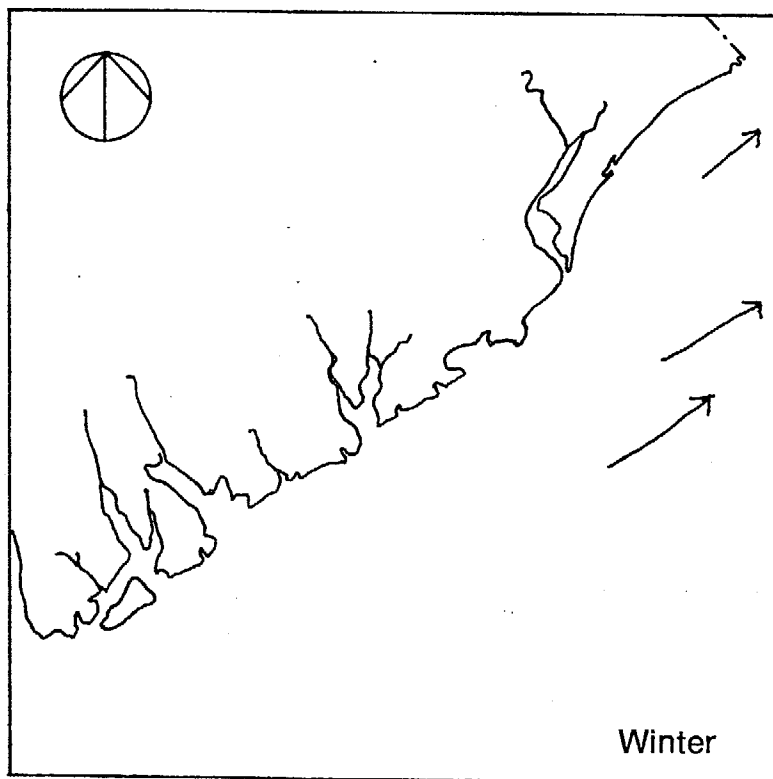
# Environmental Review

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Sand replacement is a temporary solution and involves serious supply problems. Jetties and breakwaters alter the beach's visual qualities and marine life. Small fish, oysters, barnacles, larvae, and various plant species often thrive in new niches, thereby providing forage for larger species.

Aeolian erosion and deposition also affect beach recreational profiles. Light sands and silt are easily blown and may be uncomfortable to sunbathers and swimmers. Sand of this nature is also apt to form "migrating" dunes.

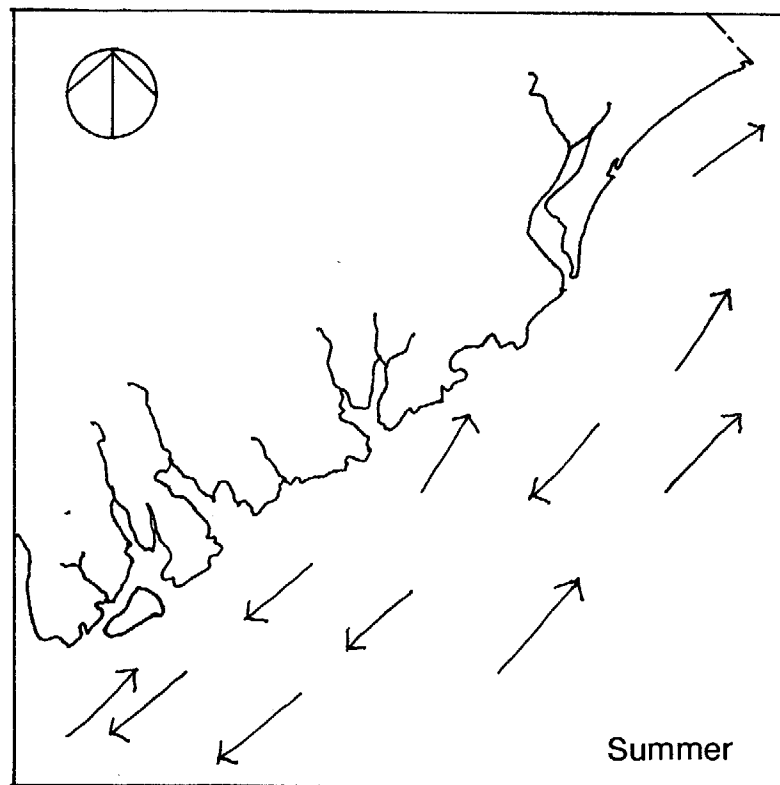
EXHIBIT V-8



## Part Five

### Offshore Currents /6/

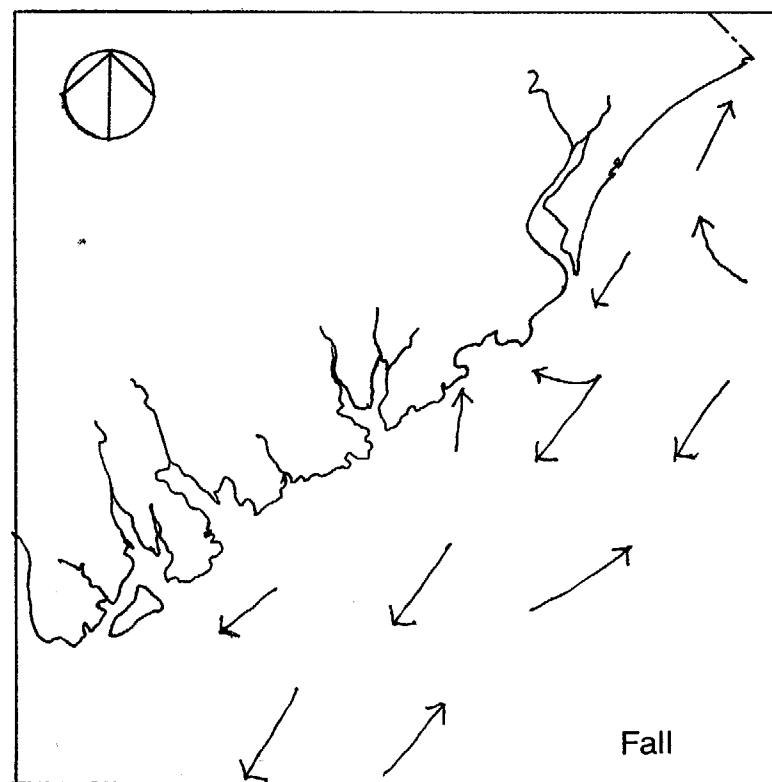
A northerly offshore current prevails off the South Carolina coast during winter and spring. (Exhibit V-8) Summer is a period of transition, when the current drift has a predominant northerly



## Environmental Review

tendency. In autumn a strong, persistent southwesterly drift prevails inshore of the northeasterly current over the outer part of the continental shelf.

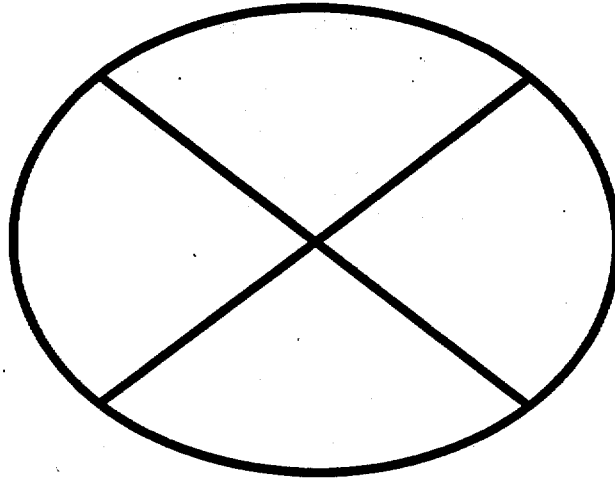
Undertows, littoral drifts, sea cusps and upwellings affect both sand





budgets and recreation safety. An upswelling may provide excellent fishing, but its cold water may be a bathing hazard. Areas near inlets with strong currents and eddies are fine prospects for lobstering, fishing, and surfing, but they may present a lethal hazard to the weak swimmer and careless boater. A flat bottom profile, absent strong currents, will be a haven for clammers and bathers, but may be home for sharks and rays during warm months.

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Myrtle Beach - Grand Strand

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## Part Five

### Waccamaw Region

#### Waties Island (Exhibit V-9) /7/

This northernmost island is presently undeveloped. Its northern third, as a result of exposure to Little River Inlet, is eroding. The southern two-thirds, however, have a well-developed, stable dune system.

Dunn Sound, between Waties Island and the mainland, is closed to shell-fishing. Hog Inlet to the south and adjacent offshore waters are listed as prime sport fishing areas. /8/ Waties Island exhibits a high suitability for recreational use, so long as existing wetlands and wildlife habitats are preserved..

## Environmental Review

### EXHIBIT V-9: Waties Island

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY										
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY									
	Swimming/ Sunbathing	Power Boating	Sail Boating	Fishing	Overall					
	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most
<u>EROSION/ACCRETION</u>										
Erosion										
Unstable	②									②
Stable										
Accretion										
<u>LITTORAL CURRENTS</u>										
Hazardous										
Non-hazardous										
<u>NEARSHORE PROFILE</u>										
Steep										
Gradual										
<u>WATER QUALITY</u>										
Good	②								②	②
Potential Pollution										
<u>AIR QUALITY</u>										
Good										
Potential Pollution										
<u>BEACH MORPHOLOGY</u>										
Unstable Dunes										
Narrow Beach										
Stable Dunes	②									②
Wide Beach	②									②
<u>FISH &amp; SHELLFISH HABITAT</u>										
High Quality									②	
Average Quality										
<u>WETLANDS</u>										
Potential Impact										②
<u>WILDLIFE HABITAT</u>										
Potential Impact										②

# Environmental Review

## Part Five

EXHIBIT V-10: Crescent Beach - Cherry Grove

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY					
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY				
	Swimming/ Sunbathing Least → Most	Power Boating Least → Most	Sail Boating Least → Most	Fishing Least → Most	Overall Least → Most
<u>EROSION/ACCRETION</u>					
Erosion	③				③
Unstable					
Stable					
Accretion					
<u>LITTORAL CURRENTS</u>					
Hazardous					
Non-hazardous					
<u>NEARSHORE PROFILE</u>					
Steep					
Gradual					
<u>WATER QUALITY</u>					
Good		③			③
Potential Pollution				③	
<u>AIR QUALITY</u>					
Good					③
Potential Pollution					
<u>BEACH MORPHOLOGY</u>					
Unstable Dunes	③				③
Narrow Beach	③				③
Stable Dunes					
Wide Beach					
<u>FISH &amp; SHELLFISH HABITAT</u>					
High Quality					
Average Quality				③	③
<u>WETLANDS</u>					
Potential Impact					③
<u>WILDLIFE HABITAT</u>					
Potential Impact					③

### Crescent Beach to Cherry Grove Beach (Exhibit V-10)

This beach has been intensively developed. A series of groins evidences past erosion. Dunes, for the most part, have been eliminated by construction. The dry beach is somewhat narrow and, hence, is not as suitable for recreation as the beaches between Myrtle Beach and Windy Hill Beach.



## Part Five

### North Ocean Forest to Windy Hill Beach (Exhibit V-11)

The beach and dunes in this area are more stable than those along the more heavily developed regions to the north and south. Existing roads across the wetlands backing the dune ridges will reduce the potential for further impact on the marshes.

This beach offers some of the best opportunity for additional public access in the northern part of the state. It is most suitable for recreational use.

## Environmental Review

### EXHIBIT V-11: N. Ocean Forest - Windy Hill

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY										
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY									
	Swimming/ Sunbathing	Power Boating	Sail Boating	Fishing	Overall					
	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most					
<u>EROSION/ACCRETION</u>										
Erosion										
Unstable										
Stable		②								②
Accretion										
<u>LITTORAL CURRENTS</u>										
Hazardous										
Non-hazardous		③	④	③						④
<u>NEARSHORE PROFILE</u>										
Steep										
Gradual										
<u>WATER QUALITY</u>										
Good		②						③		④
Potential Pollution										
<u>AIR QUALITY</u>										
Good										⑤
Potential Pollution										
<u>BEACH MORPHOLOGY</u>										
Unstable Dunes										
Narrow Beach		③								③
Stable Dunes		②								④
Wide Beach										
<u>FISH &amp; SHELLFISH HABITAT</u>										
High Quality										
Average Quality								③		④
<u>WETLANDS</u>										
Potential Impact		④								⑤
<u>WILDLIFE HABITAT</u>										
Potential Impact		③								④

# Environmental Review

## Part Five

EXHIBIT V-12: Myrtle Beach - Ocean Forest

Myrtle Beach to Ocean Forest (Exhibit V-12)

Intensive resort development has eliminated the dune system along this shoreline. The beaches are wide, however, and have a gradual slope. Erosion problems exist primarily in areas where concrete walls or bulkheads have been constructed to protect beachfront development.

This beach is most suitable for outdoor recreation. Little environmental impact is likely to occur with further intensive recreational use and development.

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY												
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY											
	Swimming/ Sunbathing	Power Boating	Sail Boating	Fishing	Overall							
	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most						
<u>EROSION/ACCRETION</u>												
Erosion	1											2
Unstable												
Stable												
Accretion												
<u>LITTORAL CURRENTS</u>												
Hazardous												
Non-hazardous		1		1		1						1
<u>NEARSHORE PROFILE</u>												
Steep												
Gradual		1										
<u>WATER QUALITY</u>												
Good		1										1
Potential Pollution												
<u>AIR QUALITY</u>												
Good												1
Potential Pollution												
<u>BEACH MORPHOLOGY</u>												
Unstable Dunes	1											1
Narrow Beach												
Stable Dunes												
Wide Beach		1										1
<u>FISH &amp; SHELLFISH HABITAT</u>												
High Quality												
Average Quality									1		1	
<u>WETLANDS</u>												
Potential Impact												1
<u>WILDLIFE HABITAT</u>												
Potential Impact												1

## Part Five

# Environmental Review

### EXHIBIT V-13: Garden City - Surfside Beach

#### Garden City Beach to Surfside Beach (Exhibit V-13)

This shoreline has a long history of erosion. Garden City's 13,500 feet of beachfront has experienced critical erosion from storm waves and longshore currents. Between 1872 and 1966, the average annual rate of erosion was 3.3 feet; from 1966 to 1972, erosion averaged 4.4 feet per year. /9/ A series of groins constructed by the State in the 1960s, each approximately 4,270 feet long and spaced 570 feet apart, has only been partially effective in controlling erosion.

To protect oceanfront homes, 9,000 feet of bulkheading has also been constructed parallel to the beach. The effect has been to concentrate wave energy at the foot of the bulkhead, increasing erosion and washout at that point.

These beaches are quite narrow due to this erosional trend. The average width of dry beach is 49 feet. The predominant littoral current is southwestward.

Nonetheless, they are generally suitable for recreation. Currents are non-hazardous to swimmers, and the nearshore profile is gradual with good water quality. Fish and shellfish habitats are of average quality, so fishing is a likely activity.

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY											
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY										
	Swimming/ Sunbathing	Power Boating	Sail Boating	Fishing	Overall						
	Least → Most	Least → Most	Least → Most	Least → Most	Least →						Most →
<u>EROSION/ACCRETION</u>											
Erosion	⊙										⊙
Unstable											
Stable											
Accretion											
<u>LITTORAL CURRENTS</u>											
Hazardous											
Non-hazardous		⊙		⊙		⊙					⊙
<u>NEARSHORE PROFILE</u>											
Steep											
Gradual		⊙									⊙
<u>WATER QUALITY</u>											
Good		⊙							⊙		⊙
Potential Pollution											
<u>AIR QUALITY</u>											
Good											⊙
Potential Pollution											
<u>BEACH MORPHOLOGY</u>											
Unstable Dunes	⊙									⊙	
Narrow Beach	⊙									⊙	
Stable Dunes											
Wide Beach											
<u>FISH &amp; SHELLFISH HABITAT</u>											
High Quality											
Average Quality									⊙		⊙
<u>WETLANDS</u>											
Potential Impact											⊙
<u>WILDLIFE HABITAT</u>											
Potential Impact											⊙

# Environmental Review

## Part Five

### EXHIBIT V-14: Huntington Beach State Park

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY										
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY									
	Swimming/ Sunbathing	Power Boating	Sail Boating	Fishing	Overall					
	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most
<u>EROSION/ACCRETION</u>										
Erosion	3									
Unstable										
Stable										
Accretion										
<u>LITTORAL CURRENTS</u>										
Hazardous										
Non-hazardous										
<u>NEARSHORE PROFILE</u>										
Steep										
Gradual										
<u>WATER QUALITY</u>										
Good		4				3				2
Potential Pollution										
<u>AIR QUALITY</u>										
Good										3
Potential Pollution										
<u>BEACH MORPHOLOGY</u>										
Unstable Dunes	4								3	
Narrow Beach										
Stable Dunes										
Wide Beach										
<u>FISH &amp; SHELLFISH HABITAT</u>										
High Quality						3				3
Average Quality										
<u>WETLANDS</u>										
Potential Impact									3	
<u>WILDLIFE HABITAT</u>										
Potential Impact										3

### Huntington Beach State Park (Exhibit V-14)

Due to the influence of Murrell's Inlet, the northern end of the park's three-mile beach is presently eroding. On a long-term basis, it is unstable. To the south, the beachfront is stable, and the dune system is well established and undisturbed.

The predominant littoral current in this area is southwestward. The annual littoral drift rate at Murrell's Inlet is 100,000 cubic yards of sediment, moving north-to-south. /10/ Between 1872 and 1966, the annual average rate of shoreline recession was 1.3 feet in the vicinity of the inlet. /11/ The park's beachfront will continue to change in irregular cycles in response to the dynamic nature of Murrell's Inlet.

Because of the inlet's proximity, fishing and shellfishing are excellent in the area. Huntington Beach State Park, appropriately, is well suited to recreation.

## Part Five

### Litchfield Beach (Exhibit V-15)

From an environmental viewpoint, Litchfield Beach is a transitional point between the Grand Strand and beaches to the South. The shoreline is straight, beaches are wide and stable, and the beach face has a gradual slope. The spit forming the northern border of Midway Inlet is migrating southward.

Its environmental attributes make Litchfield Beach most suitable for recreational use.

## Environmental Review

### EXHIBIT V-15: Litchfield Beach

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY												
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY											
	Swimming/ Sunbathing	Power Boating	Sail Boating	Fishing	Overall							
	Least → Most	Least → Most	Least → Most	Least → Most	Least →						Most	
<u>EROSION/ACCRETION</u>												
Erosion												
Unstable												
Stable												2
Accretion												
<u>LITTORAL CURRENTS</u>												
Hazardous												
Non-hazardous		2		2								2
<u>NEARSHORE PROFILE</u>												
Steep												
Gradual		2										2
<u>WATER QUALITY</u>												
Good		2										2
Potential Pollution									2			2
<u>AIR QUALITY</u>												
Good		2										2
Potential Pollution												
<u>BEACH MORPHOLOGY</u>												
Unstable Dunes												
Narrow Beach												
Stable Dunes		2										2
Wide Beach		2										2
<u>FISH &amp; SHELLFISH HABITAT</u>												
High Quality												
Average Quality									2			2
<u>WETLANDS</u>												
Potential Impact		2										2
<u>WILDLIFE HABITAT</u>												
Potential Impact		2										2

# Environmental Review

## Part Five

EXHIBIT V-16: Pawleys Island

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY					
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY				
	Swimming/ Surbathing	Power Boating	Sail Boating	Fishing	Overall
	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most
<u>EROSION/ACCRETION</u>					
Erosion	⑤				⑤
Unstable					
Stable					
Accretion					
<u>LITTORAL CURRENTS</u>					
Hazardous					
Non-hazardous	④				④
<u>NEARSHORE PROFILE</u>					
Steep					
Gradual					
<u>WATER QUALITY</u>					
Good	③			③	③
Potential Pollution					
<u>AIR QUALITY</u>					
Good	④				④
Potential Pollution					
<u>BEACH MORPHOLOGY</u>					
Unstable Dunes	①				①
Narrow Beach	②				②
Stable Dunes					
Wide Beach					
<u>FISH &amp; SHELLFISH HABITAT</u>					
High Quality				③	③
Average Quality					
<u>WETLANDS</u>					
Potential Impact					⑤
<u>WILDLIFE HABITAT</u>					
Potential Impact					⑤

Pawleys Island (Exhibit V-16)

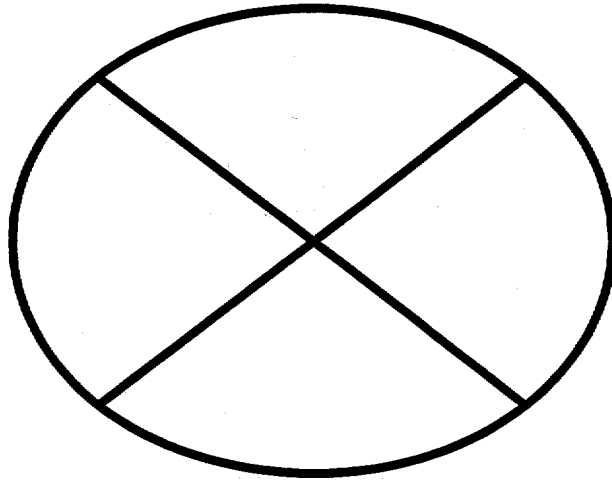
Pawleys Island has a very dynamic shoreline due largely to the influence of Midway Inlet to the north and Pawleys Inlet to the south. It has received a great deal of attention in past efforts to protect oceanfront property.

Although the longshore current moves primarily in a southwesterly direction, it has a northerly tendency along the island's northern end. After a groin was constructed on the northern tip in 1952, this northerly drift produced accretion along the northern third of the beach. The dunes in this area are now well stabilized by vegetation and reach heights over 18 feet above mean low water.

In an effort to stop erosion, 24 groins were constructed by the South Carolina Highway Department between 1949 and 1964 along the southern two-thirds of oceanfront. In the middle of the island, the groins have been fairly successful at stabilizing the shoreline, and this beach, as at the northern end, is fairly wide.

The southern third of the island, however, is a very narrow, unstable sand spit subject to breaching during storms. Efforts to stabilize this area have been unsuccessful and the beach

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erodes 1.7 feet per year. To protect oceanfront homes that run the length of the spit, 2,650 feet of bulkheading has been constructed. There is little dune structure along this section and the narrow beach averages 15 feet in width.

Pawleys Island's recreational potential use, therefore, is primarily limited by its narrow and eroding beach.

### Debidue Beach (Exhibit V-17)

Except for some development at its northern end, Debidue Beach is still in a natural state. Its undisturbed beaches and dunes serve as a rookery for numerous birds as well as for the Atlantic loggerhead turtle.

Generally, the shoreline is stable, but some minor erosion is occurring, and the spit at North Inlet is migrating southward. Debidue Beach is highly suitable for recreation.

## Environmental Review

EXHIBIT V-17: Debidue Beach

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY												
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY											
	Swimming/ Sunbathing	Power Boating	Sail Boating	Fishing	Overall							
	Least→ Most	Least→ Most	Least→ Most	Least→ Most	Least→ Most	Least→ Most	Least→ Most	Least→ Most	Least→ Most	Least→ Most	Least→ Most	Least→ Most
<u>EROSION/ACCRETION</u>												
Erosion												
Unstable												
Stable												
Accretion												
<u>LITTORAL CURRENTS</u>												
Hazardous												
Non-hazardous												
<u>NEARSHORE PROFILE</u>												
Steep												
Gradual												
<u>WATER QUALITY</u>												
Good												
Potential Pollution												
<u>AIR QUALITY</u>												
Good												
Potential Pollution												
<u>BEACH MORPHOLOGY</u>												
Unstable Dunes												
Narrow Beach												
Stable Dunes												
Wide Beach												
<u>FISH &amp; SHELLFISH HABITAT</u>												
High Quality												
Average Quality												
<u>WETLANDS</u>												
Potential Impact												
<u>WILDLIFE HABITAT</u>												
Potential Impact												



# Environmental Review

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EXHIBIT V-18: North Island

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY										
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY									
	Swimming/ Sunbathing	Power Boating	Sail Boating	Fishing	Overall					
	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most
<u>EROSION/ACCRETION</u>										
Erosion										
Unstable										
Stable										
Accretion		⊙								⊙
<u>LITTORAL CURRENTS</u>										
Hazardous										
Non-hazardous										
<u>NEARSHORE PROFILE</u>										
Steep										
Gradual		⊙								⊙
<u>WATER QUALITY</u>										
Good										
Potential Pollution	⊙				⊙				⊙	
<u>AIR QUALITY</u>										
Good										
Potential Pollution										
<u>BEACH MORPHOLOGY</u>										
Unstable Dunes										
Narrow Beach										
Stable Dunes		⊙								⊙
Wide Beach		⊙								⊙
<u>FISH &amp; SHELLFISH HABITAT</u>										
High Quality										
Average Quality					⊙				⊙	
<u>WETLANDS</u>										
Potential Impact	⊙								⊙	
<u>WILDLIFE HABITAT</u>										
Potential Impact	⊙								⊙	

North Island (Exhibit V-18)

North Island also is still in a natural state and is an important wildlife habitat. The littoral current is predominantly southwestward, and the island builds to the south. In the vicinity of North Inlet the beachfront is eroding. North Inlet and the surrounding wetlands serve as a field laboratory for the Baruch Institute.

Winyah Bay has become polluted from treated and untreated municipal wastes that enter its waters daily from the city of Georgetown.

North Island is suitable for recreational use. Winyah Bay's poor water quality is offset by the wide, stable beach. The potential impact of recreational use on wildlife may be moderated by control of access.

## Part Five

### Charleston Region

South Island (Exhibit V-19) /12/

The proximity of Winyah Bay immediately to the north has a strong influence on South Island. Unlike the southwestward currents along most of the State's coast, flood tides entering the Bay produce northerly currents along the shoreline. As a result, the beach is building on its northern end, while its southern end is generally unstable. The island's suitability for recreational use is average.

## Environmental Review

EXHIBIT V-19: South Island

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY												
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY											
	Swimming/ Sunbathing	Power Boating	Sail Boating	Fishing	Overall							
	Least → Most	Least → Most	Least → Most	Least → Most	Least →	Most	Least →	Most	Least →	Most	Least →	Most
<u>EROSION/ACCRETION</u>												
Erosion	•										•	
Unstable												
Stable												
Accretion												
<u>LITTORAL CURRENTS</u>												
Hazardous												
Non-hazardous												
<u>NEARSHORE PROFILE</u>												
Steep												
Gradual	•										•	
<u>WATER QUALITY</u>												
Good												
Potential Pollution	•								•		•	
<u>AIR QUALITY</u>												
Good												
Potential Pollution												
<u>BEACH MORPHOLOGY</u>												
Unstable Dunes												
Narrow Beach												
Stable Dunes												
Wide Beach												
<u>FISH &amp; SHELLFISH HABITAT</u>												
High Quality												
Average Quality									•		•	
<u>WETLANDS</u>												
Potential Impact											•	
<u>WILDLIFE HABITAT</u>												
Potential Impact											•	

# Environmental Review

## Part Five

### EXHIBIT V-20: Cedar Island and Murphy Island

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY										
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY									
	Swimming/ Sunbathing	Power Boating	Sail Boating	Fishing	Overall					
	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Most	Least → Most	Most	Least → Most	Most
<u>EROSION/ACCRETION</u>										
Erosion										
Unstable	⊙								⊙	
Stable										
Accretion										
<u>LITTORAL CURRENTS</u>										
Hazardous										
Non-hazardous										
<u>NEARSHORE PROFILE</u>										
Steep										
Gradual										
<u>WATER QUALITY</u>										
Good										
Potential Pollution										
<u>AIR QUALITY</u>										
Good										
Potential Pollution										
<u>BEACH MORPHOLOGY</u>										
Unstable Dunes										
Narrow Beach										
Stable Dunes										
Wide Beach										
<u>FISH &amp; SHELLFISH HABITAT</u>										
High Quality										
Average Quality										
<u>WETLANDS</u>										
Potential Impact										
<u>WILDLIFE HABITAT</u>										
Potential Impact										

#### Cedar Island (Exhibit V-20)

As part of the Santee Coastal Preserve and accessible only by boat, Cedar Island should only be considered for limited recreational use.

Characteristic of many South Carolina shorelines bordering inlets, the beach, which is narrow and backed by marsh, is eroding at the north end and growing to the south.

#### Murphy Island (Exhibit V-20)

The South Santee River has a major influence on the shoreline of Murphy Island lying to the southwest. Erosion has been evident, particularly along the northern end, since diversion of the Santee River.

Use of Murphy Island for more than limited recreation will have a detrimental environmental impact.

## Part Five

### Cape Romain Migratory Bird Refuge (Exhibit V-21)

Almost the entire length of ocean shoreline within the wildlife refuge is suffering from long-term erosion. The prominent position of Bull Island at the south end of Bull Bay has exposed it to severe erosion from ocean waves and currents.

Only isolated recreational use would be compatible with the Refuge's present use.

## Environmental Review

### EXHIBIT V-21: Cape Romain Migratory Bird Refuge

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY					
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY				
	Swimming/ Sunbathing	Power Boating	Sail Boating	Fishing	Overall
	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most
<u>EROSION/ACCRETION</u>					
Erosion	●				●
Unstable					
Stable					
Accretion					
<u>LITTORAL CURRENTS</u>					
Hazardous					
Non-hazardous					
<u>NEARSHORE PROFILE</u>					
Steep					
Gradual					
<u>WATER QUALITY</u>					
Good				●	●
Potential Pollution					
<u>AIR QUALITY</u>					
Good					●
Potential Pollution					
<u>BEACH MORPHOLOGY</u>					
Unstable Dunes					
Narrow Beach					
Stable Dunes					
Wide Beach					
<u>FISH &amp; SHELLFISH HABITAT</u>					
High Quality				●	●
Average Quality					
<u>WETLANDS</u>					
Potential Impact					●
<u>WILDLIFE HABITAT</u>					
Potential Impact					●

# Environmental Review

## Part Five

EXHIBIT V-22: Capers Island and Dewees Island

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY																					
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY																				
	Swimming/ Sunbathing		Power Boating		Sail Boating		Fishing		Overall												
	Least → Most		Least → Most		Least → Most		Least → Most		Least → Most		Least → Most										
<u>EROSION/ACCRETION</u>																					
Erosion	●																		●		
Unstable																					
Stable																					
Accretion																					
<u>LITTORAL CURRENTS</u>																					
Hazardous																					
Non-hazardous																					
<u>NEARSHORE PROFILE</u>																					
Steep																					
Gradual																					
<u>WATER QUALITY</u>																					
Good			●																●	●	
Potential Pollution																					
<u>AIR QUALITY</u>																					
Good																				●	
Potential Pollution																					
<u>BEACH MORPHOLOGY</u>																					
Unstable Dunes	●																		●		
Narrow Beach	●																		●		
Stable Dunes																					
Wide Beach																					
<u>FISH &amp; SHELLFISH HABITAT</u>																					
High Quality																					
Average Quality																			●	●	
<u>WETLANDS</u>																					
Potential Impact																			●		
<u>WILDLIFE HABITAT</u>																					
Potential Impact																			●		

Capers Island and Dewees Island  
(Exhibit V-22)

The beachfront on both these islands evidences rapid erosion. There is no dune structure on either island. At high tide the tree line is at the water's edge. Remains of partially uprooted trees are numerous on Capers Island beach. The very unstable nature of the northern half of Dewees Island results primarily from the constant migration -- north and south -- of Capers Inlet.

Both islands are surrounded by extensive saltmarsh, waterways, and sounds. Their good air and water quality and fish and shellfish habitats suggest recreational potential diminished primarily by narrow, eroding beachfronts.

# Environmental Review

Isle of Palms (Exhibit V-23)

On the island's undeveloped northern end, the dune fields are wide and well-established with vegetation, except in the most recently eroded areas.

Recreational use of the Isle of Palms is highly suitable.

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY										
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY									
	Swimming/ Sunbathing	Power Boating	Sail Boating	Fishing	Overall					
	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most					
<u>EROSION/ACCRETION</u>										
Erosion	●									●
Unstable										
Stable										
Accretion										
<u>LITTORAL CURRENTS</u>										
Hazardous										
Non-hazardous		●	●	●						●
<u>NEARSHORE PROFILE</u>										
Steep										
Gradual										
<u>WATER QUALITY</u>										
Good		●							●	●
Potential Pollution										
<u>AIR QUALITY</u>										
Good										●
Potential Pollution										
<u>BEACH MORPHOLOGY</u>										
Unstable Dunes										
Narrow Beach										
Stable Dunes		●								●
Wide Beach		●								●
<u>FISH &amp; SHELLFISH HABITAT</u>										
High Quality										
Average Quality								●		●
<u>WETLANDS</u>										
Potential Impact										●
<u>WILDLIFE HABITAT</u>										
Potential Impact										●

# Environmental Review

## Part Five

EXHIBIT V-24: Sullivans Island

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY										
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY									
	Swimming/ Sunbathing	Power Boating	Sail Boating	Fishing	Overall					
	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most
<u>EROSION/ACCRETION</u>										
Erosion	●								●	
Unstable										
Stable										
Accretion										
<u>LITTORAL CURRENTS</u>										
Hazardous	●									
Non-hazardous			●	●					●	
<u>NEARSHORE PROFILE</u>										
Steep										
Gradual										
<u>WATER QUALITY</u>										
Good										
Potential Pollution	●								●	
<u>AIR QUALITY</u>										
Good										●
Potential Pollution										
<u>BEACH MORPHOLOGY</u>										
Unstable Dunes										
Narrow Beach										
Stable Dunes										
Wide Beach										
<u>FISH &amp; SHELLFISH HABITAT</u>										
High Quality						●				●
Average Quality										
<u>WETLANDS</u>										
Potential Impact										●
<u>WILDLIFE HABITAT</u>										
Potential Impact										●

Sullivans Island (Exhibit V-24)

The southwestern half of Sullivans Island has been building out over the last 25 to 35 years, probably due largely to the Charleston Harbor jetties. The northeastern half of the island is unstable, except for the extreme northern end, which is retreating as Breach Inlet migrates westward.

Safety for swimmers is an important concern at both ends of the island because of the strong tidal currents in the vicinity. Nearshore fishing is especially good around the Charleston Harbor jetties. Thus, Sullivans Island is highly suitable for recreation.

## Part Five

# Environmental Review

### Morris Island (Exhibit V-25)

Except for the extreme northern tip, the shoreline of Morris Island has retreated more than 1,600 feet since 1939. /13/

The possible effects of strong tidal currents and polluted waters associated with Charleston Harbor detract from the potential use of this beach for swimming. The island is presently uninhabited. Providing road access would require filling an extensive area of salt marsh. Environmental constraints therefore make Morris Island unsuitable for recreation.

### EXHIBIT V-25: Morris Island

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY																				
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY																			
	Swimming/ Sunbathing	Power Boating	Sail Boating	Fishing	Overall															
	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most															
<u>EROSION/ACCRETION</u>																				
Erosion	●																		●	
Unstable																				
Stable																				
Accretion																				
<u>LITTORAL CURRENTS</u>																				
Hazardous		●																	●	
Non-hazardous																				
<u>NEARSHORE PROFILE</u>																				
Steep																				
Gradual																				
<u>WATER QUALITY</u>																				
Good																				
Potential Pollution		●																●		●
<u>AIR QUALITY</u>																				
Good																				●
Potential Pollution																				
<u>BEACH MORPHOLOGY</u>																				
Unstable Dunes	●																		●	
Narrow Beach	●																		●	
Stable Dunes																				
Wide Beach																				
<u>FISH &amp; SHELLFISH HABITAT</u>																				
High Quality																				
Average Quality																		●		●
<u>WETLANDS</u>																				
Potential Impact																			●	
<u>WILDLIFE HABITAT</u>																				
Potential Impact																			●	



# Environmental Review

## Part Five

EXHIBIT V-26: Folly Island

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY					
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY				
	Swimming/ Sunbathing	Power Boating	Sail Boating	Fishing	Overall
	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most
<u>EROSION/ACCRETION</u>					
Erosion	④				④
Unstable					
Stable					
Accretion					
<u>LITTORAL CURRENTS</u>					
Hazardous					
Non-hazardous	③	③	③		③
<u>NEARSHORE PROFILE</u>					
Steep					
Gradual	③				③
<u>WATER QUALITY</u>					
Good		③		③	③
Potential Pollution					
<u>AIR QUALITY</u>					
Good					③
Potential Pollution					
<u>BEACH MORPHOLOGY</u>					
Unstable Dunes	③				③
Narrow Beach	③				③
Stable Dunes					
Wide Beach					
<u>FISH &amp; SHELLFISH HABITAT</u>					
High Quality					
Average Quality				③	③
<u>WETLANDS</u>					
Potential Impact					③
<u>WILDLIFE HABITAT</u>					
Potential Impact					③

Folly Island (Exhibit V-26)

Folly Island's entire beachfront has suffered from almost continuous erosion during the last few decades. A series of groins, 275 feet long and spaced 500 feet apart, constructed since 1947, have been only partially successful. The entire shoreline is still unstable, and the northern end, unprotected by groins, continues to erode rapidly.

Cottages are located at the top of the beach face along most of the island, and except for the extreme southern end, there are no sand dunes. The beach at high tide is narrow to non-existent.

However, good air and water quality and little potential impact on wetlands or wildlife habitats make Folly Island, however limited its sandy beach, reasonably suitable for recreational use.

## Part Five

### Kiawah Island (Exhibit V-27)

Kiawah Island's shoreline is generally stable. A six-mile stretch of beach in the island's center has experienced gradual, long-term accretion. The eastern and western extremes are unstable and undergo alternate periods of rapid erosion and accretion. A wide, well-stabilized dune system extends the length of the island.

Kiawah is one of the primary nesting areas for the Atlantic loggerhead turtle in South Carolina. /14/ Also, the upper reaches of Captain Sam's inlet are one of the best areas in the State for oyster gathering. /15/

Kiawah Island has one of the most appealing island beaches in South Carolina. Its recreational suitability for swimming, boating, sailing, and fishing is very high.

## Environmental Review

### EXHIBIT V-27: Kiawah Island

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY										
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY									
	Swimming/ Sunbathing	Power Boating	Sail Boating	Fishing	Overall					
	Least → Most	Least → Most	Least → Most	Least → Most	Least →				Most	
<u>EROSION/ACCRETION</u>										
Erosion										
Unstable										
Stable		●								●
Accretion										
<u>LITTORAL CURRENTS</u>										
Hazardous										
Non-hazardous		●	●	●						●
<u>NEARSHORE PROFILE</u>										
Steep										
Gradual		●								●
<u>WATER QUALITY</u>										
Good		●								●
Potential Pollution										
<u>AIR QUALITY</u>										
Good										●
Potential Pollution										
<u>BEACH MORPHOLOGY</u>										
Unstable Dunes										
Narrow Beach										
Stable Dunes		●								●
Wide Beach		●								●
<u>FISH &amp; SHELLFISH HABITAT</u>										
High Quality										
Average Quality										●
<u>WETLANDS</u>										
Potential Impact			●							●
<u>WILDLIFE HABITAT</u>										
Potential Impact	●									●

# Environmental Review

## Part Five

### EXHIBIT V-28: Seabrook Island

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY																				
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY																			
	Swimming/ Sunbathing		Power Boating		Sail Boating		Fishing		Overall											
	Least → Most		Least → Most		Least → Most		Least → Most		Least → Most		Least → Most		Least → Most		Least → Most		Least → Most		Least → Most	
<u>EROSION/ACCRETION</u>																				
Erosion																				
Unstable																				
Stable																				
Accretion																				
<u>LITTORAL CURRENTS</u>																				
Hazardous																				
Non-hazardous																				
<u>NEARSHORE PROFILE</u>																				
Steep																				
Gradual																				
<u>WATER QUALITY</u>																				
Good																				
Potential Pollution																				
<u>AIR QUALITY</u>																				
Good																				
Potential Pollution																				
<u>BEACH MORPHOLOGY</u>																				
Unstable Dunes																				
Narrow Beach																				
Stable Dunes																				
Wide Beach																				
<u>FISH &amp; SHELLFISH HABITAT</u>																				
High Quality																				
Average Quality																				
<u>WETLANDS</u>																				
Potential Impact																				
<u>WILDLIFE HABITAT</u>																				
Potential Impact																				

### Seabrook Island (Exhibit V-28)

The entire coast of Seabrook Island is unstable. In the past few years, the southern end has eroded significantly and will likely continue to undergo rapid cycles of erosion and accretion due to the strong influence of the North Edisto River inlet. The flat, sparsely vegetated dunes along the southern half of the island attest to this instability.

Both ends of the island could be hazardous for swimmers because of strong currents in the North Edisto River inlet to the south and Captain Sam's inlet to the north.

Fishing in offshore waters near Seabrook Island is a particularly outstanding recreational opportunity.

## Part Five

### Edingsville Beach and Botany Bay Island (Exhibit V-29)

This entire shoreline has experienced long-term erosion. From 1856 to 1954 the average rate of recession on Botany Bay Island was 35.2 feet per year. During the same period, Edingsville Beach eroded at about 13.8 feet per year. /16/

At many points, erosion has occurred to such an extent that the beach is backed directly by marsh. Small inlets have formed and intersect with the marsh at locations that have been breached. Because of erosion, beach morphology, and potential impact on wetlands, these areas are not suited for recreational use.

## Environmental Review

### EXHIBIT V-29: Edingsville Beach and Botany Bay Island

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY										
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY									
	Swimming/ Sunbathing	Power Boating	Sail Boating	Fishing	Overall					
	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most					
<u>EROSION/ACCRETION</u>										
Erosion	⊙								⊙	
Unstable										
Stable										
Accretion										
<u>LITTORAL CURRENTS</u>										
Hazardous										
Non-hazardous										
<u>NEARSHORE PROFILE</u>										
Steep										
Gradual										
<u>WATER QUALITY</u>										
Good		⊙						⊙		⊙
Potential Pollution										
<u>AIR QUALITY</u>										
Good										⊙
Potential Pollution										
<u>BEACH MORPHOLOGY</u>										
Unstable Dunes	⊙								⊙	
Narrow Beach	⊙								⊙	
Stable Dunes										
Wide Beach										
<u>FISH &amp; SHELLFISH HABITAT</u>										
High Quality										
Average Quality								⊙		⊙
<u>WETLANDS</u>										
Potential Impact									⊙	
<u>WILDLIFE HABITAT</u>										
Potential Impact										⊙

# Environmental Review

## Part Five

### EXHIBIT V-30: Edisto Island and Edisto Beach State Park

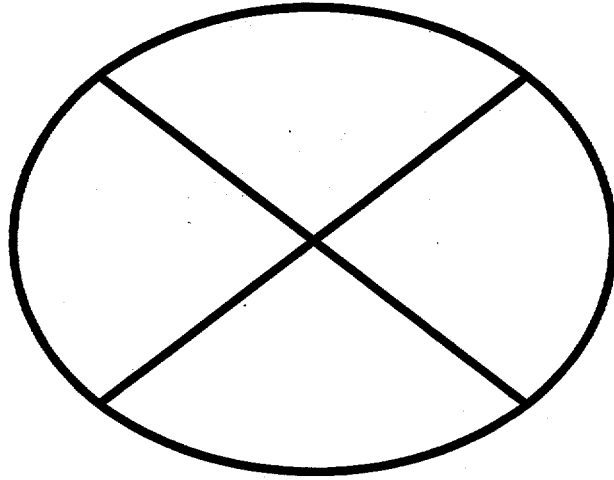
### Edisto Island and Edisto Beach State Park (Exhibit V-30)

The northern end of Edisto Island, primarily the State Park shoreline, has undergone long-term erosion. The two-mile section of beach immediately to the south, however, is very stable, while the extreme southern end is generally unstable.

The beaches are fairly wide, averaging 20-30 feet at high tide even along the State Park, probably due in part to the 830,000 cubic yards of sand used to nourish the beach in 1954. The sand dunes appear well stabilized, although south of the State Park, encroachment by oceanfront cottages and pedestrian traffic is having a disruptive effect. From an environmental perspective, Edisto Island is highly suited for recreational use.

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY																				
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY																			
	Swimming/ Sunbathing		Power Boating		Sail Boating		Fishing		Overall											
	Least →	Most	Least →	Most	Least →	Most	Least →	Most	Least →	Most	Least →	Most	Least →	Most	Least →	Most	Least →	Most	Least →	Most
<u>EROSION/ACCRETION</u>																				
Erosion	⊙																		⊙	
Unstable																				
Stable		⊙																	⊙	
Accretion																				
<u>LITTORAL CURRENTS</u>																				
Hazardous																				
Non-hazardous			⊙			⊙		⊙											⊙	
<u>NEARSHORE PROFILE</u>																				
Steep																				
Gradual			⊙																⊙	
<u>WATER QUALITY</u>																				
Good			⊙							⊙									⊙	
Potential Pollution																				
<u>AIR QUALITY</u>																				
Good																			⊙	
Potential Pollution																				
<u>BEACH MORPHOLOGY</u>																				
Unstable Dunes																				
Narrow Beach																				
Stable Dunes		⊙																	⊙	
Wide Beach		⊙																	⊙	
<u>FISH &amp; SHELLFISH HABITAT</u>																				
High Quality																				
Average Quality										⊙									⊙	
<u>WETLANDS</u>																				
Potential Impact																				⊙
<u>WILDLIFE HABITAT</u>																				
Potential Impact																				⊙

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## Part Five

### The Low Country Region

#### Harbor Island (Exhibit V-31) /17/

Between 1933 and 1955, the southern half of Harbor Island eroded at an annual rate of 23 feet. The northern half accreted during the same period at an average rate of 12 feet per year. /18/

Although fishing and shellfishing are good in the area, Harbor River is polluted. /19/

## Environmental Review

### EXHIBIT V-31: Harbor Island

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY																									
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY																								
	Swimming/ Sunbathing					Power Boating					Sail Boating					Fishing					Overall				
	Least →	→ Most	Least →	→ Most	Least →	Least →	→ Most	→ Most	Least →	→ Most	Least →	→ Most	Least →	→ Most	Least →	Least →	→ Most	→ Most	Least →	→ Most	Least →	→ Most	Least →	→ Most	Least →
<u>EROSION/ACCRETION</u>																									
Erosion		●																					●		
Unstable																									
Stable																									
Accretion																									
<u>LITTORAL CURRENTS</u>																									
Hazardous		●																					●		
Non-hazardous																									
<u>NEARSHORE PROFILE</u>																									
Steep		●																					●		
Gradual																									
<u>WATER QUALITY</u>																									
Good																									
Potential Pollution		●																	●				●		
<u>AIR QUALITY</u>																									
Good																								●	
Potential Pollution																									
<u>BEACH MORPHOLOGY</u>																									
Unstable Dunes																									
Narrow Beach																									
Stable Dunes																									
Wide Beach																									
<u>FISH &amp; SHELLFISH HABITAT</u>																									
High Quality																							●		●
Average Quality																									
<u>WETLANDS</u>																									
Potential Impact																								●	
<u>WILDLIFE HABITAT</u>																									
Potential Impact																								●	

# Environmental Review

## Part Five

EXHIBIT V-32: Hunting Island

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY										
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY									
	Swimming/ Sunbathing	Power Boating	Sail Boating	Fishing	Overall					
	Least → Most	Least → Most	Least → Most	Least → Most	Least →				Most →	
<u>EROSION/ACCRETION</u>										
Erosion	⊙								⊙	
Unstable										
Stable										
Accretion										
<u>LITTORAL CURRENTS</u>										
Hazardous										
Non-hazardous		⊙	⊙	⊙					⊙	
<u>NEARSHORE PROFILE</u>										
Steep										
Gradual		⊙							⊙	
<u>WATER QUALITY</u>										
Good										
Potential Pollution					⊙				⊙	
<u>AIR QUALITY</u>										
Good										⊙
Potential Pollution										
<u>BEACH MORPHOLOGY</u>										
Unstable Dunes	⊙								⊙	
Narrow Beach										
Stable Dunes										
Wide Beach		⊙							⊙	
<u>FISH &amp; SHELLFISH HABITAT</u>										
High Quality										
Average Quality					⊙				⊙	
<u>WETLANDS</u>										
Potential Impact										⊙
<u>WILDLIFE HABITAT</u>										
Potential Impact	⊙								⊙	

Hunting Island (Exhibit V-32)

The 4.3 miles of ocean shoreline on Hunting Island have a long, well-documented history of erosion. During the period 1859-1962, the beachfront on the northern one-third of the island retreated 6,500 feet at an annual rate of 22.7 feet. The average rate of erosion on the southern two-thirds of the island during the same period was 9.2 feet per year. /20/

As part of a U.S. Army Corps of Engineers project to halt the rapid erosion, a 700-foot terminal groin was constructed at the northern end of the island in 1968. 750,000 cubic yards of sand were used to nourish 10,000 feet of shoreline at the island's north end. A portion of this sediment was transported by the southwesterly littoral currents and deposited along the beach on the south end. Between 1969 and 1971, 200,000 cubic yards of sand were lost per year from erosion, requiring another 761,000 cubic yards of nourishment in August, 1971. /21/

The northern 40 percent of the island is now relatively stable. The remainder to the south will probably continue to erode. The island may require annual nourishment of 470,000 cubic yards of sand. /22/



## Part Five

Except for the southern end, there are no sand dunes on the island, and the beach ends abruptly at the tree line, clear evidence of major erosion. Because of the nourishment program, however, the beaches on the northern half of the island are as much as 100-250 feet wide.

Much of the inshore waters surrounding Hunting Island, Fripp Inlet and Harbor River are polluted. /23/

Notwithstanding these qualifications, Hunting Island's recreational suitability is good.

### Fripp Island (Exhibit V-33)

Erosion has occurred along the entire beachfront of Fripp Island during the last century. Groins were constructed recently at the island's northern tip, and the beach has been stabilized in the immediate vicinity to some degree.

Its sand dunes are low but stable, and vary in width from 10 to 50 feet. Due to erosion, the dry beach is only five to 10 feet in width.

A significant number of Atlantic loggerhead turtles nest on Fripp Island.

## Environmental Review

EXHIBIT V-33: Fripp Island

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY												
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY											
	Swimming/ Sunbathing	Power Boating	Sail Boating	Fishing	Overall							
	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most
<u>EROSION/ACCRETION</u>												
Erosion	②											②
Unstable												
Stable												
Accretion												
<u>LITTORAL CURRENTS</u>												
Hazardous												
Non-hazardous												
<u>NEARSHORE PROFILE</u>												
Steep												
Gradual												
<u>WATER QUALITY</u>												
Good												
Potential Pollution	②								②			②
<u>AIR QUALITY</u>												
Good												②
Potential Pollution												
<u>BEACH MORPHOLOGY</u>												
Unstable Dunes	②										②	
Narrow Beach												
Stable Dunes		②										②
Wide Beach												
<u>FISH &amp; SHELLFISH HABITAT</u>												
High Quality												
Average Quality									②			②
<u>WETLANDS</u>												
Potential Impact												②
<u>WILDLIFE HABITAT</u>												
Potential Impact												②

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## Part Five

EXHIBIT V-34: Capers Island and Pritchards Island

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY																				
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY																			
	Swimming/ Sunbathing	Power Boating	Sail Boating	Fishing	Overall															
	Least → Most	Least → Most	Least → Most	Least → Most	Least → Most															
<u>EROSION/ACCRETION</u>																				
Erosion	⊗																		⊗	
Unstable																				
Stable																				
Accretion																				
<u>LITTORAL CURRENTS</u>																				
Hazardous																				
Non-hazardous																				
<u>NEARSHORE PROFILE</u>																				
Steep																				
Gradual																				
<u>WATER QUALITY</u>																				
Good			⊗															⊗		⊗
Potential Pollution																				
<u>AIR QUALITY</u>																				
Good																				⊗
Potential Pollution																				
<u>BEACH MORPHOLOGY</u>																				
Unstable Dunes																				
Narrow Beach																				
Stable Dunes																				
Wide Beach																				
<u>FISH &amp; SHELLFISH HABITAT</u>																				
High Quality																				
Average Quality																		⊗		⊗
<u>WETLANDS</u>																				
Potential Impact																			⊗	
<u>WILDLIFE HABITAT</u>																				
Potential Impact																			⊗	

The possible pollution of Fripp Inlet could affect the island's beaches because of southwesterly littoral currents. /24/

Because of these environmental conditions, the overall recreational suitability of this beach is good, but considerably less than ideal.

### Capers Island (Beaufort County) and Pritchards Island (Exhibit V-34)

Both Capers Island (in Beaufort County) and Pritchards Island have long suffered from erosion. From 1855 to 1955, Capers eroded 1,800 feet, and Pritchards, 1,250 feet. /25/

Both islands contain extensive marshlands and have no road access to high ground. Because of the marsh and erosion, the islands are not especially suitable for recreational activity.

## Part Five

### St. Phillips Island (Exhibit V-35)

This low, presently undisturbed island, almost completely surrounded by marsh, has only one mile of ocean shoreline. It consists of parallel dune ridges dissected by salt marsh.

The ocean floor extending several hundred feet from the shoreline consists of very soft, muddy sediment. Thus, swimming is inappropriate. Fishing is the only suitable form of recreation.

## Environmental Review

### EXHIBIT V-35: St. Phillips Island

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY																				
ENVIRONMENTAL FACTORS					RECREATIONAL SUITABILITY															
					Swimming/ Sunbathing	Power Boating	Sail Boating	Fishing	Overall											
					Least → Most	Least → Most	Least → Most	Least → Most	Least → Most											
<u>EROSION/ACCRETION</u>																				
Erosion					●														●	
Unstable																				
Stable																				
Accretion																				
<u>LITTORAL CURRENTS</u>																				
Hazardous																				
Non-hazardous																				
<u>NEARSHORE PROFILE</u>																				
Steep					●														●	
Gradual																				
<u>WATER QUALITY</u>																				
Good						●													●	●
Potential Pollution																				
<u>AIR QUALITY</u>																				
Good																			●	
Potential Pollution																				
<u>BEACH MORPHOLOGY</u>																				
Unstable Dunes																				
Narrow Beach																				
Stable Dunes																				
Wide Beach																				
<u>FISH &amp; SHELLFISH HABITAT</u>																				
High Quality																			●	●
Average Quality																				
<u>WETLANDS</u>																				
Potential Impact																			●	
<u>WILDLIFE HABITAT</u>																				
Potential Impact																			●	

# Environmental Review

## Part Five

EXHIBIT V-36: Bay Point Island

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY																					
ENVIRONMENTAL FACTORS		RECREATIONAL SUITABILITY																			
		Swimming/ Sunbathing	Power Boating	Sail Boating	Fishing	Overall															
		Least→ Most	Least→ Most	Least→ Most	Least→ Most	Least→ Most															
<u>EROSION/ACCRETION</u>																					
Erosion		⊙																		⊙	
Unstable																					
Stable																					
Accretion																					
<u>LITTORAL CURRENTS</u>																					
Hazardous																					
Non-hazardous																					
<u>NEARSHORE PROFILE</u>																					
Steep																					
Gradual																					
<u>WATER QUALITY</u>																					
Good																					
Potential Pollution		⊙																	⊙		
<u>AIR QUALITY</u>																					
Good																				⊙	
Potential Pollution																					
<u>BEACH MORPHOLOGY</u>																					
Unstable Dunes																					
Narrow Beach																					
Stable Dunes																					
Wide Beach																					
<u>FISH &amp; SHELLFISH HABITAT</u>																					
High Quality																					
Average Quality																					
<u>WETLANDS</u>																					
Potential Impact																					
<u>WILDLIFE HABITAT</u>																					
Potential Impact																					

### Bay Point Island (Exhibit V-36)

During the past century, Bay Point Island has had a cycle of alternating erosion and accretion. The island's prominent position in the mouth of Port Royal Sound is a major factor contributing to its unstable character.

Bay Point Island is accessible only by boat. Road access to the island would require crossing a wide expanse of marshland.

This relatively remote island is valued for a variety of wildlife, including the osprey. Because of its position at the mouth of the Beaufort River, the waters of Bay Point Island are susceptible to pollution.

Despite good air quality and proximity to abundant fish and shellfish habitats, Bay Point Island has little beach use potential.

## Part Five

### Hilton Head Island (Exhibit V-37)

The 12 miles of ocean shoreline on Hilton Head Island exhibit a diversity of morphological characteristics. Although the northern shore fronting on Port Royal Sound is eroding, the northernmost two and a half miles is very wide and well stabilized with vegetation.

The four miles of beach southward to North Forest Beach have experienced a long period of erosion. The dunes and dry beach are very narrow or non-existent. This section of beachfront retreated 750 feet between 1860 and 1952. /26/

The southern half of Hilton Head Island, with the exception of the extreme southern tip, is stable. The dunes are well-established and undisturbed, and the beach face has a gradual slope. The naturally unstable southern tip has been stabilized with several groins. Hazardous tidal currents in this area, however, make it unsuitable for swimming.

The annual littoral drift rate off the beaches of Hilton Head Island is 72,000 cubic yards of sediment, moving in a southerly direction.

Hilton Head Island affords excellent access to noted fishing and shellfishing in Calibogue and Port Royal Sounds.

## Environmental Review

### EXHIBIT V-37: Hilton Head Island

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY																				
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY																			
	Swimming/ Sunbathing				Power Boating				Sail Boating				Fishing				Overall			
	Least →	→ Most	Least →	→ Most	Least →	→ Most	Least →	→ Most	Least →	→ Most	Least →	→ Most	Least →	→ Most	Least →	→ Most	Least →	→ Most	Least →	→ Most
<u>EROSION/ACCRETION</u>																				
Erosion																				
Unstable																				
Stable																				
Accretion																				
<u>LITTORAL CURRENTS</u>																				
Hazardous																				
Non-hazardous																				
<u>NEARSHORE PROFILE</u>																				
Steep																				
Gradual																				
<u>WATER QUALITY</u>																				
Good																				
Potential Pollution																				
<u>AIR QUALITY</u>																				
Good																				
Potential Pollution																				
<u>BEACH MORPHOLOGY</u>																				
Unstable Dunes																				
Narrow Beach																				
Stable Dunes																				
Wide Beach																				
<u>FISH &amp; SHELLFISH HABITAT</u>																				
High Quality																				
Average Quality																				
<u>WETLANDS</u>																				
Potential Impact																				
<u>WILDLIFE HABITAT</u>																				
Potential Impact																				

# Environmental Review

## Part Five

EXHIBIT V-38: Daufuskie Island

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY												
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY											
	Swimming/ Sunbathing	Power Boating	Sail Boating	Fishing	Overall							
	Least → Most	Least → Most	Least → Most	Least → Most	Least →	Most	Least →	Most	Least →	Most	Least →	Most
<u>EROSION/ACCRETION</u>												
Erosion	②										②	
Unstable												
Stable												
Accretion												
<u>LITTORAL CURRENTS</u>												
Hazardous	②										②	
Non-hazardous												
<u>NEARSHORE PROFILE</u>												
Steep												
Gradual				②							②	
<u>WATER QUALITY</u>												
Good		②						②			②	
Potential Pollution												
<u>AIR QUALITY</u>												
Good												②
Potential Pollution												
<u>BEACH MORPHOLOGY</u>												
Unstable Dunes	②										②	
Narrow Beach		②										②
Stable Dunes												
Wide Beach												
<u>FISH &amp; SHELLFISH HABITAT</u>												
High Quality								②			②	
Average Quality												
<u>WETLANDS</u>												
Potential Impact	②										②	
<u>WILDLIFE HABITAT</u>												
Potential Impact												②

Except for erosion problems, Hilton Head's recreational suitability is among the best of the State's beaches. Fishing, boating, and sailing offer excellent recreational opportunities, and wide, gradually sloping beaches and non-hazardous littoral currents make swimming and sunbathing safe.

### Daufuskie Island (Exhibit V-38)

Although Daufuskie Island has an ocean shoreline, it is not as prominent as the land masses immediately to the northeast and southwest. As a result, the island is partially sheltered from the direct influence of ocean currents and waves and is affected more significantly by the tides and currents of Calibogue Sound. The northeastern shore borders the Intracoastal Waterway.

Between 1860 and 1920, the beachfront retreated 40 feet. /27/ Strong tidal currents could make these waters hazardous for swimming. Fishing and shellfishing are excellent in Calibogue Sound.

Daufuskie Island's recreational potential is only fair because of dangerous currents and erosion.

## Part Five

### Turtle Island (Exhibit V-39)

Turtle Island is undergoing slight erosion while Jones Island to the southwest is accreting gradually. /28/ Both islands are predominantly marshlands, and neither has road access. Because of its proximity to the Savannah River, which is not suitable for bathing or shellfishing, this area is subject to water pollution. /29/ Thus, the island is not suitable for recreation.

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### EXHIBIT V-39: Turtle Island

ENVIRONMENTAL CONSTRAINTS - RECREATIONAL SUITABILITY																				
ENVIRONMENTAL FACTORS	RECREATIONAL SUITABILITY																			
	Swimming/ Sunbathing		Power Boating		Sail Boating		Fishing		Overall											
	Least →	Most	Least →	Most	Least →	Most	Least →	Most	Least →	Most	Least →	Most	Least →	Most	Least →	Most	Least →	Most	Least →	Most
<u>EROSION/ACCRETION</u>																				
Erosion																			●	
Unstable																				
Stable																				
Accretion																				
<u>LITTORAL CURRENTS</u>																				
Hazardous																				
Non-hazardous																				
<u>NEARSHORE PROFILE</u>																				
Steep																				
Gradual																				
<u>WATER QUALITY</u>																				
Good																				
Potential Pollution	●													●				●		
<u>AIR QUALITY</u>																				
Good																				
Potential Pollution																			●	
<u>BEACH MORPHOLOGY</u>																				
Unstable Dunes																				
Narrow Beach																				
Stable Dunes																				
Wide Beach																				
<u>FISH &amp; SHELLFISH HABITAT</u>																				
High Quality																				
Average Quality																		●		●
<u>WETLANDS</u>																				
Potential Impact																			●	
<u>WILDLIFE HABITAT</u>																				
Potential Impact																			●	

# Environmental Review

## Part Five

1 Aerial photographs were reviewed in the office of S.C. Department of Wildlife and Marine Resources, James Island, S.C.

2 Two valuable sources of information were not completed and available in time for use as input to this environmental review:

Coastal Research Division, Geology Department, University of South Carolina, Beach Erosion Inventory for the South Carolina Coast

Hayes, Miles O. et.al., Beach Erosion Inventory of Charleston County, South Carolina: A Preliminary Report, South Carolina Sea Grant Technical Report No. 4. This preliminary report for Charleston County was reviewed by the consultant.

A preliminary report for the remainder of the State will be released in early 1976.

A list of coastal areas under consideration as critical or unique natural areas by the South Carolina Department of Wildlife and Marine Resources was also consulted for this report.

3 Naval Weather Service Environmental Detachment, Station Climatic Summary, Charleston, SC. 1945-1972. Asheville, NC.

Naval Weather Service Environmental Detachment, Station Climatic Summary, Beaufort, SC. 1957-1972. Asheville, NC

Neiheisel, James, 1959, Littoral Drift in Vicinity of Charleston Harbor, Journal of the Waterways and Harbors Division. Proceedings of the American Society of Civil Engineers.

Weather Bureau, U.S. Department of Commerce, Climatological Summary, Georgetown, SC, 1925-1954.



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- 4     Arthur D. Little, Inc., Analysis of Environmental Impact of Port Development in Charleston Harbor, South Carolina, 1974.
- 5     Neiheisel, supra.
- 6     Bumpus, Dean F. and Louis M. Lauzier, 1965, Surface Circulation on the Continental Shelf Off Eastern North America Between Newfoundland and Florida. Serial Atlas of the Marine Environment, Folio 7.
- 7     For reference to Georgetown and Horry Counties, see Map.     The Exhibits indicated refer to the charts in this section which compare environmental constraints with recreational suitability for each of the islands listed.

## Environmental Review

- 8     Bearden, Charles M. and Michael D. McKenzie, 1974, A Guide to Saltwater Sport Fishing in South Carolina, S.C. Wildlife and Marine Resources Department, Charleston, SC.
- 9     U.S. Army Corps of Engineers, 1971, Garden City Beach: Detailed Project Report on Beach Erosion Control.
- 10    U.S. Army Corps of Engineers, 1971, National Shoreline Study, Regional Inventory Report, South Atlantic Division, Atlanta, Ga., at b5.
- 11    U.S. Army, Corps of Engineers, 1970, Survey Report on Navigation, Murrells Inlet, Georgetown County, SC. Charleston, SC., at C-3.

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12 For reference to Charleston County, see Map.

13 Hayes, supra.

14 Talbert, O. Rhett, Jr., 1975, The Atlantic Loggerhead Caretta caretta caretta, on Kiawah Island, S.C.

15 Bearden, supra.

16 U.S. Army Corps of Engineers, National Shoreline Study, supra, at b17.

17 For reference to Jasper, Beaufort, and Colleton Counties, see Map.

18 U.S. Army Corps of Engineers, Survey Report on Cooperative Beach Erosion Control Study at Hunting Island Beach, South Carolina, 1963.

19 Office of the Governor, Division of Administration, Beaufort County Land Use Survey and Analysis, 1973, at 24.

20 Berg, Dennis W. and Morrison G. Essick, 1972, Case Study - Hunting Island Beach, S.C., In: Proceedings of Seminar on Planning and Engineering in the Coastal Zone. Coastal Plains Center for Marine Development, Charleston, SC.

21 Ibid.

## Part Five

22 Beaufort County Land Use Survey and Analysis, supra, at 24.

23 U.S. Army Corps of Engineers, Survey Report on Cooperative Beach Erosion Control Study at Hunting Island Beach, supra.

24 Beaufort County Land Use Survey and Analysis, supra, at 24.

25 National Shoreline Study, supra, at b20.

## Environmental Review

26 Ibid., at b21.

27 Ibid., at b21.

28 Ibid., at b21.

29 South Carolina Water Resources Commission, 1970, South Carolina Tidelands Report, Columbia, SC.



## Part Six

### Legal Aspects Of Public Beach Access And Recreation

The need for special policies protecting public rights to the use of beaches has been recognized since Greco-Roman times. /1/ From this nation's earliest history, public recreation at the seashore has been encouraged as a matter of public policy. /2/ The expanding demand for beach recreation, however, exacerbates traditional conflicts concerning ownership and use of coastal lands.

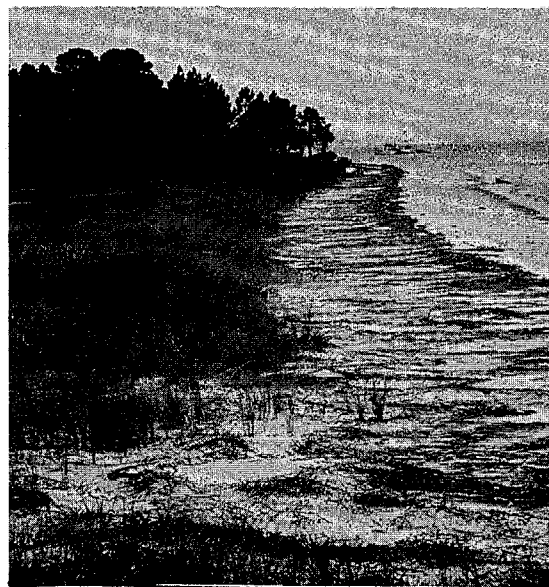
The scholarly literature pertaining to this subject, and even most primary legal sources, are broad in scope. Thorough inquiry requires reference to a variety of issues. But this study focuses on one question: How can South Carolina expand its recreational opportunities by ensuring the public's rights of access to its beaches?

Traditionally, beaches, and access thereto, have been acquired by gift or condemnation. /3/ But escalating demands for coastal property have resulted in gyrating prices, gifts are less frequent, and condemnation or purchase is beyond the financial capabilities of public agencies. It is necessary, therefore, to explore

## Legal Aspects

allocation and access devices which are less dependent on market factors.

This report purports to be neither a judicial nor a legislative brief. It simply examines, in the context of doctrines and precedents, current judicial, legislative, and administrative attempts to increase the public's access to coastal recreation. Review of their effectiveness and possible alternative approaches suggest specific applications by South Carolina's State and local governments.



# Legal Aspects

## Part Six

### Physical Boundaries And Jurisdiction

"Beaches" generally refers, in the law, to areas which border the sea and are subject or adjacent to the ebb and flow of daily tides. For the purposes of this study, the following designations have been accepted:

Ocean Waters

\_\_\_\_\_ Mean low tide /4/

Foreshore

\_\_\_\_\_ Mean high tide

Dry Sand Area

\_\_\_\_\_ Vegetation line /5/

Uplands

The "beach" consists of both the foreshore and the dry sand area. Throughout most of this country, the public has property rights in the foreshore because each state originally owned the ocean

tidelands as an inherent attribute of its sovereignty. /6/ Today, these lands are either in the state's ownership or subject to a public trust for commerce, navigation, and, in some jurisdictions, recreation. /7/ The United States Supreme Court established that the common law rule puts the tidelands boundary at the mean high tide line. /8/ But there are several state variations from this principle. /9/

Current Georgia litigation seeks to determine ownership of that State's foreshore and tidal marshes. /10/ The controversy, centered on 13 acres of beach, dunes, and accreted land at St. Simon's Island, arose because of drastic changes in the shoreline during the past thirty years. As the beach advanced, paths were extended to the ocean, and vegetation covered the accreted lands. By 1973, developers claimed the land and were issued a building permit to construct 200 condominium units and a recreation center there.

The State of Georgia, relying in part on the public trust doctrine, contends that its right to ownership of the beaches to the high water mark dates back to the feudal system of land tenure. Even subdivision development in 1911 did not end public use of the beach. Four different claims of ownership complicate the case, but the legal

## Part Six

arguments are based on disputed State constitutional and statutory provisions. Since the Georgia Supreme Court is likely to base its decision on these, the conclusion of this controversy may have little impact on South Carolina beaches.

South Carolina's foreshore includes extensive lands. There are approximately 1,088,968 acres from the mean high tide to the three-mile State ocean boundary. /11/ In estuarine areas alone, i.e., where fresh water from the land meets the salt water of the sea with a daily tidal flux, some 660,808 acres lie landward from the mean low water mark. /12/ Thus, an area slightly less than the size of Rhode Island is twice daily uncovered by tidal waters to constitute, with the dry sand area and the uplands, the State's remarkable beaches.

The ownership and legal status of South Carolina's tidelands, particularly its marshes, has long been a subject of academic scrutiny and public furor. /13/ In its 1928 landmark decision in Cape Romain Land & Improvement Co. v. Georgia-Carolina Canning Co., /14/ the State's Supreme Court remarked that

(t)he title to land below high-water marks on tidal navigable streams, under the well-settled rule, is in the State, not for

## Legal Aspects

the purpose of sale, but to be held in trust for public purposes. /15/

Some commentators have contended that this statement is dicta and should not be read to prevent private parties from obtaining title to marshlands. /16/ But the State Attorney General has consistently held that the statement is part of the case's holding and precludes sale except by legislative act. /17/

The principal compromise position is that the State owns the tidelands in trust for the public and any grant purporting to convey such land will be strictly construed. /18/ In a definitive report, the South Carolina Water Resources Commission declared the State's prima facie claim of title in its tidelands, which are "held in trust for and subject to the public purposes and rights of navigation, commerce, fishing, bathing, recreation or enjoyment, and other public and useful purposes . . . ." /19/

South Carolina has title to all lands below the mean high tide mark out to the three-mile jurisdictional limit. The only exception is when there can be proved a clear, unbroken title emanating from a grant by the King of England, one of the Eight Lords Proprietors, or the State Legislature. Hence, the courts

have not fully resolved the State's title to all beaches. Generally the State allows alteration of its public lands in certain instances, but not the filling of marsh which would alienate the tidelands and effectively create private lands from the public domain.

The exact location of the high water mark frequently is a matter of controversy. Surveyors rely on tidal benchmarks as the base for their measurements, but South Carolina does not have enough of these concrete posts to gauge accurately the demarcation line. When the line between benchmarks must be interpolated, inaccuracies can include hundreds of acres. In response to these problems, the Water Resources Commission, with the assistance of the Coastal Zone Planning and Management Council, is placing additional benchmarks.

Even unchallenged recognition of the public's rights in the tidelands does not alleviate the nation's critical beach recreation problems. With the dry-sand portion of the beach and the uplands subject to private control, public enjoyment of the beaches is seriously threatened in two ways. First, private littoral owners /20/ often restrict use of the dry-sand area, and only on the foreshore can the public sunbathe, picnic, and spread towels.

Second, many beaches are isolated, being inaccessible, de facto private beaches, by natural barriers or uplands access restrictions imposed by private owners. In this way, coastal subdivisions and property owners can virtually monopolize beaches, manifested in "Private Beach, No Trespassing" signs. /21/

Public rights to the foreshore notwithstanding, citizens ordinarily are not entitled to traverse privately owned lands bordering the sea. /22/ This rule was early recognized in South Carolina, when a landing on a navigable river was found not to be public since there was no access thereto by a public road. /23/ Evidence that a road had been used by the public by more than twenty years, the South Carolina period of prescription, was found insufficient to establish a prescriptive right in the public since such use would be presumed to be with the landowner's permission. /24/

A recent case had upheld this principle. /25/ For more than fifty years, a recreation area near a riverbank had been used for swimming, fishing, and picnicking with and without the owner's permission. Both the recreation area and an access road leading from it to the public highway were owned by the defendant, who sought to deny such use. The Court held that the public had not



## Part Six

acquired a prescriptive right. Nor was the landowner's intent to dedicate a second road to public use established by proof that the county had cut the road at his request and with his assistance, since such county aid to private citizens was customary. /26/

This report, therefore, addresses the two issues central to public rights in the seashore: (1) what are the nature and extent of public rights in both the foreshore and dry-sand area, whether derived from state ownership or protected by public trusteeship, and (2) how can public access to beaches be ensured in light of private ownership of the uplands?

## Legal Aspects

### The Common Law Tradition

Throughout the centuries, there has developed a doctrinal core of rights pertaining to public beach access. Lawmakers, nevertheless, have re-defined allegedly "immutable" rules of property law to accommodate contemporary social needs. Often courts fashion the initial institutional response to social problems only to frame political and legal theories for subsequent legislative action. To understand the inherited legal tradition, to evaluate current practices, and to recommend alternatives, a historical analysis of alternative legal doctrines is first required.

### The Inherited Tradition

The concept of public rights in the shore was established in Greek and Roman law. /27/ Roman jurisprudence -- developed in a commercial, urbanized society, with a conspicuous heritage from the sea-dependent Greeks -- held that, by "natural law," the "air, running water, the sea, and consequently the seashore" were "common to all". /28/

Ownership of the beach was thought to be in the arms of the adjoining land . . .

in the owner of the adjoining land . . . (But) the public use of the seashore, as of the sea itself, is part of the law of nations . . . . (Consequently, the beach) cannot be said to belong to anyone as private property, but rather are subject to the same law as the sea itself, with the sail or sand which lies beneath it! /29/

Thus, the Mediterranean's shores were common to all citizens. Subsequent commentators draw extensively from this foundation. /30/

With the Roman Empire's decline, public ownership of tidal areas generally was usurped by feudal lords. In the Dark Ages, the English King's sovereign claim to the beach became confused with his personal private property claim. /31/ By 1066, the absolute ownership of all English lands was vested in the Crown. Saxon grants, extended by the Norman kings, vested most of the English foreshore in particular subjects or in the Crown. /32/

In part a reaction to the king's proliferating private landholdings, the Magna Charta signalled a shift back in the direction of public rights in the seashore. Yet it was only grains of public interest protection which permitted the document to be a source of adaptation for the law of the foreshore.

With the commercial and industrial revolutions, unrestricted access to the foreshore and riverbanks were necessary for shipping and fishing. The courts, while not entirely abandoning the Roman conception of common ownership, spoke in terms of particular guaranteed public rights. Although this "easement" approach presumed private ownership, its flexibility saved the state the great expense of acquisition and the political hazards of re-claiming private coastal property, including the king's. Moreover, by the gradual expansion of existing easements and addition of new ones, the law could effectively expropriate the beaches. /33/

The idea that the foreshore had been omitted from the scope of royal coastal grants was first advanced in the 1560's and was judicially accepted in 1632. /34/ This retained royal title,

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the jus privatum or king's personal right, originally encompassed complete ownership of the foreshore. But political pressure forced the Crown to stipulate that its title was held for public purposes, thereby transforming the jus privatum into the jus publicum, or public right. /35/

The Crown's interest evolved to be perceived as the people's. This theory was ratified, in response to economic and political pressures, during the Elizabethan era. Lawyers successfully asserted in foreshore disputes that there was to be a presumption that title was vested in the Crown for the people's benefit:

Maximum benefits are not obtained from a resource unless (1) conflicting claims are given priorities that accurately reflect their relative importance and (2) provision is made for multiple use to the extent that less pressing claims can be allowed without seriously damaging the higher priority uses. /36/

By the Glorious Revolution, Parliament had assumed the trusteeship. /37/

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### American Application

This seeming re-emergence of the Roman common rights concept as applied at least to tidelands was a significant influence on property law in the United States. Since the King's title to lands discovered in America was limited by seventeenth century English common law, the foreshore was thought to be not his private property, but as land in trust for the protection of public uses. /38/

With the American Revolution, this proprietorship of both the personal and representative portions of the royal title passed from Parliament to the citizens of each state. This position, the basis for the "public trust" theory, is not far removed in theory from the concept of Roman common ownership.

Despite the influence of the Roman model, commercial development after the Dark Ages made untenable the pure concept of common ownership of tidal resources. Laissez-faire theorists replaced the concept of public trustees with the interplay of the "invisible Hand", private owners, and easements. /39/

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Each American state originally held complete legal and equitable title in the foreshore as a representative right (jus publicum). Portions of that complete ownership for which public purposes were deemed unnecessary were transferred to the jus privatum as freely alienable state rights. Confusion regarding the retained state interest and the general public's was inevitable.

The principle of public interest in the tidelands was derived, however, from the substantial demand for access to the sea for fishing and commerce. Although the Common Law defines public right in terms of precedents based upon past uses and demands, the principle itself requires adaptation in accordance with changing views of the general welfare. Upon this basis, alternative common law theories can be employed to litigate public beach rights.

### The Public Trust Doctrine

A more generalized version of the jus publicum, /40/ the public trust principle holds that some property rights in certain lands can never be alienated from the general public. The doctrine is supported by several rationales with a common theme: property rights in certain natural resources essential to society must be vested in the general public. /41/ Its past applications illustrate the doctrine's responsiveness to public pressures.

Its historical growth suggests two alternative lines of development for the public trust doctrine: trusteeship of a wide range of rights (an expanded easement theory) or trusteeship in the public interest (the common ownership model). Both, however, leave the trustee with the duty of weighing all variables to accomplish and maximize the trust's intent. Judicial intervention would be appropriate when the state, as active trustee, fails to maximize the beneficiaries', the public's, interests.

Citizens and their lawmakers are themselves subject to these trust restrictions. In its most decisive public trust decision, Illinois v. Illinois Central Railroad, /42/ the

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United States Supreme Court articulated broad constraints imposed by the trust:

The State can no more abdicate its trust over property in which the whole people are interested, like navigable waters and soils under them, so as to leave them entirely under the use and control of private parties, except in the instance of parcels can be disposed of without impairment of the public interest in what remains, then it can abdicate its police powers in the administration of government and the preservation of peace. /43/

Thus, the states, and their courts, are individually responsible for defining the extent of public rights in trust properties, such as the tidelands. And the state, as trustee, can act only to improve the public right. /44/

The public trust literature identifies the protected interests as those which were socially or politically important at the time legal protection was extended to public uses. Although particular interests, such as fishing and navigation, have been specifically

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defined in trust terms, the doctrine has been applied in a quasi-cost/benefit manner. In fact, there is a significant correlation between (1) the supply and demand of recreational beaches and (2) the legal rights of public access. /45/

Why, then, in view of the unprecedented demand for coastal recreation, does the public trust doctrine not provide a sufficient mechanism for ensuring public access to beaches?

The answer is part historical, economic, and political. /46/ Before the reversion to the concept of sovereign trust in the thirteenth century, the Crown had already granted private titles to much of England's coastal lands. Anglo-American property law, never fully embracing the Roman common ownership concept, therefore, cast the public interest in the foreshore as a dominant public easement. The economic forces of the private real estate market, reacting to intensified competition for coastal recreation sites, have ignored public recreation needs. Furthermore, coastal municipalities often subordinate regional or general public interests to local planning and political pressures.

Because the original grants were made to the different colonies, the Illinois Central decision indicated that the title is "held interest for the

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people of the State". /47/ But numerous constitutional arguments may persuasively extend the interests generally, to all United States citizens. /48/

If a state's lands, having been passed directly from the king, are held as jus privatum, then interests in them are constrained by traditional limits on the Crown. On the other hand, if the state holds them as representative of the citizens, then all actions must be justified both in terms of the state's citizens general welfare and the national populace's "easement" interests. /49/ Thus, both the state and affected citizens can assert public rights under this theory.

With the emergence of environmental law, the public trust has been employed in the protection of public parks. /50/ Three clear limitations have been placed on the authority of government as trustee: (1) the property cannot be sold; (2) the property must be maintained for particular types of public uses impressed with the trust; and (3) the property must be available for general public use. /51/ The minimum limitation on the state's power of regulation should, therefore, be that it must keep its trust lands available to the general public. /52/

Until recently, purely environmental and recreational considerations had never been embraced by the public trust doctrine because the scope of the police power, delineating the "general welfare," was not adequate to do so. /53/ At its inception, the states' police power was thought to be properly concerned only with "the public peace, safety, morals, and health". Today, the concept of the "general welfare"

is broad and inclusive . . . .  
The values it represents are spiritual as well as physical, aesthetic as well as monetary. It is within the power of the legislature to determine that the community should be beautiful as well as clean, well-balanced as well as carefully patrolled. /54/

The potential scope of permissible uses under the public trust doctrine is therefore limited solely by the scope of contemporary perceptions of the general welfare.

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### Custom

Other traditional common law concepts have been recently employed by state courts to respond to the erosion of public recreational opportunities in the nation's shoreline. Several approaches have significant potential for preserving existing beach uses and designating new public accessways. /55/

"Custom" -- originated in medieval English feudal villages where inhabitants enjoyed land rights long before the evolution of recording systems -- is founded on the belief that century-old uses must be founded on legal rights conferred in the past and should be recognized even though never formally recorded. To be enforced, the custom had to have existed so long that "the memory of man runneth not to the contrary". /56/

A custom is defined as a usage or practice of the people which, by common adoption and acquiescence, any by long and unvarying habit, has become compulsory, and has acquired the force of law with respect to the place or subject-matter to which it relates. /57/

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To be enforceable, the custom must be (1) "ancient," (2) reasonable and peaceable, (3) exercised without interruption, (4) of certain boundaries, and (5) obligatory and not inconsistent with other customs or laws. /58/ Long ignored in this country, a recent beach access case breathed life in this doctrine. /59/

The Oregon Supreme Court, in State ex rel. Thornton v. Hay, /60/ preserved that state's dry-sand beaches for public recreation with a new application of this theory. The State sought to enjoin the defendant motel owners from creating a private beach by constructing fences and making improvements in the dry-sand area to which they had title.

The Supreme Court, affirming a lower court's decision, found that throughout the State's history, the beach had been enjoyed by the public under claim of right as an adjunct of the tidelands. It held, selecting this theory rather than other specifically addressed common law doctrines, that this usage amounted to a valid custom which established public recreational rights in the beach regardless of the title of record held by private landowners.

The Court asserted that a public use is sufficiently immemorial if it can be traced to the beginning of an area's political history. /61/ But the decision's scope may be read in different ways: either as a binding declaration of the rights of all littoral owners or as applying only to the litigated beach area. Since no evidence of other beach property was offered, the Court could have found a statewide custom only by judicial notice. If read broadly, consequently, the holding may violate fundamental due process principles because it declares ex parte a new public right absent supporting evidence and without giving interested property owners a chance to be heard. /62/

The narrow interpretation, free of these constitutional and evidentiary difficulties, allows that the doctrine applies to individual beaches only if the state can prove long public beach usage in addition to the other elements of a valid custom. Complex litigation is a practical prerequisite, therefore, to the opening of many beaches to the public, under this theory.

Custom -- applied with the narrow, more tenable interpretation -- essentially permits the state to claim an easement by public use on particular access ways. It cannot, by single claim, serve as the basis for declaring

that an entire state's beaches belong to the public. It promises most help when, as in Thornton, littoral owners have been unaware of their title in the beaches and the state can demonstrate long public enjoyment of the site.

### Prescription

Prescription has supplanted custom to be the principal legal theory governing the creation of public easements in privately-owned lands. When the public acquires such an easement, title to the land remains in the owner, but use of the land for recreational purposes must now be shared with the public. Under this doctrine, such an easement can be created through open, continuous, and adverse use of the land without the owner's permission. /63/

Prescriptive rights are acquired

only by actual, continuous, uninterrupted use by the claimant of the lands of another, for a prescribed period. /64/ In addition, the use must be adverse under the claim of right and must either be with the knowledge of the owner or so open, notorious and visible that



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knowledge of the use by and adverse claim of the claimant is imputed to the owner . . . The use or possession must be consistent with the owner's use and must not be a permissive use, for the use must be such that the owner has a right to legal action to stop it, such as an action for trespass or ejectment. /65/

Uses not meeting these criteria are generally characterized as permissive uses pursuant to an express or implied license.

In Seaway Co. v. Attorney General, /66/ the Texas Supreme Court relied on this prescription theory to establish public access to the beach. Prior to this decision, fee ownership of the dry-sand beach was generally in private ownership. /67/ Seaway Company owned a portion of the Galveston Island beach and, as a common practice there, erected barriers to exclude the public from the uplands below the vegetation line. The Court, ruling against the Company, found that the public had continuously used the beach throughout the requisite ten-year statutory period and that adverse use for access to the water and recreational purposes had been established. /68/

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The doctrine was also discussed, although not relied upon, in the Oregon Thornton decision. The Court acknowledged that actions in ejectment or trespass cannot be brought to determine beach rights, but noted that public exclusion is possible, a requisite of prescription, by posting and fencing lands.

A Florida Court, in City of Daytona Beach v. Tony-Rama, Inc. /69/ applied the prescription theory to bar grants of a building permit to the defendant to construct an observation tower on the dry-sand area adjacent to the recreational pier it operated on beach it owned. The Court found all the theory's prerequisites and ruled that, for the general welfare, the city could exercise supervisory jurisdiction over the area and construct needed facilities not inconsistent with the public easement.

There are several problems in applying prescription to meet the demand for beach access. It is questionable, Seaway notwithstanding, whether the common law recognizes prescription by the public, apart from the exception of public highways, as distinguished from the prescription of private easements.

Secondly, a recreation easement, precluding other interfering uses

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of the land, could unfairly fix the land's uses forever. Finally, the declaration of public prescription in certain beaches could result in the closing of other privately-owned beaches to the public. /70/

### Dedication

Dedication, like prescription, refers to rights in particular land parcels, but relates only to public uses. /71/ To be enforceable, the theory depends on both the owner's intention to offer specific land or interests therein and acceptance by the public, and both can be either expressed or implied.

Its most common context is roadway easements, but dedication of recreation lands has been implied when owners made appropriate references on recorded subdivision maps or advertisements. Because of the doctrine's controversial application to California's beaches, implied dedication merits close scrutiny. /72/

To establish common law implied dedication,

(n)o formalities are necessary; conduct showing an intent by the owner to dedicate land and an acceptance by the public completes the dedication. Both intent to dedicate and acceptance may be implied from public use and thus of his intent to donate the land. The public use itself may be taken as evidence of acceptance.

Once the implicit offer has been accepted, the owner cannot revoke his dedication. The public cannot lose its rights through non-use or adverse possession. The public normally takes only an easement by implied dedication, with the owner retaining the underlying fee; a few courts, however, have found dedication of a fee simple title in circumstances indicating an intent to give such a title. /73/

Until the 1960's, courts, refusing to find these requisites in beach access cases, held that long, unobstructed public use of beaches, like forests and prairies, was presumed to be under a revocable license from the owner. /74/

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In 1964, the Texas Court in Seaway /75/ first applied the dedication doctrine to beaches. By relying on the same evidence of adverse use that established a prescriptive easement, the Court found an intent to dedicate, but it did not discuss the suitability of roadway precedents to beaches. /76/

It was left to the Oregon Court in Thornton /77/ to reject the open-lands limitations of earlier cases. Citing Seaway, the Court held that undisturbed public enjoyment of the beach for more than sixty years had established an implied dedication of a recreational easement. Substantial recreational use distinguished beaches from open lands. /78/

The most important application of implied dedication to beach access is found in the California Supreme Court's single opinion in two similar beach access cases, Gion v. City of Santa Cruz and Dietz v. King. /79/ Their significance warrant close study of their facts.

Gion owned an irregular strip of unimproved land, between the ocean and a city street, which had been used primarily as a parking area by citizens who proceeded to the water to swim or fish. The only objections from the owners was

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the occasional posting of "Private Property" signs, which were quickly torn or blown away, but nobody was ever asked to leave and when requested, permission to use the access way was never denied. Since 1900 the city had maintained the land to improve parking conditions. The owner brought a quiet-title action to determine his right to develop the land.

Dietz brought a class suit on behalf of the public to enjoin the private property owner, King, from blocking public use of a beach-access dirt road, which crossed King's land. The road and the sandy beach had been used by the public "for at least 100 years". /80/ Prior owners' efforts to collect tolls were sporadic and ineffectual.

In both cases, the Court held that there had been an implied dedication of an easement for recreational purposes because the public had used the land for more than five years. Since adverse use was well established in both cases, the Court looked not to the interest and activities of the owner, but to those of the public. The distinction between an easement acquired by implied dedication and one acquired by prescription was made academic. Thus, in California, the burden of proof is on the landowner to

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overcome a prima facie showing that the public has established a right to the use of the shoreline. /81/

Dedication has also been used to enforce public rights against particular claims by local residents. In Gerietz v. City of Long Beach, /82/ the New York court invalidated an ordinance which restricted to local residents the use of a municipally-owned beach which had been enjoyed by the public at-large for some thirty years. Such use, in the court's opinion, created a complete dedication of the park to general public use: the offer was comprised of the city's supervision, maintenance, and collection of admission fees; and the long, public use constituted the accep

The Court also held that, when the city dedicated the property, it subjected itself to a public trust for the benefit of the general public, so that the land could not be diverted to other uses or sold without express legislative authority. Dedication, therefore, is an important theory in cases concerning public beach land since rights in public land may not typically be acquired by prescriptive use. /83/

### Jus Publicum

The public trust and the jus publicum doctrines may be distinguished for specific application to municipally owned beaches. In Borough of Neptune City v. Borough of Avon-by-the-Sea, /84/ the New Jersey Supreme Court held that the jus publicum makes impermissible not only the closing of access to the fore-shore to nonresidents, but also the charging of different fees to residents and non-residents for use of the beach. /85/

In Avon-by-the-Sea the dry-sand area of the beach had concededly been dedicated to the public, but the court found that the jus publicum must include the rights of bathing and recreation. Thus, municipalities "may not discriminate in any respect between their residents and non-residents". /86/

The New Jersey case significantly characterized public beaches, like park lands, governed by the public trust in assuring equal access to all citizens, regardless of residency, at least where the uplands are owned by a political subdivision of the state and is used for not inconsistent with public access. But

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the effect of the jus publicum is unclear when the uplands are privately owned or used by the municipality for purposes inconsistent with public usage. /87/

Avon-by-the-Sea held that, by virtue of the jus publicum the foreshore must be equally accessible to all. Rights in the foreshore, though, are meaningless unless access on the dry-sand area is provided. In that case, it was not necessary to expand the theory to prevent full recreational use of the dry-sand area because it had already been dedicated by the municipality. In the case of some private lands, this may be accomplished through use of the Gion-Dietz dedication theory.

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### Summary of Common Law Solutions

The aforementioned beach access cases and historical background provide traditional concepts to meet the challenge of increased demand for beach recreation. These approaches have considerable potential in public beach rights litigation, but they pose no complete resolution of the problem.

The right of public access to beaches under Common Law is clouded. But, collectively and individually, they offer little broad assistance to South Carolina advocates of expanded public beach access.

The cited cases share certain important elements:

- (1) They recognize access to beaches as an essential public right;
- (2) They acknowledge the special character of beaches as recreation lands and the public interest therein; and
- (3) They all rest, in one fashion or another, on public use and expectations

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which aspired into a right to access and use.

Ad hoc adjudication, nevertheless, does not constitute effective resource planning. In addition, most of the rulings, their geographic application, and their doctrinal parameters are unclear, and each has particular shortcomings.

The public trust and jus publicum concepts, to be effectively applied to beach access cases, need development further than the dicta in the New Jersey case and scholarly treatises. /88/ Moreover, restricted municipal beaches are not the problem in South Carolina. Neither do its courts enjoy the benefit of a beach access statute, as did those in Texas and Oregon, which reflect legislative approval of the expansion of traditional legal concepts.

Custom has rarely been applied by state courts and offers the possibility of broad application only in later-settled, non-urbanized states in which the coastline is primarily open land. /89/ Since custom must be proved in fact, it is unlikely, except with regard to particular parcels of land, that the doctrine has potential significance in South Carolina, where the coast has been long-settled and greatly used for commercial purposes. /90/

Similarly, both prescription and dedication apply only to specific sites. Neither permits a generalized approach to satisfying the demand for beach access. Although these doctrines may be useful in the reclamation of beaches previously used for public recreation, they offer little as means for expanding public beach access and use opportunities.

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### Beach Acquisition

Since the private market has not provided adequate public access to South Carolina's beaches, there is need for collective, allocative decision-making by private interests and government. Public agencies at the local, State, regional, and Federal levels can induce, compel, or otherwise influence landuse determinations which can expand the State's coastal recreation opportunities.

Public beaches, their ecological vulnerability notwithstanding, have been dealt with as parks. The applicable law, therefore, is that which has been formulated in open space and recreation planning. Principally through acquisition and exercise of the police power, public agencies have allocated coastal resources.

Acquisition -- the securing by a public agency, for compensation, of the fee simple interest /91/ or an easement through purchase or condemnation -- is the most direct approach to the expansion of public beach facilities. There is no question that the Federal government, the states, and authorized municipalities can constitutionally purchase or condemn land for recreational purposes. /92/

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Courts have long held that parks and other recreational facilities are legitimate objectives of public land use. /93/

There is neither a statute nor a judicial decision in South Carolina which expressly authorizes the condemnation of access roads to public waters. The State Development Board, which has the power of eminent domain, /94/ is empowered to "establish parks or playgrounds for the use, benefit, recreation and amusement of the people of this State . . . with all necessary or proper opportunities, roadways, lakes . . . which it may . . . deem desirable /95/ and to acquire by purchase, gift, condemnation or in any other matter lands, waters, . . . rights of way, easements, . . . or any other property of any kind . . . as necessary or useful in carrying out any of its powers". /96/ But like the Federal Constitution, the South Carolina Constitution provides that "private property shall not be taken for private use without the consent of the owner, nor for public use without just compensation being first made therefor". /97/

Direct Federal acquisition has resulted in coastal national parks /98/ and National Seashores. /99/ The basic feature of national seashore legislation

is the federal government's acquisition of large tracts of beach and open land which thereafter are kept open, subject to minimum development to accommodate tourists. /100/

At Cape Cod, for example, Congress attempted to preserve, through zoning and eminent domain, the historic character of town centers. The Secretary of the Interior is directed to issue standards for his approval of municipal zoning regulations. He may not thereafter acquire by condemnation, without a variance, any property covered by an approved regulation. /101/

This technique, called "encouraged zoning," leaves the zoning power to the states. A local advisory commission must be consulted by the Secretary before he can issue any permits for commercial use or establish any public recreation areas within the Seashore.

Objections to the National Seashore approach are several. The most obvious is expense: even the Federal government cannot afford to purchase large areas of semi-developed and commercially valuable South Carolina shoreline.

Economic tension is inevitable under this mechanism. Open space preservation and expanded public beaches

makes the entire area more attractive, but the construction generated by increased tourism is forced into a greatly reduced land area. The increased need for municipal services results in higher taxes on unrestricted land, and resident homeowners bear these hardships.

Two conflicting voices in opposition would come from the private sector. Those coastal residents and developers who have enjoyed the economic benefits of the demand for beach recreation opportunities would oppose any action which might undermine potential construction. Others would oppose the flood of tourists, perhaps greater to a National Seashore than to private and municipal beaches, that would tax the service capacities of the local communities.

Another federal acquisition program is within the jurisdiction of U.S. Fish and Wildlife Service, Department of Interior. Although some recreational facilities are occasionally included on these lands, they generally do not contribute to the available supply of public beaches. Also, Interior, under the Surplus Property Program, is authorized to turn over surplus federal real estate to localities for recreational purposes at minimal or no cost. /102/



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### Federal Assistance

Congress has also provided for grants to states, counties, and cities for the acquisition of recreational lands. /103/ The most important of these are the Land and Water Conservation Fund, managed by the Bureau of Outdoor Recreation, /104/ and the Open Space Land Program, administered by the Department of Housing and Urban Development. /105/

The Fund is financed through revenues from user fees at federal outdoor recreational areas, sale of surplus federal property, the federal motorboat fuel tax, and off-shore oil and gas leases. These funds can be supplemented by Congressional appropriations. To qualify for grants, a state must have formulated a comprehensive outdoor recreation plan, as South Carolina has done, and the project must be consistent with the plan, as beach access acquisitions would be. /106/

BOR cannot fund merely parking facilities or similar recreation support items. The State or local community can receive funds, however, as part of a park project and use them for comfort stations or the like. The only current BOR-funded State park project is Hunting Island.

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The Open-Space program, serving both recreation and other purposes, authorizes matching grants of up to fifty percent to states and local governments for the acquisition and limited development of, among other things, parks. Projects must be urban in character, and priority is given to those which are especially accessible to minority low-income and moderate-income citizens. /107/

Particularly in the densely populated Charleston area, the HUD program may offer some potential for federal assistance in acquiring beaches and accessways. The availability of suitable land, however, is a prerequisite that may be difficult to meet because of the effect of HUD priorities as to location and the fact that not all the area's waterfront lands are suitable for beach use.

Unfortunately, the program's level of funding, lower than the Land and Water Conservation Fund's, and competing non-recreational projects make this a difficult approach to beach acquisition. Less-than-fee simple acquisition under the program, nevertheless, merits exploration.

Under the Federal Surplus Property Act, /108/ the General Sources Adminis-

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tration is authorized to dispose of excess or "surplus" government property. The responsible agency must first determine that the property is no longer necessary to its program. Other Federal agencies are then informed of the land's availability and may apply to GSA for it. State and local governments usually are not informed of these proceedings. But such property is available to state and local governments for public park and recreation purposes. Application for the Folly Island Coast Guard Station, should its present use be discontinued, would be appropriate.

### State Programs

States have, in recent years, initiated noteworthy large-scale programs, including acquisition and grants-in-aid to local government. /109/ Bond issues have been the mechanism for generating revenues; and with matching grants, local governments have multiplied every dollar they have committed by three or four state and federal dollars.

South Carolina's Heritage Trust Program provides for the dedication and management of areas with outstanding natural and cultural characteristics.

The program's goods include research and education, inventory and preservation of sites, and promotion of conservation and recreation consistent with their natural features. Its acquisitions are primarily for the purposes of preservation and protection and must be in perpetuity. User fees are permitted, but the program is essentially a conservation trust. For that reason, and for its reliance on external funding or donations, it offers little relief to the State's public beach access and recreation problems. Whatever access measures are adopted, however, should be coordinated with this program insofar as their site-specific objectives are consistent.

Some states have authorized municipal conservation commissions. /110/ These designate, request, and spend the municipal government's funds, in coordination with the state and Federal agencies, for resource planning and acquisition of open space and recreation lands, including beaches.

### Acquisition Potential

Inter-governmental funding of acquisition of public beaches and accessways promises a realistic oppor-

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tunity for expansion of coastal recreation opportunities. South Carolina's completion of most of the program's planning prerequisites makes this approach promising, despite the limited funds available relative to public demand.

To avoid price escalations in the typically long delay between enactment of a park activity and its execution, authorization and acquisition should be simultaneous by use of a legislative taking. Perhaps a drastic procedure to some, the legislative taking is best suited for halting speculation and further, accelerated development. This can be avoided by the government's taking title to all land upon authorization, payment bearing interest to follow. /111/

Federal acquisition measures have been proposed for the nation's undeveloped islands, but they do not directly address the problem most acute in South Carolina: conservation and preservation in areas which are already partially developed. /112/ Less-than-fee techniques are necessary if governmental acquisition costs are to be kept favorable and local economies kept intact. /113/

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### Easements

Why are easements of particular importance to a beach access plan? First, the responsible State or local agency has no need to own the entire fee if its objective is solely to guarantee public access to the beach at market-responsive intervals. In today's economy, acquisition becomes most feasible only when the public agency is required to acquire and manage only those rights which are essential to accomplish its objective. Furthermore, to be most consistent with South Carolina's philosophical emphasis on private property ownership, a beach access plan must leave intact much of the present private land tenure along the coast and disturb as few of those owners' rights as possible. /114/

### Advantages and Hazards

Easements are merely one way to separate the beach access component from residual rights. A private or public agency could, for example, acquire the whole fee from an owner of beachfront property and transfer it back subject to a "restrictive covenant" that the owner will not interfere with public passage

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over his land to the beach. But disputes about enforcement and future application are inevitable under this, and other, related approaches. Thus, easements are the most well-established non-zoning means of accomplishing the desired objective.

Apart from its comprehensive application, there is little that is known about this approach. As long ago as 1893, the Boston Metropolitan Park Commission was authorized to acquire such rights for park purposes. /115/ Programs have been initiated to preserve land through easements acquired by both public agencies and private organizations. /116/ An important model for innovative easements is the authorizing legislation for the British National Trust. /117/

Since this study treats "access" as more than mere overland passage, it must be noted that "scenic easements" have been recognized as offering more durable benefits than conventional zoning. They were acquired in California upon the advocacy of Frederick Law Olmsted, the pre-eminent recreation planner whose work included New York's Central Park.

Since the 1930's, the National Park Service has acquired easements for scenic purposes along the Blue Ridge and

Natchez Trace Parkways. /118/ Historic Charleston Foundation has been among the many private organizations which have pursued active easement programs through gifts, purchase, and transfer of options.

The theoretical advantages of easements, whatever their objective, have not always been borne out by experience. Not always are they significantly less expensive than the entire fee, nor do they necessarily impose insignificant management responsibilities on the holder.

If public beach access through a recreational subdivision requires the developer/owner to surrender the community's existing character and long-enjoyed resident rights, then a very large percentage of the rights in "the bundle" have been affected, and the cost of such an easement may approximate the value of the entire fee. Also, it is nearly impossible to predict the specific local tax consequences of acquiring beach access easements in a coastal community.

There is an acute awareness in the state legislatures of the usefulness of less-than-fee controls for conservation and public access purposes. Although many states have authorized acquisition programs, few have addressed the

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pertinent common law impediments, such as assignability and enforcement.

Tax benefits may create inducements for the voluntary donation of beach access easements. These include deductions by the property owner against his taxable income if the donation is made while he is alive or from his estate's value if it is made in his will.

There may also be an opportunity to reduce the local property tax. But special rules regarding partial interests in the Tax Reform Act of 1969 may not alter universal deductions. Whether such a South Carolina donation qualifies under the Act as an "undivided interest" where the easement is in perpetuity is one of several questions requiring opinion of tax counsel.

To assume that an easement acquisition program would be relatively simple is entirely inaccurate. All the normal steps involved in land acquisition are present. Given the manpower crisis in public land acquisition, the program might best be accomplished by contract. But in any case, the program would be costly and by no means self-executing.

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### Conservation Easements

An increasingly important legal device in conservation and recreation programs are conservation easements. Essentially, these constitute limitations which a property owner places on the uses to which he may put his property. They may range from comprehensive restrictions requiring that the property be left as a wilderness to those which permit certain forms of development and recreation. The grantor of such a restriction may receive federal tax benefits and be eligible for a reduction in the assessed value of the property. /119/

Because such easements have been specifically authorized by the South Carolina legislature, they merit close scrutiny. Under the statute, conservation easements, as other interests in land, may be acquired by any governmental body or The Nature Conservancy and are enforceable. They may be created by a will, deed, or other written instrument and may be stated in the form of a restriction, easement, covenant, or condition.

An appurtenant easement is an interest in land which one landowner has in adjoining property belonging to another. It may consist of the privilege of doing a certain act on the other's land -- an affirmative easement -- or a right against the other that he refrain from doing something on the land that otherwise would be his right -- a negative easement. The easement is said to "run with the land," meaning succeeding owners are accordingly entitled to the benefits or subject to the restrictions. /120/

The most common example of an appurtenant easement is a right-of-way through another's land, an affirmative easement. These less-than-fee acquisitions offer one alternative to providing public access to the ocean where excessive land costs preclude public acquisition of a beachfront tract.

If the easement is granted to a party who owns no adjacent land, it is termed "in gross." Thus, conservation easements generally are negative and in gross. Although the legal relationship is recognized, there is virtually no case law on negative easements in gross, and restrictive covenants in gross are not binding. /121/

But courts have implemented the policy in other ways: by holding that a purchaser of the restricted land with knowledge of the easement, which may be provided simply by recording, takes title subject to the easement rights of the original grantee, /122/ or by finding that an easement is appurtenant rather than in gross. /123/ Courts have generally held that such easements may be assignable by the terms of the grant. /124/

Conservation easements are not necessarily categorized as negative. It may be argued that their restrictions are necessary to the affirmative purpose of conservation. This ground is strengthened when the grant includes a right of entry for protection of the natural habitat and for observation and study. These cautions notwithstanding, conservation easements, especially those granted pursuant to the statute, are likely to be held enforceable and assignable.

A type of easement that has long been recognized as an assignable property right, even if in gross, is the right to take part of the soil or produce of land: a profit a pendre. Consequently, minerals, timber, and even wild game hunting rights are severable from the fee simple. /125/

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The rights, privileges, and restrictions of a conservation easement are in the nature of a profit a pendre. If the rights to cut timber and to hunt wildlife may be severed from the fee, it follows that the right to conserve timber and wildlife may also be conveyed. And if restrictive covenants as to use of the soil are implied in timber deeds, which are generally in gross, the restrictions of a conservation easement should similarly be enforceable.

### Recreation Easements?

Why, then, cannot a recreation easement be fashioned? Conservation easements themselves were novel a few years ago. There is some authority that novel interests in land may not be created; but in this century, courts have recognized many new types of easements, such as clearance easements around airports and scenic easements along highways.

Such unusual conveyances as the rights to take seaweed /126/ and to place a billboard on another's land /127/ have been enforced as easements. Indeed, the very novelty of the easement may enable a court to weigh the equities -- the value of public

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recreation versus the free alienability of real estate.

Donation of conservation or -- should the legislature sanction a recreational easement approach -- recreation easements allows the property owner to retain the beneficial, though qualified, use of his land while contributing to the State's conservation and recreation efforts. When these easements are donated to a qualified charitable organization -- such as The Nature Conservancy -- the donor may receive considerable tax advantages not only for the year when the gift is made, but also for future years.

First, for tax assessment purposes, the land's value will decrease by the value of the severed rights. /128/ Second, the gift may qualify the donor for a charitable contribution deduction from his Federal income tax. /129/

The value of the gift will vary with the extent of the donor's rights which have been relinquished. A qualified deduction (including the Heritage Trust Program and The Nature Conservancy) for any one year may be thirty percent or less of the donor's income. Any excess of the gift may be carried forward by the individual for the next

succeeding five years. /130/ To determine the conservation easement's value, the Internal Revenue Service suggests that qualified appraisers employ a "before-and-after" approach, comparing the property's fair market value before and after the gift was made. /131/

Special easements -- conservation, certainly, and recreation, possibly -- are practical means of ensuring public interests in conservation and recreation. The tax incentives for property owners and the lesser acquisition costs for public agencies suggest considerable potential for application of this device in South Carolina coastal areas. Although specifically authorized by the Heritage Trust and Scenic Rivers programs, conservation easements have not yet been obtained under either for beach access purposes. /132/

## Tax Considerations

Throughout this report, reference has frequently been made to the tax consequences of beach access measures. Significant incentives for gifts of land or interests therein may be promoted by the State as a means of increasing the number of beach accessways and recreation areas. /133/

### Gifts

Under The Internal Revenue Code, individuals and corporations may deduct the full value of their charitable gifts to publicly supported non-profit organizations such as The Nature Conservancy. Unappreciated property, like cash contributions, is fully deductible up to 50 percent of the donor's adjusted gross income. If the gift is larger, the balance may be carried forward for five succeeding years, subject to the same 50 percent income limitation.

Long-term capital gain property (owned more than six months) is deductible at its fair market value up to 30 percent of the donor's adjusted gross income. Any excess may be carried



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forward for five years, subject to the 30 percent limit. Also, additional tax savings are realized by gift because there is no capital gains tax on the alternative sale.

Under a special election permitted to donors, the 50 percent limitation may be utilized instead of 30 percent for capital gains property. To qualify, the donor must reduce his deduction for all gifts of capital gain property by an amount equal to one-half of the unrealized appreciation with respect to that property. The alternate tax may be advantageous when the value of the donated property exceeds the six-year carryover limitations at 30 percent and when it is desirable to deduct larger amounts immediately, such as the case of an executive nearing retirement.

An individual may wish to donate property or easements for beach access, but desire to retain full possession and use of it for his own lifetime and/or the lifetimes of other members of his immediate family. This type of gift, a "remainder" gift, will give rise to a tax deduction only if the property is a personal residence or farm. The income tax deduction is decreased by the value of the life estate, as determined by IRS actuarial tables. Reservation of more than one life estate may cause a substantial reduction in the value of

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the remainder interest for purposes of the income tax deduction.

Other tax mechanisms are also available as an impetus to donation of beach accessways. If land or easements are given by will, estate and inheritance taxes may be reduced, and the donor retains ownership during his lifetime. Also, land may be traded.

### Tax Abatement

The power to levy or abate taxes may be instrumental in expanding public beach access and recreation opportunities. Apart from the incentives in the Federal income tax laws authorizing deductions for charitable contributions, special property tax concessions by State and local governments have proved to be effective land-use management tools.

Normally, land is assessed at "market value," with the standard being its "highest and best" potential use. It may be found that, to prevent the conversion of scarce coastal open space to intensive uses, tax relief is justified by the public interest in conservation and recreation. Local planning commissions could designate priority sites, and owners could then apply for the classification.

Similar tax concessions, however, have not generally succeeded in accomplishing these objectives. In Connecticut, for example, the practical effect of open space tax relief has been simply to lower the holding costs of land speculators waiting for development opportunities to mature. /134/ This distortion may be corrected by a sales tax on subject property which decreases each year the land is held so as to absorb the tax advantages which short-term speculators may derive from concessions created to encourage land banking. Connecticut's tax, nonetheless, is not expected to have significant effect. /135/ Because equivalent tax concessions can be secured without abandoning development rights, it is questionable whether any beach access tax abatement scheme could have a significant effect. /136/

The most promising concept for land use control through tax abatement is the California model relying on contractual arrangements. /137/ Local planning commissions would designate the potential open space and accessways and would evaluate present uses of these lands to determine if an agreement to abandon development rights were feasible. A contract would then be sought with the owner, and it could not be abridged without community consent. Specific conditions and high penalties

would be included in the contract. But how large need the financial incentives be? Conceivably, it might be less expensive for the government units to acquire rights-of-way through condemnation or compensable regulations.

Notwithstanding these problems, tax abatements for public beach access should be considered by local governments along the coast. This approach eases the political sting of zoning regulations, and its cost may not be as high as direct purchase.

## Regulation

### The Taking Issue

To weigh the applicability of alternative land use regulations to problems of beach access, the institutional limitations of the police power must be understood. This power is the state's authority to regulate citizens' activities in the interests of public health, safety, morals, and the general welfare. /138/

Since the early zoning cases of the 1920's, the doctrine's application has expanded to include not only density

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control and preservation of property values, but also aesthetic, historic, scenic, and architectural objectives. /139/ It is today generally accepted, therefore, that land-use regulations for recreational purposes are a valid exercise of the police power. /140/

The constitutional reference, as the police power constrains beach access mechanisms, is the Fifth Amendment to the United States Constitution: "nor shall private property be taken for public use, without just compensation". By the Fourteenth Amendment, this prohibition has been applied to the states. /141/

This clause was derived from the English nobles' fear of the King's seizures of land for his own purposes. /142/ While colonial regulations provided compensation for physical takings of developed property, many land-use constraints were exercised without any compensation to landowners. /143/

Whenever American governments need land for some public purpose, they have either purchased the land in the private market place or exercised condemnation powers, paying the owner the fair market value of his land. Yet throughout this country's early history, no indirect or

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consequential damage, no matter how serious, warranted compensation.

Justice Holmes altered this tradition in Pennsylvania Coal Company v. Mahon: /144/

While property may be regulated to a certain extent, if regulation goes too far it will be recognized as a taking. /145/

Since that decision, the courts, confronted with "taking" allegations, have employed a balancing test: weighing the regulation's public benefits against the loss of property values. /146/

The distinction between two different types of private economic loss resulting from government activity has been asserted as the basis for a test of land-use regulation's validity:

When economic loss is incurred as a result of government enhancement of its resource position in its enterprise capacity, the compensation is constitutionally required; it is that result which is to be characterized as a taking. But losses, however severe, incurred as a consequence of government acting in its arbi-

tral capacity are to be viewed as a non-compensable exercise of the police power. /147/

Acquisition of beaches and public accessways do not neatly fit either of these classifications. Nonetheless, regulations with these objectives are "less likely subject to constitutional attack if they simultaneously permit private landowners some economic uses for their lands and yet considerably restrict uses in order to achieve public objectives". /148/

The most comprehensive study of "the taking issue" notes cases going both ways on very similar facts, but found a general tendency to uphold regulations with underpinnings of public need, especially if the objective is statewide or regional, rather than simply local. Thus, "the fear of the taking issue is stronger than the taking clause itself". /149/

Apart from the compensation question, broad guidelines regarding the constitutionality of land-use regulations have been well-established. In Euclid v. Ambler, /150/ the Supreme Court's first zoning test, a long-standing standard was asserted:

The ordinance now under review, and all similar laws and regulations, must find their justification in some aspect of the police power, asserted for the public welfare. The line which in this field separates the legitimate from the illegitimate assumptions of power is not capable of precise delimitation . . . If the validity of the legislative classification for zoning purposes be fairly debatable, the legislative judgment must be allowed to control. /151/

State courts must consider, therefore, three factors in determining whether a regulatory measure constitutes a taking without due process of law: (1) the regulation's objectives or basic philosophy; (2) its reasonableness; and (3) its impact on private interests. /152/

Strong deference is generally made in favor of the legislative power to make flexible use of the police power in response to changing economic and social conditions. /153/ With mounting pressures for additional beach recreation opportunities, certain land-use regulations may, as partial solutions, be reviewed as proper exercises of the

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police power and within due process bounds.

### Exclusive Use Zoning

Certain land use regulatory tools may be applied to coastal recreation in such a way as to increase public access. Each requires a trade-off between public and private rights so attention must be focused on the factual situations of illustrative cases. /154/

Special zoning districts may be created to allow for only recreational and open-space uses. Such regulations, when imposed near urban centers, have been declared invalid if they deprive the private shore owner of any beneficial use. Diminution of the land's value is the deciding factor. /155/

Yet "a very high degree of diminution of value of property through restriction of allowable uses may be tolerated if the public necessity is great". /156/ The determinative factors are (1) the appropriateness of the land for the allowed uses; (2) the degree of restriction of reasonable uses; and (3) the court's perception of the public necessity. /157/

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The rationale of McCarthy v. City of Manhattan Beach, /158/ a California beach recreation case, suggests that, given certain conditions, beach recreation districts, or easements therein, may satisfy exclusive zoning requirements. In McCarthy, the Court sustained a zoning ordinance which restricted oceanfront property to recreation purposes. Plaintiffs owned a sandy beach, bordered by the Pacific Ocean and a state park, which had been continuously used by the public for recreation since 1900.

The City sought in 1924 to establish the tract's dedication to public use; and having failed, it cooperated unsuccessfully with the plaintiffs to persuade the county or state to acquire the property. In 1940, plaintiffs attempted to erect a fence that would permit the charging of admission fees and requested, claiming no residential development value, rezoning from "single-family residential" to "commercial".

The proposal rejected, and the fence destroyed by the public, the City adopted a comprehensive zoning ordinance that designated the subject property as a "beach recreation district", permitting enclosure and admission fees. From 1941 until 1950, no efforts were made to implement the permitted beach

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program, and plaintiffs then sought rezoning back to "residential". /159/ Their application denied, they attacked the recreation classification as an unreasonable "taking" by depressing the property's value.

The Court, upholding the ordinance though not dealing directly with the beach recreation zone concept, relied on these arguments: deference to legislative judgments, strict enforcement of the rule that the landowner bears the burden of proof regarding the unreasonableness of regulations, and reliance on conventional police power objectives. /160/

Yet the decision encourages legislative correction of market imperfections regarding coastal uses. It might be possible, for example, to zone only the dry-sand areas of beaches or narrow access swaths so that the privately owned uplands are still useful for residential and other private use.

### Flood Plain Zoning

Although the primary purpose of flood plain districts is protection of the public from flood hazards, outdoor recreation objectives may be included in

their regulations. /161/ Permitted flood plain uses may include parks, playgrounds, and marinas; and recreational access modes may be explicitly included in the enabling ordinance.

The ordinance, nevertheless, must be supported by valid public welfare conditions. /162/ If beach recreation can be tied to more established general welfare provisions, flood plain zoning can regulate shoreline development in ways which can expand public access.

### Building Setbacks and Official Mapping

Another narrow approach, effectively designating recreation as one of several permissible land uses, is the setting of building setback lines, which has been recognized as a valid exercise of the police power. /163/ Setbacks meet all the traditional zoning objectives and may result in the expansion of beach area. /164/

Official maps manifest a municipality's express interest to locate recreation areas at places actually marked on a registered map. There appears to be no reason why a govern-

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mental agency planning to acquire, or have acquired, a beach area cannot apply this technique. Because such designations have been invalidated on grounds of excessive duration, the map must be designed to preserve the beach only for near-term acquisition.

### Subdivision Exactions or Bonuses /165/

It is common for municipalities to require that developers obtain local planning board approval prior to subdivision of property. Similarly, the local government can require, as a condition of plat approval, that the landowner dedicate to public use roads, sewers, or land for parks or schools. /166/ Developers may thereby be forced to bear part of the cost of providing streets, parks, and schools for new residents; but when the need cannot be attributed principally to the subdivision, the city generally bears the cost.

The rationale for this requirement is that

the municipality by approval of a proposed subdivision plat enables the subdivider to profit financially by selling the subdivision lots as home

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building sites and thus realizing a greater price than could be obtained if he had sold his property as unplotted lands. In return for this benefit, the municipality may require him to meet a demand to which the municipality would not have been put but for the influx of people into the community to occupy the subdivision lots. /167/

It has been suggested that similar requirements regarding the dedication of public easements for shore access be applied to coastal planned unit developers. /168/

A Wisconsin platting statute prescribes that subdivisions abutting on a lake or stream must provide public access to the water at not more than one-half mile intervals. /169/ There is further authorized condemnation of rights-of-way "for any public highway to any navigable stream, lake, or other navigable waters". /170/ Although Florida has legislation authorizing the State Road Board to establish access roads leading to public waters, the statute further provides that such rights-of-way may be acquired only by gift or purchase, and not by condemnation. /171/

If the only open-space contributions required were contiguous to each individual subdivision, a community might find itself with a number of small, scattered parcels. These would at least partially be responsive to beach access needs, but the combining of individual donations into one area would substantially enhance their utility as a recreational resource. Municipal ordinances could establish common funds to which developers would be required to donate money, in lieu of subdivision land exactions, and the fund, in conjunction with the eminent domain power, could be used to acquire appropriate sites. /172/

Density bonuses are a variation on this legitimate form of "blackmail". Where larger parcels of land or several lots appropriate for development are held by a single developer, an increase in density can be offered as an incentive to dedication of beach accessways. The approach can be extended to achieve other possible local government objectives, such as the provision of low- and moderate-income housing or restoration of degraded wetlands.

The theory, as applied to coastal residential or resort communities, is that, while

most of the demand for access comes from areas outside the subdivision, the existence of the subdivision aggravates the beach-access problem. First, it may cut off existing access to the beaches; second, even where no access previously existed, the new development will raise land values and create a pattern of land use that will make it more difficult and expensive to purchase beach easements in the future. /173/

Ideally, South Carolina's coast can be developed in a manner that both increases its shoreline's value and allows public recreational use.

But local boards are not required to enact beach access ordinances, and they are generally more susceptible to developers' pressures than are state legislatures. For these reasons, new statutes requiring beach-access easements as a prerequisite for subdivision approval have been recommended. /174/

Developers have argued that the need for beaches is a regional demand



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independent of subdivision development. /175/ It is impossible to deny that the greatest demand for the beaches within the gates of South Carolina's coastal resorts come from outside those subdivisions. Unfortunately, there has been established no constitutional doctrine responsive to this argument.

The narrowest test for the existence of a valid exaction requires a showing that it is for a public expense specifically attributable to the developer's project. /176/ But this formula has not been universally followed. A Montana court found, for example, that a statute authorizing exactions for parks and playgrounds had foreclosed any question of whether the need for the facility was uniquely attributable to the subdivision. /177/

Similarly, California courts, having adopted a less restrictive test in street-dedication cases, have developed a rationale easily adaptable to beach-access situations. It reasoned that a planning board may properly project total, regional potential traffic flow in determining what must be dedicated. /178/

These methods of securing additional access to beaches are inexpensive; they can address the problem before immediate development intensifies; and

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they do not require prior public use of the area. But they apply only prospectively, so that access patterns depend on private development activity rather than on a comprehensive statewide access plan. Their application in other than prospective situations would have little constitutional support. Also, the brokers in the exaction process, namely local governments, may take parochial views of the alternatives and exploit this power for maximum advantage of local residents outside the development. Since much of the South Carolina areas in greatest demand have already been developed, subdivision exactions or bonuses can be, at best, only a partial solution to the State's coastal recreation problems.

### Transfer of Development Rights

An innovative technique recently developed to preserve historic landmarks and areas of critical environmental concern is transfer of development rights (TDR's). By shifting the right to develop from an area which could be used for public beach access to another place where private development is sought, a local government can accomplish general land-use planning as

well as recreation objectives. TDR separates the right to develop from the other rights of land ownership. The landowner who is not allowed to develop can sell his development rights to a landowner in an area specified for development, and the latter can then build at a higher density. Thus, limiting coastal construction is made possible without excessive losses to individuals. /179/

### Compensable Regulations

Compensable regulations, which have been applied in other open space contexts, consist of the regulations of particular lands and the provision of compensation to the landowners for losses suffered. /180/ Under the most widely accepted version of this approach, a parcel's full market value prior to the imposition of regulations is guaranteed to the landowner if the regulation is found to be an invalid taking; to the extent that the restrictions impair the value of the land for present uses, compensation is immediately due; and to the extent that the property's potential development value is reduced, the owner is awarded damages at the time of the sale. /181/

What are the advantages of this method compared to acquisition of the fee simple of other interests, such as easements?

In the first place, funds need not be expended unless and until a court finds that the regulations would constitute a taking in the absence of compensation. And when expenditures are necessary, the initial cost is relatively low since landowners do not recoup lost development value until the property is actually sold; and subsequent increases in the value of the land do not affect the ultimate cost to government, which is based on the value prior to regulation. /182/

Further, this system is a means of constitutionally validating land use regulations which would, in the absence of some compensation to the property owner, constitute a taking. Essentially, they are a hybrid of regulations under the police power and a taking under eminent domain.

This technique has not yet been tested in the context of shoreline recreation. Although their potential

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application in South Carolina merits consideration, compensable regulations may prove to generate more administrative problems than simple acquisition of easements. Moreover, courts have been very wary of regulations which can be construed to be designed to depress land values to lower possible future condemnation costs. /183/

### Regulation Opportunities

To varying degrees, each of the aforementioned land use regulations might be employed to expand South Carolina's shoreline recreational opportunities. Their application may result in substantial diminution of coastal property values, but the most authoritative study of the taking issue concludes that the popular belief that land value cannot be severely reduced through regulation is unjustified by analysis of judicial decisions. /184/ As one observer has remarked, "There is nothing in the nature of American constitutional law which should provoke timidity or the palsying of effort for fear of constitutional difficulties". /185/

Even when regulations may constitute a taking, compensation may serve to

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accomplish the objectives without extensive litigation. Careful draftsmanship, articulated police power objectives, varied permitted uses, potential for reasonable private economic return, and detailed technical evidence are essential criteria for this method. /186/

### Regulatory Agencies

Access to the beaches is frequently determined by residential and commercial construction along the coast. In South Carolina, the individual, whether developer or single lot owner, must subject his proposed project to scrutiny by State and Federal agencies. Although adequate public access appears not to be a criteria for approval, review of their procedures suggests impact points for advocates of beach access. /187/

Most of the South Carolina coast is flood-prone and flood control agencies, insurance services aside, also impact beach access issues. Comprehensive flood management programs may be seen, essentially, as a quasi-zoning scheme since they are designed to encourage

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development appropriate to flood hazards, social needs, and economic uses of the land.

The State's local development agencies are mainly interested in promoting tourism and re-location of industries. Both the industrial activity and the persons who move to the coast for this reason stimulate the local economies, but also aggravate the need for public access to the beaches. These agencies' leaders have been especially active in other organizations' consideration of the beach access question.

The State's local realtors exert considerable, and generally enlightened, influence on land-use decisions along the coast. But citizens groups, such as Myrtle Beach's Citizens for Progress with Protection, have occasionally been formed to secure measures, like density controls, either consistent with or contrary to realtors' and developers' interests. Many residential communities also have formed property owners associations both to perform quasi-municipal services and to influence, through lobbying and litigation, particular land-use decisions. Similarly, several individual corporate and personal landholders have great impact on land-use decisions because of the sheer quantity of acres under their control.

The regulatory impact of most state agencies is limited to the coastal marshes. A number of these bodies have limited jurisdictional influence on land use above the mean high tide line, but none has comprehensive controls. Like the Department of Parks, Recreation and Tourism, many State agencies control specific land areas or exercise indirect influence, but only a few departments directly affect land use throughout the coast.

The Department of Health and Environmental Control is one of several State agencies which review requests for Corps of Engineers permits for alternative of marshlands and other matters of potential environmental effects. It also influences coastal land use by issuing water and sewer permits for all construction. In this sense, the Health Department ranks with financial constraints as the most important limiting factors regarding the rate and density of coastal land development.

The State agency most involved in overseeing use of coastal wetlands is the Wildlife and Marine Resources Department, specifically its Marine Resources Division. Through the Corps of Engineers' permit system, the Marine Resources Division impacts, perhaps with greater persuasion than any other single reviewing body, coastal development. It

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also provides the administrative staff for the Coastal Zone Planning and Management Council, the organization established in response to the federal Coastal Zone Management Act of 1972.

The State Water Resources Commission summarizes the comments of all state agencies involved in the Corps of Engineers permitting process, sometimes resolving conflicts among them, and prepares a single recommendation for the State budget and Control Board. This Board then decides whether or not to grant a state permit for the proposed activity. Thus, in addition to review by the Corps, the Coast Guard, and other federal agencies, a State permit must be obtained before any modifying activity can legally be undertaken below the mean high tide mark on the State's beaches.

Upon receipt of a notice of permit application to the Corps or other agency, the Water Resources Commission requires that the applicant advertise the proposed activity in a newspaper of general circulation in the pertinent area. It also solicits comments from appropriate state agencies and may elect to hold public hearings.

The State Attorney General's office examines the legal implications of all proposed encroachments upon the public's coastal rights. The General

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Services Administration of the State Budget and Control Board after receiving the recommendations of the Attorney General and the Water Resources Commission, issues the requested permits with appropriate conditions. Controversial permits are often reviewed by the Budget and Control Board itself.

Other State departments frequently are involved in this process. The State Ports Authority, Highway Department, Forestry Commission, Department of Parks, Recreation and Tourism, Land Resources Commission, and Development Board make recommendations when the proposed activity would affect their respective interests.

Under the Public Works Eminent Domain Law, /188/ eminent domain is authorized for any project, including conservation and recreation, in which public monies are involved. This power has been granted in most state agencies in their enabling legislation. Also, the State Highway Department can acquire lands adjacent to highways to restore, preserve, and enhance scenic beauty and recreation. /189/ The Budget and Control Board can grant easements and rights-of-way over state-owned vacant lands and marshlands. /190/

The Federal government is involved in coastal land-use decisions mainly

concerning coastal zone management, but also in water and sewer projects, pollution control, housing, transportation, and countless other areas. With regard to beach access, the decisions of four executive departments are most relevant: The Department of the Army, Department of Interior, Department of Commerce, and the Environmental Protection Agency. /191/

The Army Corps of Engineers has extensive real and potential power over the State's shoreline. /192/ The aforementioned permit process is the chief means of the Corps' involvement in all decisions regarding navigable waters and areas below the mean high tide mark. Occasionally, when the proposed activity's environmental consequences are in doubt, the Corps will require preparation of an Environmental Impact Statement.

The Corps normally requires state approval before it issues a federal permit. When the Environmental Protection Agency or another federal office lodges an objection, the final decision is made at the regional or national level, apart from local pressures. Occasionally, the Secretary of the Army makes the ruling.

The U.S. Fish and Wildlife Service, Department of Interior, regularly

reviews Corps permit applications. This agency enjoys significant stature in coastal land-use decisions; and when its objections are not resolved by the applicant, Interior officials enter into arbitration efforts.

Interior's Bureau of Outdoor Recreation is particularly interested in recreation-oriented areas, including most of South Carolina's coast. BOR determines if adequate consideration has been given to alternatives to actions which might adversely impact rivers, parklands, and other recreational resources. Also, through its national and state comprehensive outdoor recreation plans, BOR influences land use along the coast.

The National Oceanic and Atmospheric Administration, Department of Commerce, is involved in coastal land-use decisions principally through two of its subagencies. The National Marine Fisheries Service reviews Corps permit applications for the activities' potential efforts on marine life. NOAA's Office of Coastal Environment, charged with the responsibility of administering the 1972 Coastal Zone Management Act, conducts a variety of research, educational, and service activities.

Public access to beaches is a particular issue addressed, through this

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study, by the State Coastal Zone Planning and Management Council under the Federal Act. Although NOAA must ensure that maximum public input and the national interest have been accounted for, it has no veto power over detailed features of the plan.

Importantly, after development of the State's coastal plan, all applicants for Federal permits or Federal funding must comply with the State management program. Thus, provisions for beach access included in the plan will be recognized and enforced by the federal permitting process.

The Environmental Protection Agency impacts coastal land-use decisions in at least two important ways. Under the Water Pollution Control Act Amendments of 1972, /193/ EPA directs regional planning of water and sewerage development. It also is involved, as previously discussed, in the Corps permitting process. Its particular concern is protection of water quality and the marine environment, and its comments carry weight comparable to the Interior Department's.

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### Relevant Legislation

Recognizing the limitations of case-by-case judicial expansion of coastal recreation opportunities, Congress has enacted or entertained a variety of laws pertaining to public beach access. Together with acquisition and development programs, they offer additional federal alternatives for ameliorating South Carolina's beach recreation problems.

#### Coastal Zone Management Act

The Coastal Zone Management Act of 1972, /194/ founded upon the need for rational shoreline use policies, has initiated a comprehensive approach to coastal allocation through the development of policies, standards, mechanisms, and processes for dealing with land and water use decisions. Although it provides no funds for beach acquisition, it has permitted South Carolina to undertake a coastal planning effort which includes this subject. /195/

The Coastal Zone Management Act of 1972, introduced by South Carolina Senator Ernest R. Hollings to provide

federal funding for state development of coastal planning programs, emphasizes the need for land and water resource planning for resolution of intense demands for coastal resources. Guidelines for the state program, promulgated in 1973 and 1974, /196/ stress the need for public access and recreation uses along the nation's coast.

Of specific interest is the regulations' inclusion of coastal recreation in the list of specifically mentioned uses of national interest which may not be automatically subordinated to strong, local interests. /197/ Local regulations which exclude or unreasonably restrict recreational uses of at least interstate significance are prohibited. /198/

The statute, unlike most federal planning legislation, conditions its funding upon the implementation of the proposed plans. Through affirmative planning, it requires classification of permissible uses and the establishment of priorities among competing uses.

### Transportation Act

Under the Department of Transportation Act, /199/ the Secretary of Transportation must cooperate with the Interior, Agriculture, and Housing and Urban Development Secretaries and with the states in ensuring that transportation plans maintain or enhance the nation's natural beauty. No project is permitted which requires use or disturbance of public parks or recreation areas, unless there is no feasible alternative and the activity minimizes the possible harm to recreation.

### National Environmental Policy Act

The Bureau of Outdoor Recreation, under the National Environmental Policy Act of 1970, /200/ prepares and reviews statements on the impact of proposed federal actions on outdoor recreational opportunities. Its comments include alternatives to the proposed action, the relationship between local short-term uses of the environment and the maintenance and enhancement of its long-term productivity, and any irreversible commitments of resources which would be incurred by implementation of the proposed action.



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### Water Pollution Control Act Amendments of 1972

The objective of the 1972 amendments to the Water Pollution Control Act is "zero discharge" of pollutants by 1985. /201/ Demonstrating Congress' interest to reduce water pollution interfering with, among other activities, recreation opportunities, the amendments establish effluent standards as part of a point-source system of water-quality management. The controls are more stringent where recreation may be affected by pollution. /202/

### National Open Beaches Bill

The bill which would have the most affect on the public access issue and which might serve as a model for state legislation is The National Open Beaches Act. /203/ Introduced by the author of The Texas Open Beaches Act, /204/ it purports to facilitate the application by state courts of any common law device which might expand public access to the beaches. /205/ The bill was first introduced in 1969 and has never been reported out of committee, but its

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provisions are helpful in determining legislative mechanisms appropriate to South Carolina.

The Bill declares that there is a "national interest" in beaches of the United States. To protect that interest, it guarantees that

(t)he public shall have free and unrestricted right to use (the beaches) as a common to the full extent that such public right may be extended consistent with such property rights of littoral owners as may be protected absolutely by the Constitution. /206/

When private owners hold fee simple title to littoral land, public rights of access and recreational use may still exist and can be affirmed through judicial application of traditional legal doctrines.

The Bill's activating mechanism is its authorization of the U.S. Attorney General or a U.S. attorney to sue in federal court to determine beachfront property's title and control to prevent unjustifiable obstructions of public rights which may be found to exist:

an action shall be cognizable in the district courts of the United States without reference to jurisdictional amount. To: (1) establish and protect the public right to beaches, (2) determine the existing status of title, ownership, and control, and (3) condemn such easements as may reasonably be necessary to accomplish the purpose of this title. /207/

In addition to declaring a national policy and establishing federal machinery regarding open beaches, this Bill specifies evidentiary rules which shift the burden of proof to the littoral proprietor to refute the presumption that the public has established recreational use rights in the uplands. /208/

The proposed law would not extinguish property owners' rights. Those whose titles provide the right to restrict or deny public access would not be affected. The Bill aims to encourage the clarifications of existing state laws through litigation.

No action has been taken on this Bill by the current Congress, and there is no indication of strong political interest in the measure. It provides, nonetheless, a useful model for state adaptation.

## Illustrative State Approaches

As a result of research and correspondence, /209/ this study has concluded that no coastal state has enacted innovative, effective legislature addressing public access to the beaches which can simply be replicated in South Carolina. General coastal zone management programs, fee simple acquisition mechanisms, and coastal regulations have been adopted, however, by a variety of jurisdictions. Several of these warrant scrutiny.

### Texas

Texas, having enacted an Open Beaches Act in 1959, was the leader in this field. The Legislature there declared the State's policy that the public has superior rights to beaches it has used regularly, and the Attorney General is authorized to litigate to protect those rights. Having won its first court test, the Act triggered a series of state measures directed at coastal zone problems. /210/

A legislative Beach Study Committee successfully proposed in 1969 a

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package of recommendations designed to preserve the beach for public recreation. State matching funds were authorized and appropriated to help local governments clean and maintain their beaches. Commercial activity on the beach itself was banned, except for licensed mobile businesses. Beach sand excavations were prohibited, and permits were required for any excavation on barrier islands. The erection of signs designed to exclude the public from the beach was declared a criminal offense. /211/

These measures, nevertheless, were found to be no substitute for acquisition of additional public beaches. Beach parks were developed by the State Department of Parks and Wildlife as an integral part of the comprehensive beach program, so that today almost one-fourth of the state's 400 miles of seashore has been set aside as public parks. /212/

Texas owns and holds in public trust the entire foreshore. The remaining 300 miles of beaches between the mean high tide mark and the vegetation line are privately owned; but under the Open Beaches Act, these beaches, where long used by the public for recreation, are open to free public use. Recognizing the importance of these beaches' attractiveness, the State Legislature has augmented the 1969 beach cleaning and

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maintenance program: increasing the ratio of state to local funds from 1:1 to 2:1; authorizing matching funds for beach patrols; and permitting the Parks Department to utilize a portion of the appropriated funds for an emergency pool to be used in response to major threats to public recreation, such as oil spills or hurricanes. Consistent with Seaway, /213/ the legislature also established, in the context of boundary disputes, that public rights are presumed to extend over the entire beach landward to the line of vegetation. /214/

### California

California's coastal controls have been heralded as the "wave of the future". /215/ With the 1972 passage of a citizen-sponsored initiative called "Proposition 20", the California Coastal Zone Conservation Act (1) established a coastal protection policy, (2) created a commission system to exercise interim development controls through an elaborate permit system; and (3) mandated a comprehensive longterm coastal management plan. /216/ Permanent government controls were not established, and the legislature's final measures will likely depend primarily upon the

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experience acquired with statewide control under the complex, interim bureaucracy, which has acted on more than 5,000 permits. It is the combination of temporary regulatory controls with the planning process that is the hallmark of the California approach./217/

Although existing data and studies are the basis for their planning, the commissions have developed additional information bases and have emphasized policies, rather than specific land uses. Because the plan must be approved by the 1976 Legislature, the commissions may be tempted to generalize in order to secure legislative support. Particularly sensitive is the division of regulatory responsibilities between state and local governments. Though initially applauded in planning circles, the California approach has been the subject of serious criticism. Its overall impact, for better or worse, has been to halt development along the coast. /218/

Beach access has proved to be much less important an element of the California program than the Proposition 20 campaign seemed to indicate. Perhaps because of the coastal initiative, however, few developers have proposed actually fencing off portions of the beach. Beach access has been invoked in some third of the controversial permit

cases, but under the aegis of parking or other issues affecting the convenience, rather than legality, of public access. /219/

Among the commissions' beach access decisions have been requirements that homebuilders open from three to twenty-five feet of their private beach frontage to the public and five-foot wide easements over private property from the highway to the beach. Yet in Santa Barbara county, where the access problem is acute, the regional commission has consistently rejected its staff recommendation that permits for beach-front homes be conditioned on provision of public accessways. /220/

To meet parking needs, an acknowledged determinant of beach use, the state commission has approved multiple family dwelling units only where the developer provided two or more off-street parking spaces per unit and one guest parking space for every ten units. Several coastal cities have followed suit and changed their ordinances accordingly. /221/ Unfortunately, these provisions have a touch of exclusivity because, as developers are required to provide additional parking spaces, the units usually are more expensive.

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The beach access issue has been identified as "the question whether the beach should be a place where a fairly limited number of people can have homes, primarily a place for public recreation, or primarily a place where a natural environment is preserved and protected". /222/ The commissions have not yet formulated an answer, but some implicit policies are evident:

The commissions have certainly approved their share of condominiums, but they have hinted that, if given a choice, they would prefer hotels to apartments, reasoning that hotels and other commercial facilities serve a greater number of people with the same amount of construction . . .

"A use that would provide the most opportunity for the public to enjoy the benefits of being near the water (small waterfront amusement park) ought to take precedence over a use, housing, that would limit the waterfront to a smaller number of people." . . .

The commissions have had a wavering commitment to preserve the dwindling supply of low-cost housing

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along the coast . . . .  
But in transitional neighborhoods . . . , the commissions have approved expensive condominiums that would drastically change the neighborhood's income composition . . . .

Beachside trailer parks, restaurants, or campgrounds may be more unsightly than low-density, luxury residences, yet they make the beach available to a greater number of people and to people of more varied incomes . . . . The South Coast commission (considered two recreational vehicle campground cases with similar facts) and approved the state's project and turned down the Malibu project." /223/

The state commission, however, has been strict with developments using state or federal funds to subsidize projects designed for the affluent.

"Visual access" has been a source of much of the commissions' controversy. Developers have been required to revise existing subdivisions to permit highway views of the ocean, and application for rows of beachfront buildings with

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little space between them have been rejected. /224/

California has insufficient funds for significant beach acquisitions. The commission, consequently, has occasionally denied permits for housing subdivisions on the grounds that the areas are designated by the State Parks Department as priority acquisition areas for the future. /225/ Once the state plan is completed, however, the state must either acquire these properties or allow some development to proceed. /226/ For this reason, the State Commission has supported several beach acquisition bills.

### New Hampshire

New Hampshire's principal contribution to the management of beach access is an act establishing a program for the development of access to public waters. /227/ Its goal is the construction and maintenance of new public access areas and for the improvement and expansion of existing accessways. An advisory board, charged with program coordination and implementation, consists of the heads of pertinent state agencies /228/ and is chaired by a member of the public appointed by the governor.

The Department of Public Works and Highways is specifically authorized to acquire lands, easements, and rights, by purchase, lease, or otherwise, for beach accessways approved by the board. Board recommendations must be subjected to public hearing and be approved by the Governor. Acquisition and maintenance costs are defrayed by charges against the waterways fund and road and waterways tolls are imposed.

No public access area may be constructed to any public waters which serve as a municipal water supply without the local government's consent. No action may be maintained against any town or the state for any injury to persons or property on accessways created under the Act. Before any state agency can acquire or dispose of any land or interest therein which leads to or is adjacent to a waterway, it must provide for the acquisition or retention of a recreation right-of-way if recommended by the public access advisory board and the governor.

The Act provides a practical model for coordination of state efforts regarding public access to waterways. It establishes a right-of-first-refusal for public acquisition or accessways in any state transaction involving potential water recreation sites. Although much of South Carolina's coast is in private

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ownership, similar legislation would make public access to beaches a priority of record and ensure its primacy in future public coast land-use decisions.

### Island Trust Concept

Because many of South Carolina's private beaches are on islands, the experimental concept of an islands trust may be an appropriate vehicle for the provision of additional coastal recreation opportunities. This approach was first suggested in the Interior Department's Islands of America study /229/ and has been proposed in various Nantucket Sound Island Trust measures. /230/

The trust commission, heavily weighted with local residents, but with state and federal representatives, is directed to develop a comprehensive plan for preservation and utilization of the islands, and its expenses are shared by the state and federal governments. The trust land is classified according to its existing uses and natural values, and development controls are imposed through a system of compensable regulations and acquisition. /231/

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The trust's objectives have been described as follows:

(1) take into account and not disturb areas already under some form of protection;

(2) allow for expansion of residential and commercial areas in developed "centers of gravity," but only in accordance with a comprehensive plan;

(3) preserve in a forever wild or natural state certain unique areas such as dunes and wetlands;

(4) restrict but not prevent development in those areas either not needed for residential and commercial expansion or forever wild, while continuing present ownership patterns and maintaining the integrity of local control; and

(5) ensure public access to beaches and inland recreation areas. /232/

Since the high price tags for outright acquisition deter all levels of government from attacking the problem, this

coordinated approach may be appropriate. Moreover, the unique qualities and regional use patterns of South Carolina's beaches may be found to transcend the scope of state parks.

The trust commission is empowered to acquire the entire beach or pedestrian rights of passage. As one element of the trust plan, this comprehensive approach raises difficult political issues, /233/ but it responds to the essential problem of beach access: "reliance upon regulations finding their wellspring in the police power cannot preserve the islands, but the federal powers and funds essential for preservation raise the specter of loss of local control". /234/ Application of this legal mechanism, consequently, requires a careful accounting of the particular characteristics of distinct communities.

## Fees And Restrictitons

The facts of Avon-by-the Sea /235/ are symptomatic of municipal beach policies which either exclude non-resident beach use or impose restrictions or fees discouraging such use. Throughout the country local communities increasingly employ permit, user fee,

and street parking policies to discourage, if not preclude, non-resident use of their beaches. /236/

In Babylon, New York, one of five Suffolk county communities that do not exclude non-residents entirely, residents may purchase seasonal parking stickers for five dollars; non-residents must pay three dollars each day on weekends. Westport, Connecticut, residents can obtain a season-long Camper parking sticker for forty dollars, while non-residents must pay fifteen dollars per day. Deal, New Jersey, excluded non-residents entirely, including resident guests, and a \$200 fine was imposed upon violations. /237/

None of these measures have been adopted by South Carolina communities, but the validity of these approaches must be examined to determine the validity of resident and non-resident user fees. /238/

## User Fees

Beach user fees have increasingly become popular in northeast communities seeking to offset the high costs of beach maintenance, including policing,



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security, and lifeguards. A local government's experience is of interest.

Stone Harbor, Delaware, serves as a beach playground for the 19 campgrounds and trailer parks within a 10-mile radius of the town center and for day-trippers from much further away. It has 1 2/10 miles of beach, a winter population of 2,000, a summer population of 25,000, and an annual budget of \$1,500,000. In 1971, the following program was adopted:

- Tags (badges) must be displayed by everyone 12 years or older who is on the beach during hours lifeguards are on duty;

- Tags can be purchased prior to May 31 of each year at a seasonal fee of \$3.00. After this date, the cost is \$5.00. They are transferable;

- Daily and weekly tags can be purchased for \$1.50 each Friday afternoon and are valid from one Saturday morning to the following Saturday evening;

- Tag color denote seasonal and weekly validity;

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- Tags are sold at the Borough Hall and can be reserved by mail, but none are sent by mail to avail their being lost or stolen. Checks in payment are encouraged. Reserved tags are numbered, recorded, and available when called for in person;

- Campgrounds, trailer courts, and motels (not within the corporate limits) are major purchasers of tags in bulk for use of their patrons, and they employ a deposit system to ensure return of the tags;

- Lifeguards do not handle sale or distribution or check tags. Inspectors paid \$2.50 per hour handle all phases of the tag operation. The inspectors patrol a four-to-six block area, 40 blocks are patrolled by foot, and surrounding areas by car.

The town realized \$212,800 in fees in 1975, and inspectors' salaries and related costs were less than \$20,000. Only a handful of letters of opposition were reported after the first year of operation.

One New Jersey town official, when asked what was his response to the claim that "God made the beach -- it should be free," noted that "God doesn't pay the lifeguards and trashmen". /239/

### Non-Resident Access Restrictions

Taken together, the New Jersey decision and Gerwitz /240/ provide strong authority for the position that municipal closure of beaches to non-residents or imposition of access restrictions limiting non-resident use violate the "prior public use" doctrine unless such restrictions are legislatively authorized. Another dimension of the public trust, this principle holds that "land appropriated to one public use cannot be diverted to an inconsistent public use without plain and explicit legislation to that end". /241/ The change in use of public beaches from at-large access to limited resident use is subject to these conditions. /242/

Similarly, under the Gerwitz rationale, /243/ the maintenance of a town beach for unrestricted use may constitute a completed dedication of the beach to use by the general public.

Subsequent restriction to use by residents and their guests only indicates the irrevocable character of dedication. Imposition of parking fees and restrictions, if resultant in analogous use limitations, are likely also to be improper.

Constitutional arguments may also provide the broad applicability and substantive content necessary to invalidate non-resident restrictions and fees. The right of public access to shoreline recreation resources is fundamental to the Equal Protection Clause. /244/ The constitutionality of classifications, such as residency, depends on "whether it promotes a compelling state interest". /245/ And when essential human rights, not specifically enumerated in the first eight Amendments to the United States Constitution, are infringed upon by some governmental action, the Ninth Amendment provides a flexible instrument for protecting those rights. /246/

A South Carolina case well illustrates this principle. In Toomey v. Witsell, /247/ a State statute set license fees for resident commercial shrimp boats at \$25 per boat and non-resident fees at \$2,500 per boat. The United States Supreme Court, basing its decision on the privileges and immunities clause, /248/ explained that the

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Constitution outlaws classifications based on citizenship "unless there is something to indicate that non-citizens constitute a peculiar source of the evil at which the statute is aimed". /249/ The restrictive fee was therefore impermissible.

The Court noted, however, that a state does have the power to impose a higher fee upon a nonresident for the use of facilities or resources supported by resident tax revenues, but only if such a differential bears a substantial relationship to the tax allocations. /250/ It is clear that, regarding beach use, municipalities can make such a claim. Such arguments must account, nevertheless, for residents' actual tax expenditures for beach acquisition and maintenance, federal and state grants to beach towns, and the economic benefits accruing to the cities by this fortuitous location. /251/

What are the legal justifications for the imposition of non-resident fees or use distinctions? First, since non-residents do not pay local taxes that provide the purchase and maintenance costs, they impose a greater financial binder on the beach community. Second, masses may likely cause deterioration of the beach. Third, there may simply not be enough automobile parking space for everyone. Finally, the towns have a

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right, inherent in their police power, to prevent obnoxious behavior and keep out bad influences. /252/

Objections to these premises are obvious: (1) Beach towns enjoy great economic benefits through the tourism and recreation industry; (2) Residents, as well as outsiders, cause the crowding of beaches; (3) Increased fees for all users could provide for additional parking spaces; and (4) There is rarely a factual basis for the assumption that evil lurks only outside the city's boundaries.

User fees can therefore be imposed to offset the acquisition and maintenance costs of public beaches, but such measures cannot distinguish between residents and non-residents without a rational basis for the classification.

### Permissible Access Limitations

The principal focus of this study is alternative methods of expanding the public's access to South Carolina's beaches. But it must be noted that, in some local contexts, access limitations

may be desired. The previously discussed cases involving municipal beach access restrictions constitute a consistent, evolving principle barring such exclusions./253 But if current demand levels continue to increase and if the State is to preserve its beaches' environmental attributes, some limitations on access are a virtual necessity.

This may be accomplished through sound planning techniques, such as the prohibition of vehicular access from the mainland to islands, and implementation of ferry transport. /254/ But legislatively authorized restrictions which are reasonably related to the preservation of a unique resource, like South Carolina's beaches, and which do not totally exclude non-residents should be immune to constitutional attack.

The Department of Interior restricts both the number of visitors to, and the length of stay at, national parks and seashores. /255/ Restrictions upon off-road vehicles in National Wilderness Areas have been upheld, even when imposed upon plaintiffs owning land within the area's boundaries. /256/ Access to Wildlife Refuges is tightly controlled. /257/ Thus, the restriction must be based on an articulated public purpose, directly related to the beach resource itself, and not be a unilateral or self-serving attempt by the state or

local governments to treat non-residents on a different basis.

In a recent decision concerning the Back Bay National Wildlife Refuge in Virginia Beach, Virginia, the U.S. Court of Appeals (Fourth Circuit) upheld the Interior Department's right to place severe restrictions on public access to national wildlife refuges when the Department believes the public is destroying the area's ecology. The Department alleged that the rules, banning vehicular passage on the beach to all but a handful of year-round beach residents, were necessary to protect the refuge's food chain.

The Virginia decision, the highest court opinion to date affirming such access regulations pertaining to coastal parks and refuges, is a clear assertion of the public interest in beach preservation as well as access; and when these two objectives may conflict, the holding indicates that, at least in the context of wildlife refuges, recreational interests may be subordinated to environmental priorities.

### Legal Conclusions

To the extent that the demand for additional public access to South Carolina's beaches can be met by government acquisition and traditional exercise of the police power, no extraordinary remedies are needed. But since the State and local treasuries cannot meet the needs created by national use of the State's coast, the expansion of beach recreation opportunities will likely require the use of historic legal doctrines and innovative legal mechanisms.

These novel approaches must withstand the challenges of the constitutional prescription against uncompensated takings and traditional understandings of the police power. Parcel-by-parcel claims, however, cannot be expected to provide adequate relief to the problem. Because the public beach shortage will be aggravated by increases in population and the demand for outdoor recreation, combinations of acquisition, regulation, and common law evolution are required.

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1 See, for general historical review, "The Public Trust in Tidal Areas: A Sometime Submerged Traditional Doctrine", 79 Yale L. Jrnl. 762, (1970) (hereinafter referred as "Submerged Doctrine").

2 See, e.g., Jackvony v. Powel, 21 A.2nd 554, 558 (1941), for discussion of an early state constitutional provision protecting the "common law rights of the people" in the shore.

3 R. Powell, The Law of Real Property, Sec. 159, at 634 (1969) (hereinafter cited as Powell).

4 The mean low and high tide lines are engineer's lines, not invisible marks. For example, mean high water at any place is the average height of all the high waters at that place over a considerable period of time. From astronomical considerations, it has been determined that there should be a periodic variation in the use of high water every 18.6 years. To ascertain this line with legal certainty, therefore, an average for 18.6 years must be determined. See City of Los Angeles v. Borax Consolidated, Ltd., 74 F.2d 901, 906.

5 The vegetation line may be defined as the extreme seaward visible boundary of this natural vegetation that spreads continuously inland.

6 1 R. Clark, Waters and Water Rights Sec. 36.4(A) (1967).

7 Ibid., note 5, Sec. 36.4 (B).

8 Borax Consol., supra, at 26.

9 For example, Maine, Massachusetts, and New Hampshire follow colonial ordinances in drawing their line between public and private ownership at low water or 100 rods seaward from high water, whichever is less. Virginia, Connecticut, Delaware, and Pennsylvania recognize private interests to low water. In Florida, Alabama, and California, when the law is affected by Spanish and Mexican grants, the tidelands boundary is set at mean high tide, as with the common law rule. In Texas, grants made before January 20, 1840, are good only to mean high tide; subsequent grants of littoral land by Texas follows the common law principle. 1 R. Clark, supra, note 5, Sec. 36.3(c).

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10 See Briefs of the Parties in the Supreme Court of Georgia, State v. Ashmore; See also Ga. Code Ann. Sec. 85-410.

11 Latimer, "Tidelands, Submerged Lands, and Navigable Waters of South Carolina" 16 (Unpublished memorandum prepared for the State Attorney General's office, 1967) (hereinafter referred to as Latimer).

12 Latimer, 16.

13 See, e.g., Horlbeck, "Titles to Marshes in South Carolina", 14 S.C. Law Quarterly 288 (1962); Clineburg and Krahmer, "The Law Pertaining to Estuarine Lands in South Carolina" 23 S.C. Law Review, (1971); Logan and Williams, "Tidelands in South Carolina: A Study in the Law of Real Property", 15 S.C. Law Review, 657 (1963). See also Middleton, "A Review of the Law Pertaining to the Private Ownership of South Carolina Marshland" (Unpublished Paper Prepared for the Committee for Preservation of Privately-Owned Marshlands, Summerville, S.C., 1975).

14 148 S.C. 428, 146 S.E. 434 (1928).

15 146 S.C. 434, 437 (1928).

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16 See, e.g., Horlbeck, supra at 353; Logan & Williams, supra at 667.

17 See, for most comprehensive discussion, 1956-1957 Op. Att'y. Gen. 291.

18 Clineburg & Krahmer, supra at 23.

19 South Carolina Water Resources Commission, South Carolina Tidelands Report (January, 1970); see Porro, "Invisible Boundary - Private and Sovereign Marshland Interests", 3 Nat. Res. Lawyer 512, 519 (1970).

20 Littoral owners may be defined as any who hold title to lands along the seacoast.

21 See, Wiel, "Natural Communism: Air, Water, Oil, Sea, and Seashore", 47 Harv. L. Rev. 425, 452 (1934).

22 See 1 Waters and Water Rights, Sec. 38 (Clark ed. 1967) and cases cited therein.

23 State v. Randall, 1 Strob. 110, 47 Am. Dec. 548 (1846).

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24 Savannah River Lumber Co. v. Bray, Supervisor, 189 S.C. 237, 200 S.E. 760 (1939).

25 Tyler v. Guerry, 251 S.C. 120, 160 S.E. 2d 889 (1968).

26 A landowner who permits the public, as a matter of right, to use his land for some purpose has made a dedication for that purpose and cannot thereafter withdraw his permission to so use the land. See 4 Tiffany, Law of Real Property, ch. 24 (3rd ed. 1939); see also Town of Estill v. Clark, 179 S.C. 359, 184 S.E. 89 (1936).

27 Sax, "The Public Trust in Natural Resources Law: Effective Judicial Intervention", 68 Mich. L. Rev. 473, 475 (1970) (hereinafter referred to as Sax).

28 Justinian, Institutes 2.1.1 (4th ed. J.B. Moyle transl. 1889).

29 Ibid, at 2.1.1 - 2.1.6.

30 "The Public Trust in Tidal Areas: A Sometime Submerged Traditional Doctrine", 79 Yale L. Jrnl. 762, (1970) (hereinafter referred to as "Submerged Doctrine").

31 "(T)he territorial water became embedded in history and law as a tangible asset to be enumerated in every king's list of riches. Report of the State Interim Committee on Tidelands, Senate of the State of California 21 (1953).

32 "Submerged Doctrine", supra. See "California's Tidelands Trust for Modifiable Public Purposes", 6 Loyola of Los Angeles Law Review 485 (1973) (hereinafter cited as "Loyola Tidelands Trust").

33 "Submerged Doctrine", supra.

34 Attorney General v. Philpott, 8 Chan. 1 (1632), discussed in "Loyola Tidelands Trust", supra at 490.

35 "Public Access to Beaches: Common Law Doctrines and Constitutional Challenges", 48 N.Y.U. L. Rev. 369 (1973) (hereinafter cited as "Common Law Doctrines").

36 "Submerged Doctrines", supra, at 762.



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37 See "State Citizen Rights Respecting Greatwater Resource Allocation: From Rome to New Jersey", 25 Rutgers L. Rev. 571 (1971) (hereinafter cited as "Greatwater Resource").

38 See, e.g., Martin v. Waddell's Lessee, 41 U.S. (6 Pet.) 367, 412-13 (1842); Shively v. Bowlby, 152 U.S. 1, 57 (1893).

39 "Submerged Doctrine", supra at 771-3.

40 "Common Law Doctrines", supra at 385.

41 See Sax, supra note 114 at 484-5.

42 Ibid at 453.

43 Id. at 453.

44 Id. at 452.

45 See "Submerged Doctrine", supra.

46 See Ducsik, Shoreline for the Public, Ch. 4 (1974).

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47 146 U.S. 387, 452 (1892).

48 For example, the Privileges and Immunities Clause. U.S. Const., Art. IV, Sec. 2.

49 "Submerged Doctrine", supra at 783.

50 See Citizens to Preserve Overton Park v. Volpe, 401 U.S. 402 (1971).

51 See Sax.

52 Ibid., note 114, at 477.

53 See, e.g., East New York Sav. Bank v. Hahn, 326 U.S. 230 (1945).

54 Berman v. Parker, 348 U.S. 26, 33 (1954).

55 Adverse possession has little relevance to beach access because the public rarely is in continuous, actual possession of beach lands.

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56 This phrase was understood to refer to a usage begun before the coronation of Richard I in 1189. See "Constitutional Challenges", supra at 375 et seq.

57 Black's Law Dictionary, 461 (4th ed. rev. 1968).

58 The requisite elements are found in 1 W. Blackstone, Commentaries 76-78. See "Public Access to Beaches", 22 Stanford L. Rev. 564, 581-84 (1970) (hereinafter cited as "Beach Access"); "Constitution Challenges", supra at 375-77; "Californians Need Beaches - Maybe Yours!", 7 San Diego L. Rev. 605, 606, 618-2) (1970) (hereinafter cited as "California Beaches"); and Ducsik, supra at 110-12.

59 The doctrine had been applied in a few New Hampshire cases, See, e.g., Knowles v. Dow, 22 N.H. 387 (1851); Nudd v. Hobbs, 17 N.H. 524 (1845). Courts in other states had rejected the theory on the basis of the arguments that no American custom could be old enough to be "immemorial"; see, e.g., Delaplaine v. Crenshaw 56 Va. (15 Gratt.) 457, 470-75 (1860), and that recording systems have been in use since the formation of this country; see, e.g., Gillies v. Orienta Beach Club, 159 Misc. 675, 681, 289 N.Y.S. 733, 739-40 (Sup. Ct. 1935).

60 254 Ore. 584, 402 p.2nd 671 (1969).

61 Thornton, supra at 597-98, 462 p.2d 671, 677-78.

62 See, e.g., Mullane v. Central Hanover Bank & Trust Co., 339 U.S. 306, 313 (1950).

63 2 American Law of Property, Sec. 8.4 et seq. (A.J. Casner ed. 1952); see Degnan, "Public Rights in Ocean Beaches: A Theory of Prescription", 24 Syracuse L. Rev. 935 (1973) (hereinafter cited as "Prescription Theory").

64 Usually fixed by statute.

65 Downing v. Bird, 100 So. 2d 57, 64-65 (Fla. 1968).

66 375 S.W. 2d 923 (Tex. Civ. App. 1964) (hereinafter cited as Seaway).

67 See Lattes v. State, 159 Tex. 500, 324 S.W.2d 167 (Tex. Sup. 1959).

68 The Court was able to rely heavily on several roadway cases because the

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beach had long been used as a public highway. This controversial case prompted enactment of the Texas Open Beaches Act of 1959, discussed infra.

69 2 ELR 20511 (Dist. Ct. App. Fla., August 31, 1972).

70 "Prescription Theory", supra at 936-937.

71 See McQuillan, 11 The Law of Municipal Corporations (3rd ed. rev.) Sec. 302, at 627-630.

72 See "Beach Access", supra at 573-81.

73 Ibid. at 537.

74 See, e.g., City of Manhattan Beach v. Cortelyou, 10 Cal.2d 653, 76 p. 2d 483 (1938); F.A. Hihn Co. v. City of Santa Cruz, 170 Cal. 436, 150 at 20-62 (1915).

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75 Supra.

76 A 1959 statute prohibited obstructing access to state-owned tidelands. Tex. Rev. Cir. Stat. Ann., Art. 5415d (1962).

77 Supra.

78 The Court was acting pursuant to a beach-access statute similar to Texas'; Ore. Rev. Stat. Sec. 390.610-690 (1968).

79 2 Cal. 3rd 29, 465 p.2d 50 (1970) (both cases hereinafter referred to and cited as Gion-Dietz).

80 Ibid. at 36, 465, p.2d at 54.

81 See Comment, "Public Rights and the Nation's Shoreline", 2 ELR 10179, at 10188 (September, 1972).

82 330 N.Y.S. 2d 495 (1972).

83 See, also, State Highway Commission v. Bauman, 3 ELR Sec. 20290 (Ore. Cir. Ct., Feb. 23, 1977).

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84 61 N.J. 296, 294 A-26-47 (1972).

85 The Court spoke in terms of the public trust, but it is clear from the historical background that it referred to the jus publicum. See "Constitutional Challenges", supra.

86 61 N.J. at 309, 294 A.2d at 55.

87 See "Constitutional Challenges", supra at 382.

88 E.g., Sax, supra.

89 See Del. Code Ann., title 7, Sec. 7001 et seq. See, also, Mich. Laws Ann. 281.631; Minn. Stat. Ann. 105-485; Wis. Stat. Ann. Sec. 59.971.

90 Documentation of such claims is an arduous process. Seaway, for example, required five weeks of jury trial and massive preparation. Newman, "The State's View of Public Rights to the Beaches", The Beaches: Public Rights and Private Uses, Proceedings of a Conference Sponsored by the Texas Law Institute of Coastal and Marine Resources, Univ. of Houston, at 11 (1972).

91 I.e., the entire "bundle of rights" associated with the land.

92 See cases cited in Williams, Land Acquisition for Outdoor Recreation - Analysis of Selected Legal Problems, Outdoor Recreation Resources Review Commission Study Report No. 16, at 2-7 (1963). This discussion of acquisition relies heavily upon Ducsik, supra, at 137-52; Massachusetts Report, supra, at 95-115; and cases cited therein.

93 See, e.g., Yosemite Park & Curry Co. v. Collins, 20 F. Supp. Cal. 1937).

94 S.C. Code Ann. Sec. 9-310(4)(r) (1962).

95 Ibid., at Sec. 9-310(4)(h).

96 Ibid., at Sec. 9-310(4)(o).

97 Article I, section 17.

98 E.g., Acadia, Main (acquired in 1919); Olympic, Washington (1938); and the Virgin Islands (1956).

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99 See 16 U.S.C. Sec. 4596-99 (1970).  
E.g., Cape Hatteras National Seashore;  
Cape Cod; Point Reyes; Fire Island;  
Assateague Island; Gulf Islands (Florida-  
Mississippi), Cumberland Island; and  
Cape Lookout. The House Appropriations  
Committee approved funds for land acqui-  
sition that would constitute the Cape  
Canaveral National Seashore. Orlando  
Sentinel-Star, (July 19, 1975).

100 See, e.g., 16 U.S.C.A. Sec. 459b  
(1961) (Cape Cod).

101 16 U.S.C.S. Sec. 459b-4(d) (1961).

102 See U.S. Dept. of the Interior,  
Bureau of Outdoor Recreation, Federal  
Outdoor Recreation Programs and Recrea-  
tion Related Environmental Programs  
(1970).

103 161 U.S.C. Sec. 406 (1).

104 162 42 U.S.C.A. Sec. 1500.

105 16 Y.S.C. Sec. 460 (1-5).

106 24 C.F.S. Sec. 4.203(b).

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107 1952 P.L. 152, as amended.

108 E.G., New Jersey's Green Acres Land  
Acquisition (1961), Oregon's authoriza-  
tion of Highway Department purchase of  
shoreline for recreational purposes  
(1971), and Massachusetts' acquisition  
of Boston's Harbor Islands (1970). See  
Whyte, The Last Landscape at 62-63 (1968),  
and Eveleth, "An Appraisal of Techniques  
to Preserve Open Space," 9 Villanova L.  
Rev. 559 (1964).

109 See Ellis, "Massachusetts Open  
Space Law", Open Space and Recreation  
Program for Metropolitan Boston (1969),  
at 15, 91-93.

110 The Conservation Foundation,  
National Parks for the Future 41-42  
(1972).

111 See, e.g., Senator Henry Jackson's  
National Islands Conservation and  
Recreation Act, S. 2622, 93rd Cong. 1st  
Sess. (1973); 119 Cong. Rec. 519,607-10  
(Oct. 30, 1972).

112 See The Conservation Foundation,  
National Parks for the Future 44 (1972).

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113 See Note, "Techniques for Preserving Open Spaces," 75 Harv. L. Rev. 1622 (1962); Comment, "Easements to Preserve Open Space Land," 1 Ecology L. Q. 728 (1972) (hereinafter cited as "Open Space Easements"). See also Brenneman, "Should Easements Be Used to Protect National Historic Landmarks", (prepared for the National Park Service, 1975).

114 W. Whyte, "Securing Open Space for Urban America! Conservation Easements," Urban Land Inst. Bull. No. 36 (1959).

115 E.g., easements acquired by The Nature Conservancy along the Bantam River in Litchfield County, Connecticut. See Open Space Action Committee, Stewardship 33 (1965).

116 National Trust Act of 1937, 1 Edw. 8 & 1 Geo. 6c. lvii, Sections 4,8.

117 W. Whyte, The Last Landscape 95 (1968).

118 Williams, "Land Acquisition for Outdoor Recreation -- Analysis of Selected Legal Problems," Outdoor Recreation Resources Review Commission Study No. 16, 44n. 42 (1962).

119 See Int. Rev. Code of 1954, Sec. 170(f) (3) (B) (i) and (ii).

120 Footnotes 106 & 107 in Legal Section.

121 See generally 2 American Law of Property Sec. 8.1-8 (Casner ed. 1952), and 3 Tiffany, Real Property, Sec. 756-828 (3rd. ed. 1939).

122 Clark, Real Covenants (2nd ed. 1947), at 69 and cases cited therein.

123 3 Tiffany, Real Property, Sec. 762 and cases cited therein. (Note that, in South Carolina, the right-of-way must terminate in the dominant tenement.)

124 Restatement of Property, Sec. 491; 2 American Law of Property, Sec. 8.82.

125 See, e.g., Wiggins v. Lykes Bros., 97 So.2d 273 (Fla. 1957); North Georgia v. Beebee, 128 Ga. 563 (1907); and Hanson v. Fergus Falls National Bank & Trust Co., 242 Minn. 498 (1954).

126 Phillips v. Rhodes, 48 Mass. 322 (1843).

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127 Cusack Co. v. Meyers, 189 Iowa 190 (1920).

128 But any reservation in the deed causing doubt on the perpetuity of the grant might enable the tax assessor to disregard the easement in valuing the property. See Whyte, Conservation Easements.

129 See Internal Revenue Code of 1954, Section 170C; see I.R.S. Document No. 5551 (10-64).

130 Internal Revenue Code, Sec. 170(b) (5).

131 Internal Revenue Service Regulations Sec. 1.170A-1(c); Revenue Rulings 73-341 and 74-583.

132 Letter, September 22, 1975, to Mr. Lader from W. C. Moser, Staff Attorney, S.C. Water Resources Commission.

133 See Pamphlet, "Gift of Land," published by The Nature Conservancy.

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134 See Wagenseil, "Property Taxation of Agricultural and Open Space Land," 8 Harv. J. on Leg. 158, 160-162 (1972), where it is noted that 18 states have tax abatement programs.

135 See Tyler and Valentine, "The 1972 Open Space Conveyance Tax -- Recapture or Reaction?", 47 Conn. Bar. J. 332 (1974).

136 See Hagman, "Open Space Planning and Property Taxation," 1964 Wis. L. R. 628.

137 Cal. Gov't. Code Sec. 51200 et. seq.

138 For discussion of the police power and its constitutional limits in land use cases, see generally Bosselman, The Taking Issue (1973) (hereinafter cited as Bosselman); see also Ducsik, supra at 152-71.

139 See Broesche, "Land Use Regulation for the Protection of Public Parks and Recreation Areas", 45 Texas L. Rev. (1966) (hereinafter cited as Broesche).

140 Broesche, supra at 110; "Preserving Open Spaces", supra at 1623.

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141 Chicago B & Q RR v. Chicago, 166  
U.S. 226, 235-41 (1897).

142 Article 39, Magna Charta.

143 Bosselman, supra at 319-21.

144 260 U.S. at 415.

145 Ibid., 415.

146 See Bosselman, supra.

147 Sax, "Taking and the Police Power",  
74 Yale L. J. 36, at 62-65. Professor  
Sax disavowed this view in part in  
"Takings, Private Property, and Public  
Rights", 81 Yale L. J. (1971).

148 Kusler, "Open Space Zoning", 57  
Minn. L. Rev. 1, 65 (1971).

149 Bosselman, supra at 318.

150 272 U.S. 365, 47 S.Ct. 114 (1926).

151 Ibid., at 365.

52 See Anderson, "A Comment on the  
Fine Line Between 'Regulation' and  
'Taking'", The New Zoning: Legal,  
Administrative, and Economic Concepts  
and Techniques (Marcus and Groves, ed.,  
1970).

153 See Johnson, "Constitutional Law  
and Community Planning", 20 Law & Contem-  
porary Problems 199 (1955).

154 See Management and Control of  
Growth, Vol. I-III (Scott ed. 1975).

155 See Ducsik, at 172-85.

156 Waite, "The Dilemma of Water Recrea-  
tion and A Suggested Solution", 1958  
Wisc. L. Rev. 542, at 608.

157 Ducsik, supra.

158 Cal. 2d 879, 264 p.2d 932 (1953);  
cert. denied 348 U.S. 817 (1954).



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159 Condemnation proceedings had been initiated so this was probably an effort to increase the property's "fair compensation" value.

160 It must be noted that plaintiffs produced no evidence regarding the ordinance's effect on property values and had themselves previously requested a re-classification to commercial use.

161 See Dunham, "Flood Control via the Police Power", 107 U. Pa. L. Rev. 1098 (1959).

162 See, e.g., Dooley v. Town Plan and Zone Commission of Fairfield, 151 Conn. 304, 197A.2d 770 (1964), and Morris County Land Improvement Co. v. Parsippany - Troy Hills Township, 40 N.J. 539, 193A.2d 232 (1963).

163 Gorieb v. Fox, 274 U.S. 603 (1927).

164 See Note, "Zoning: Setback Line: A Re-appraisal", 10 William and Mary L. Rev. 739 (1969).

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165 For discussions of subdivision control, see Heyman and Gilholl, "The Constitutionality of Imposing Increased Community Costs on New Suburban Residents Through Subdivision Exactions", 72 Yale L. J. 1119 (1964); Strine, "The Use of Conditions in Land Use Control", 67 Dick. L. Rev. 109 (1962); and Note, "Techniques for Preserving Open Spaces", 75 Harv. L. Rev. 1622 (1962) (hereinafter cited as "Preserving Open Spaces"); and Platt and Moloney-Merkle, "Municipal Improvisation: Open Space Exactions," 5 Urban Lawyer 706 (1973).

166 See ibid. at 188-93, and cases cited therein.

167 Jordan v. Village of Menomonee Falls, 28 Wis. 2d 608, 137 N.W.2d 442 (1965). See also Johnston, "Constitutionality of Subdivision Control Exactions: The Quest for a Rationale", 52 Cornell L. Rev.

168 "Beach Access", supra at 568-69.

169 Wis. Stat. Sec. 236.16(3) (1957), as amended Wis. Laws 1957 ch. 88, Sec. 6; See Waite, Public Rights to Use and Have Access to Navigable Waters, 1958 Wis. L. Rev. 335, 368-71.

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- 170 Wis. Stat. Sec. 23.09(14) (1957).
- 171 Fla. Stat. Sec. 335.16 (1959).
- 172 This procedure was upheld in Jenad, Inc. v. Village of Scarsdale, 28 Wis. 2d 608.
- 173 Ibid., at 571.
- 174 Id., at 569.
- 175 See, e.g., Aures v. City Council, 34 Col. 2d 31, 207 p.2d 1 (1949); Pioneer Trust & Sav. Bank v. Village of Mount Prospect, 22 Ill. 2d 375, 176 N.E. 2d 799 (1961); Brous v. Smith, 304 N.Y. 164, 106 N.E. 2d 503 (1952); Menomonee Falls, supra.
- 176 Pioneer Trust, supra; Menomonee Falls, supra.
- 177 Billings Properties, Inc. v. Yellowstone County, 144 Mont. 25, 394 p.2d 182 (1964).

- 178 Aynes, supra.
- 179 TDR has been the subject of considerable study in recent planning literature. For further discussion, see Management and Control of Growth, supra.
- 180 See Krasnowiecki and Paul, "The Preservation of Open Space in Metropolitan Areas", 110 U. Pa. L. Rev. 179 (1961); and Krasnowiecki and Strong, "Compensable Regulations for Open Spaces", 24 J. of the Amer. Inst. of Planning 87 (1963).
- 181 Tentative Draft #3, Amer. Law Inst. Model Land Dev't Code, Sec. 9-111(3).
- 182 Ducsik, supra at 191.
- 183 See "Preserving Open Spaces", supra at 1622 (1962).
- 184 Bosselman et al, The Taking Issue (1953) at 328.

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185 Alfred Betleman, as quoted in Sussna, "The Status of American Land-Use Control," 45 Conn. Bar Jrnl. 281, 284 (1971).

186 See id. at 294 et seq.

187 This section is a condensation of two studies and related public information materials: South Carolina Tidelands Report, S.C. Water Resources Commission, (July, 1970), and "The Institutional Framework for Land Use, Planning, and Regulation on South Carolina's Grand Strand", Clemson University Misc. Ext. Pub. (Sept., 1974), Ch. VI.

188 S.C. Stat. 25-101.

189 S.C. Stat. 33-74.

190 S.C. Stat. 1-357.1-.2.

191 Among the many other federal agencies with coastal interests in South Carolina are the National Parks Service, the Coast Guard, the Federal Powers Commission, and the Forest Services.

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192 Its authority stems from Section 10 of the Rivers and Harbors Act of 1899, Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972, and Section 404 of the Federal Waters Pollution Control Act Amendments of 1972.

193 P.L. 92-500.

194 16 U.S.C. Sec. 1451, 86 Stat. 1280 (1972).

195 This report has, in fact, been partially sponsored by the South Carolina agency administering funds available under this federal law.

196 15 C.F.R. Sec. 920 and 923.

197 15 C.F.R. Sec. 923.15.

198 15 C.F.R. Sec. 923-15 and 923.17.

199 P.L. 87-670, Sec. 4(f).

200 P.L. 91-190, Sec. 102(c).

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201 33 U.S.C. Sec. 1251(a) (1), 86 Stat. 816 (1972).

202 33 U.S.C. Sec. 1312.

203 H.R. 10394, S.2691, 93rd Cong., 1st Sess., (1973), and subsequently re-introduced in various forms. See Appendix A.

204. Rep. Robert C. Eckhardt (Democrat, Texas).

205 See Eckhardt, "A Rational National Policy on Public Use of the Beaches", 24 Syracuse L. Rev. 967 (1973).

206 H.R. 10394, Sec. 202.

207 Ibid. Sec. 204(a).

208 See Black, "Constitutionality of the Eckhardt Open Beaches Bill", 74 Colum. L. Rev. (1974), which asserts that there are no valid constitutional objections to this Bill.

209 Letters of inquiry were sent by Hartzog, Lader & Richards to the governors, legislative speakers, and pertinent federal agencies in every coastal state.

210 Texas Coastal Legislation, (Prepared by the General Land Office and the Texas Coastal and Marine Council; May, 1974) (hereinafter cited as "Texas Coastal Legislation").

211 Id. at 8-16.

212 See "The Beaches - Public Rights and Private Uses", Conference sponsored by Texas Law Institute of Coastal and Marine Resources and Senate Interim Coastal Zone Committee (1972); Footprints in the Sands of Time: An Evaluation of the Texas Seashore, Report of Texas Interim Beach Study Committee (1970; Testimony of Texas State Senator A. R. Schwartz, Committee on Merchant Marine & Fisheries, U.S. House of Representatives (1972).

213 Supra.

214 Texas Coastal Legislation.

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- 215 See Statutory Comment, "Coastal Controls in California: Wave of the Future?", 11 Harv. J. on Leg. 463 (1974) (hereinafter cited as "California Controls").
- 216 Cal. Pub. Res. Code Sec. 27000-650 (West Supp. 1974). For discussion of the politics behind this legislation, see Adams, "Proposition 20 - A Citizen's Campaign", 24 Syracuse L. Rev. 1019 (1973).
- 217 The temporary permit system with simultaneous planning was successfully adopted beforehand in San Francisco with the Bay Area Conservation and Development Commission (BCDC).
- 218 See, e.g. "California Controls", supra; See also Doolittle, "Land Use Planning and Regulation on the California Coast" (Unpublished: Institute of Governmental Affairs University of California, Davis, May (1972); Douglas, "Coastal Zone Management A New Approach in California", Coastal Zone Mgmt. J. Vol. 1, No. 1, 1 (1973); Bodoritz, "The coastal Zone: Problems, Priorities, and People", Unpublished Paper presented Art Conference on Organizing and Managing the Coastal Zone, Annapolis, Md., June 13-14, 1973.

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- 219 Healy, "Saving California's Coast: The Coastal Zone Initiative and Its Aftermath", Coastal Zone Management J., Vol. 1, No. 4, 365 (1974) (hereinafter cited as Healy).
- 220 Healy, supra at 372, n.20.
- 221 Ibid. at 373.
- 222 Id. at 373.
- 223 Id. at 373-74.
- 224 Id. at 376. See Comment, "Shoreline Development Controls and Public Access to the Ocean's Edge," Coastal Zone Mgmt. J. Vol. 1, No. 4, 451 (1974).
- 225 The State Parks Department was given a specific period of time (in one case, one year) to pardon the land. Ibid. at 378.
- 226 Id. at 378.
- 227 N.H.R.S.A., Ch. 258-B, 158-C (1967).

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228 Department of Fish and Game, Division of State Parks, Division of Resources Development, Water Resources Board, Department of Public Works and Highways, Division of Safety Services, and Office of Planning and Research of the Division of Economic Development.

229 U.S. Dept. of Interior, Bureau of Outdoor Recreation (GPO, 1970).

230 See Gifford, "An Islands Trust: Leading Edges in Land Use Laws," 11 Harv. J. On Leg. 417 (1974) (hereinafter cited as "Gifford"); and Rabinowitz, "Martha's Vineyard: The Development of a Legislative Strategy for Preservation," Environmental Affairs (hereinafter cited as "Rabinowitz").

231 See, e.g., 118 Cong. Rec. 12.033 (1972).

232 Gifford, supra at 428.

233 See Gifford supra, and Rabinowitz, supra.

234 Gifford, supra at 460.

235 Supra.

236 See, e.g., Darnton, "Suburbs Stiffening Beach Clubs," New York Times, July 10, 1972, at 1, Col. 1.

237 Ibid.

238 See, e.g., "Third Interim Report of the Special Commission Relative to the Management, Operation, and Accessibility of Public Beaches," The Commonwealth of Massachusetts (August 21, 1975).

239 Letter dated November 21, 1975 to Mr. Lader from Lawrence J. Turner, City Manager, Rehoboth Beach, Delaware.

240 Supra.

241 Higginson v. Treasurer and School House Commissioners of Boston, 212 Mass. 583, 591 (1912). The doctrine has been particularly well established in Massachusetts. See, e.g., Nickolos v. Commissioners of Middlesex County, 341 Mass. 13 (1960) (reservation);

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Inhabitants of Marblehead v. Commissioners of Essex County, 71 Mass. 451 (1851) (shoreland).

242 "Massachusetts Commission," supra at 69-75.

243 Supra.

244 Note, "Access to Public Municipal Beaches: The Formulation of a Comprehensive Legal Approach," 4 Suffolk Univ. L. Rev. 936 (1973) (hereinafter referred to as "Public Municipal Beaches"). Although constitutional equal protection arguments are relevant, the general failure of courts to establish recreation as a "fundamental right" reduces this ground to one of last resort.

245 Shapiro v. Thompson 394 U.S. 618, 638 (1969).

246 See Justice Goldberg's Opinion in Griswold v. Connecticut.

247 334 U.S. 385 (1948).

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248 Application of the Equal Protection Clause could be possible in analogous situations.

249 Id. at 334 U.S. at 398.

250 Ibid. at 339.

251 See "Public Municipal Beaches".

252 Ibid.

253 See, e.g., Avon-by-the-Sea, and Gerwitz; see also Public Rights and the Nation's Shoreline, 2 ELR 10.184 (1972).

254 This method is currently being implemented at Cumberland Island National Seashore.

255 See, for extended discussion, National Parks for the Future.

256 E.g., McMichael v. United States, 335 F.2d 283 (9th Cir. 1965).

257 50 C.F.R. Sec. 28 (1974).

# Public Beach Access And Recreation Plan

Part Seven





## Part Seven

### Public Beach Access And Recreation Plan

Beach recreation is a major use of South Carolina's coast. It is a source of immense economic and intangible benefits to State and local governments as well as private citizens. It is one of the State's chief distinguishing characteristics.

South Carolina provides its residents and visitors disproportionately great opportunities for beach access in comparison with other Atlantic states. Admittedly, economic motives underlie this fact: the State's businesses earn a significant share of the lucrative seashore recreation/vacation market. Whatever its reasons, however, the State is a pacesetter in public access to beaches.

But leisure trends and demand projections should alert South Carolinians that today's concerns about public access may rapidly develop into crisis proportions. The paucity of accessways and beach parks, the inadequacy of existing parking and public facilities, traffic congestion and litter, the strains on beaches near urban centers,

## Public Beach Access And Recreation Plan

hostility between beach community residents and their neighbors on holiday, and the exclusivity of prime beach areas all point to one conclusion: State and local governments must act!

State or local government acquisition of shoreline is the simplest solution, but the sites and quantities necessary to meet projected recreation demand are prohibitively expensive. In this time of economic austerity and doubts about government programs and spending, new alternatives must be sought.

No solution to the problems of public beach access and recreation are likely to emanate from Washington. Nor would Federal mandates be desired by most South Carolinians. Their situation today is not so severe that solutions are impossible.

To the contrary, the State has ample resources to remedy its coastal recreation ills. This report's findings and policies, site planning recommendations, and proposed implementation mechanisms comprise a rudimentary beach access plan that is practical and effective.

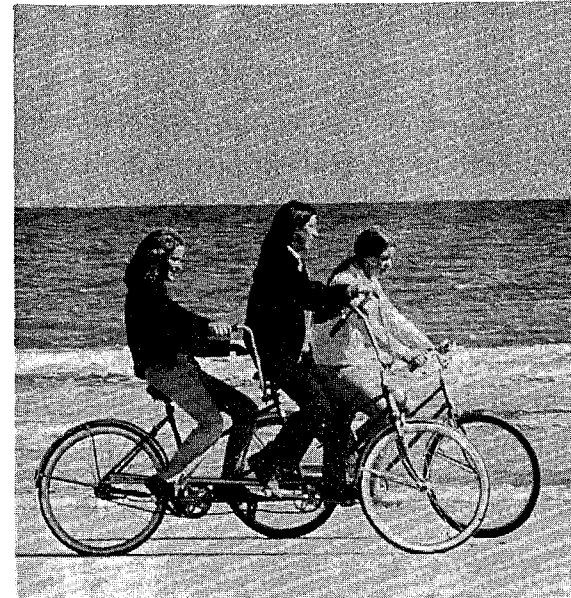
What is now imperative is the public awareness, on the part of both public officials and citizens, of the need to act swiftly.

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### Premises

Throughout this study, considerable differences of opinion were expressed by South Carolinians about methods of increasing public access to the beaches. Yet there emerged a consensus regarding certain premises upon which this coastal plan has been developed.



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### The National Interest

South Carolina's beaches are a resource of national significance. In 1974, more than 10 million visitors sought refuge from their daily pressures on the State's coast. Industrial, defense, and commercial facilities, serving the entire country, make important claims to the coastal zone. The shoreline is home for an abundance of wildlife and vegetation that have disappeared from other parts of the nation.

The United States Congress, in the Coastal Zone Management Act of 1972, declared the national policy "to preserve, protect, develop, and where possible, to restore or enhance, the resources of the nation's coastal zone for this and succeeding generations." Under this Act, South Carolina has received financial assistance for planning, and this study has been sponsored, in part, as an element of the State's coastal zone management program. The Act's policy, therefore, has been a foundation of this beach recreation plan.

The national interest in the conservation of critical environmental areas and the expansion of public beach access are the major points pertaining to recreation. Recognition of these interests by State and local governments is of paramount importance to the entire East Coast of the United States and is in their own economic self-interest. Public agencies -- Federal, State, and local -- and private enterprise must cooperatively establish the priority of public recreation on the coast insofar as it does not jeopardize irreplaceable natural resources.

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### State and Local Prerogatives

Notwithstanding the national interest, South Carolina's State and local governments have long-established and well-founded prerogatives regarding the coastal zone. Modest public expenditures can augment the recreational character of beaches. Public planning, if responsive to market preferences, can both affect and satisfy demand.

Land-use decisions can best be made by those who know the land and the community best: local government, vested with an array of regulatory devices under the police power, can employ these to expand public beach recreation opportunities while protecting residents' rights. The variety of local responses can demonstrate the different values and conditions of coastal communities.

Since many local communities serve as State playgrounds during beach-going months, the State must relieve them of excessive fiscal burdens. Both State and local governments must conceive new funding mechanisms to provide for the costs of beach acquisition, maintenance, and safety. County governments should provide financial and peak-season man-power assistance to beach communities. A major share of these costs should be allocated to citizens statewide and amortized so that future generations share the costs of benefits they receive.

State government, with the counsel of regional planning agencies, can lend an overview to the coastal planning process. New coastal parks and a system of beach accessways can only be achieved by a State commitment to expanded public access.

Together, State and local policies can greatly influence the direction of and innovations in the leisure industry. Citizens' day and weekend use cannot be subordinated to tourism, and its economic benefits should be directed, in part, to general expansion and maintenance of recreation centers.

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### Environmental Policies

The coastal ecosystem is an integrated network of air, water, soil, light, vegetation, fish and wildlife. People are a part, too. For untold reasons, they thrive near the sea, but their development activities often have undesirable consequences. Preservation of some coastal areas is warranted by the need for scientific investigation and natural fish and wildlife habitats. Conservation of the entire coast's natural features is required by their irreplaceable character.

Both human development and conservation, nevertheless, can occasionally be subordinated to human recreational needs. Neither profligate, destructive use nor the absolute prohibition of public access are alternatives. The land's and water's natural characteristics are the best parameters for balancing these interests when they conflict.

Beaches, and their total ecosystem, have limited carrying capacities in the environmental as well as recreational sense. The coast's bountiful harvests and abundant recreational opportunities should not be lost to future generations by straining these capacities.

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Beach conservation in South Carolina can be accomplished only after these carrying capacities have been determined, areas of critical environmental concern have been identified, and policymakers rest their land-use decisions on sound environmental analysis.

### Private Property Rights

The ownership and use of private property are fundamental concepts of both the Common Law and Federal Constitution. Coastal recreation in South Carolina has been primarily the product of private initiative. It would be foolhardy for public beach access measures to derogate these rights or frustrate this initiative.

Just compensation, under the Fifth Amendment mandate, must be paid for all coastal properties taken by State or local governments for conservation or recreation use. Alternatives to acquisition -- lesser interests than fee simple and regulation, for example -- may be employed for financial reasons, but these must also meet the Constitutional "taking" test.

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But private property rights are not absolute. In past decades, courts have upheld many restrictions on real property. There is much reason for local communities to exercise their police power in innovative ways.

It is not property owners' rights, but their expectations which most frequently are affected by land use regulations. There is no right to guaranteed appreciation in land values. But neither can Government responsibly diminish values where significant investments, corporate or personal, have been made in reliance on existing regulations.

### Private Enterprise

Many facilities for beach recreation, especially vacation use, can most efficiently be developed and maintained by private enterprise. Government -- through taxes, permits, incentives, and regulations -- can order the business environment of the tourism and recreation industry so that its pursuit of profits prompts what public priorities demand.

A healthy and prosperous private sector is essential to South Carolina's economic and recreational climates. Public/private cooperation can achieve objectives unattainable to either sector. Although compromise on some issues, particularly those of environmental quality and social justice, are impossible, government must seek to foster and assist private initiative.

Similarly, the State's business community progressively views government as an arbiter and guardian of individual rights, personal and commercial. The provision of public beach access can be consistent with and complement commercial beach uses. What is most urgently needed are new mechanisms by which businessmen can profit -- and State and local governments can participate in these profits -- by beach day-use and vacation by lower- and middle-income residents and visitors.



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## Part Seven

### Policies

The Public Beach Access and Recreation Plan merely summarizes and reflects the extensive market, environmental, and legal analysis found in the study's Technical Report. The Plan, based on these findings and the articulated premises, consists of general policies, site planning recommendations, and proposed implementation mechanisms. The policies purport to establish a framework for States and local government decisionmaking regarding public beach access and recreation.

### Economic Development

Findings. South Carolina's second largest industry, tourism, is based, to a great extent, on the Coast's attractions. Beach recreation generates millions of dollars and creates thousands of jobs.

Beach erosion and maintenance, air and water pollution, and other evidence of inadequate beach management are costly to taxpayers and imperil maximum economic development. Expansion and enhancement of beach access is critical to realization of the State's leisure industry potential.

Policy. Short-term economic benefits, resulting from piecemeal degradation of beach areas, must be subordinated to the long-term values of coastal conservation. Well-planned, concentrated development -- commercial, residential, and industrial -- can be economical to the public.

Further residential and commercial development will and should occur. But their planning should be provided by and conditioned on public beach recreation objectives. By capitalizing upon the economic benefits of tourism and recreation, the State can underwrite environmental measures that protect and enhance both natural and economic resources.



# Public Beach Access And Recreation Plan

## Part Seven

### Natural Conservation Areas

Findings. Important natural conservation areas are located on or near South Carolina's beaches. Dunes, wetlands, and tidepools, among other places, are ecosystems in themselves. They are valued for recreation, food production, scientific study, and education.

Although burgeoning coastal development threatens these areas, South Carolina has set aside many as wildlife refuges and parks, managed by Federal and State agencies. In some regions, such as Charleston County, recreational lands are dwarfed by conservation areas.

Policy. Environmentally significant natural areas and rare wildlife species should be preserved. Even when development is permitted, damage to natural beach features must be minimized.

Environmental protection measures, nevertheless, must be founded on scientific analysis and not merely on rhetoric. Oftentimes, recreational use is compatible with nature conservation. Wherever limited recreation would not endanger a specific beach tract, including current wildlife refuges and nature preserves, such use should be permitted. Without compromise on critical environmental issues, land-use decision-making must include reference to pressing demands for beach recreation.

### Coastal Zone Management

Findings. Under the Federal Coastal Zone Management Act, coastal states are undertaking diverse experiments in regional planning. In response to popular initiative, California has one of the nation's most comprehensive planning and regulatory frameworks. Other states have preferred narrow scientific investigations of shoreline problems. Although recreation is mentioned in all of these programs, it is receiving greatly different emphasis among the states.

Policy. South Carolina's coastal zone management program is not to be one primarily of land-use control. Its orientation will be toward environmental concerns and the control of broad growth patterns, rather than comprehensive site-specific planning. Public beach access, nevertheless, shall be a major focus of the program. Further study and implementation of the State's beach recreation demand and carrying-capacity should be based upon this Plan and be an integral part of the coastal plan.

# Public Beach Access And Recreation Plan

## Part Seven

### Air and Water Quality

Findings. Clean air and water are valuable economic resources and are essential to residents' and visitors' good health and aesthetic enjoyment. The State's beaches presently suffer from little air and water pollution. But proposed developments and pressures for increased industrial use of the coastal zone may introduce pollutants.

Meteorological and littoral phenomena along the coast would exacerbate any such damage to coastal air and water. Intensive transportation corridors leading to the beaches and automobile parking centers may introduce additional pollution. High-rise buildings and concentrated development also increase pollution by changing natural wind patterns.

Policy. All potential pollution-generating developments -- residential, commercial, and industrial -- should be planned, designed, and operated to maintain and improve the coast's air and water quality. Particular concern should be placed on existing and proposed facilities which impact recreation areas.

Major projects -- such as airports, highways, refineries, power plants, and manufacturing plants -- should not only comply with all applicable Federal, State, and local environmental protection measures, but also be required to be sited, designed, constructed, and operated according to technological procedures which minimize pollution.

Such facilities and new residential developments should be required to contribute to public transit systems and/or to provide ample parking spaces for beach users. Open space and architectural circulation systems should be encouraged.

### Beach Appearance

Findings. Residents and visitors alike cherish South Carolina's beaches for their scenic beauty. At some points, public and commercial beach access and recreation have been provided with respect for the coast's aesthetic quality. In other places, however, new developments have injured the coast's visual resources.

## Part Seven

# Public Beach Access And Recreation Plan

Amongst the eyesores are litter; billboards; cutting and grading of natural landforms; inappropriate scale, height, materials, and colors of buildings; overhead lines and towers; and man-made structures blocking natural views.

There is great variety in the characters of coastal communities, and South Carolinians differ greatly in their social values and concepts of beauty. But under the police power, local beach communities can apply general design guidelines to restore or preserve their appearances.

Policy. Visual access to beaches and the ocean should be considered an essential part of the State's tourism and recreational appeal. Local governments should ensure that new developments do not degrade the scenic quality of their beaches.

Design standards and permit procedures should be a part of every beach community's and county's general plan. Sign ordinances should designate scenic accessways and generally reduce the visual impact of highway and street advertising. County and city plans should maximize open spaces, protect view corridors and natural landforms, and minimize the effect of visually intrusive structures. When existing mechanisms are ineffective, design review processes should be established by local governments.

With State assistance, local governments should reduce litter along the beaches and provide for better beach maintenance. State legislation to this end should be enacted.

No development or traffic that would conflict with the visual form of dune ridgelines or destroy their vegetation should be permitted. The natural silhouette of dunes should be preserved.

Local governments should restrict or ban oceanfront construction that would hamper another oceanfront building's visual access of the beach unless no alternative is economically or physically feasible.

Commercial facilities near the beach -- including, but not limited to hotels, motels, and restaurants -- should be required to utilize natural landscaping to reduce their visual impact on the natural environment. Residential developments should be encouraged to protect existing vegetation and complement it with landscaping that minimizes the appearance of intense development.

# Public Beach Access And Recreation Plan

## Part Seven

### Signs

Findings. Throughout the State, signs and billboards block coastal views, clutter the appearance of beach communities, and detract from the coast's natural beauty. Some local governments have not adopted sign ordinances; and where they have, design criteria and enforcement are inadequate.

Policy. Local governments should consider adoption of ordinances containing at least the following provisions: New off-premise commercial signs should be prohibited, and existing ones should be removed after a reasonable amortization period. On-premise commercial signs should be permitted for identification and promotional purposes, but only if they are designed as an integral part of the structure. Public information and directional signs should harmonize with surroundings.

### Community Planning

Findings. As a result of Federal and State incentives and urban growth, regional planning agencies and municipalities throughout the coast are developing or revising comprehensive community plans. In few of these is public beach access emphasized.

Policy. Public planning agencies are capable of directing urban growth and promoting public objectives. Public beach access and recreation should be among their chief socio-economic concerns. The specific recommendations of this Plan should be incorporated into existing and future comprehensive local plans. Inconsistencies should be reconciled after maximum public discussion and input.

## Part Seven

# Public Beach Access And Recreation Plan

### Distinctive Beach Communities

Findings. Beach recreation -- day use and vacation -- derives special advantages from the particular architectural, historical, and scenic qualities of individual communities. Their distinctiveness results in loyal leisure markets.

But in many places high-rise condominiums, shopping centers, hotels and motels have replaced architecturally interesting or distinctive neighborhoods. Lower-income residents have been priced out of increasingly affluent communities. Traffic congestion from summer day users has diminished the recreational experience for many visitors and plagued residents.

Policy. Beach communities and neighborhoods should be protected from intense urbanization, and their unique characteristics preserved and enhanced. Community advisory committees should assist local governments in determining how new development can be compatible with earmarks of their respective beach communities. Inappropriate development should be prohibited, and incentives should encourage restoration of existing structures. Care should be taken to maintain opportunities for residence and retirement by persons of all income levels.

### Transportation Planning

Findings. New roads, although necessary to increase beach access, may effectively impede access in two ways: by decreasing the amount of potential recreational land available while increasing recreational demand in the area; and by increasing traffic loads on local beach community roads and compounding their parking problems. New highways, however, may effectively disperse beach use demand and may relieve the Ocean Highway of traffic.

Policy. State and local officials should be mindful of the effects of transportation planning on beach access and recreation. Recreation demand should not be exacerbated by road siting, but neither should repairs be neglected to discourage access. The need for additional recreation space near beaches should be reflected in remote parking areas, easily accessible from major arteries and connected by mass transit to beach areas.

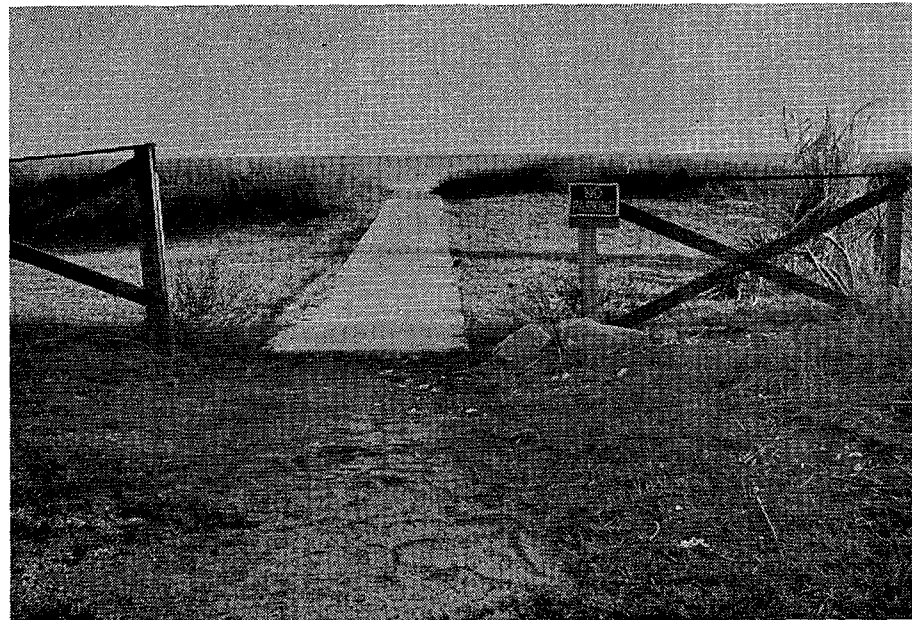
# Public Beach Access And Recreation Plan

## Part Seven

### Parking

Findings. Beach-use surveys demonstrate the critical need for additional parking at every public beach area along the coast. Even conservative projections indicate tremendous increases in demand during the next fifteen years, resulting in a magnification of the present parking problems. A major limitation on public access is likely to be the shortage of automobile parking space.

Policy. State and local governments must establish the provision of additional parking space as a chief priority of their recreation planning. Remote sites, connected to the beach by mini-buses or other public transportation, should be developed wherever possible. Off-island parking should be provided for coastal state parks. Authorized weekend and holiday use of private, commercial parking spaces should be sought.



## Part Seven

### Surfing

Findings. Surfing is an increasingly popular type of coastal recreation. Several South Carolina beaches enjoy surf conditions which attract enthusiasts from all parts of the State and its neighbors. But careless surfers and loose boards pose genuine safety threats to swimmers.

Policy. Surfing should be recognized by coastal communities as a legitimate beach sport. Restrictions may be appropriate if their objective is swimmer safety and not the frustration of surfers. Their access should not be confined to limited beach areas or hours if such regulations substantially diminish surfing opportunities.

## Public Beach Access And Recreation Plan

### Law Enforcement

Findings. Law enforcement and the maintenance of order at recreation centers generally require police officers with special training and temperaments. Particularly at beaches, police patrol is necessary for reasons of public safety, traffic control, and citizen assistance. Those beaches which are not located within municipal police jurisdictions, however, generally lack police attention.

Policy. Law enforcement at public beach recreation areas must be provided jointly by municipal, county, and State patrolmen. County sheriffs' departments should bear primary responsibility for attending to beach areas outside municipalities' corporate limits.

# Public Beach Access And Recreation Plan

## Part Seven

### Assistance to Communities

Findings. Coastal communities, constrained by relatively small tax bases, must service large numbers of seasonal residents and visitors. Their operating budgets are dependent upon financial assistance from the State and Federal governments. Yet State priorities for local grant applications -- such as those for highway safety, law enforcement, and road improvements -- are frequently determined by year-round, permanent population figures.

Policy. Grants to local governments from State and Federal agencies should be allocated not on permanent, but on peak season population. Consideration should be given to the extreme burdens imposed on beach communities by citizens throughout the State and tourists from elsewhere.

### Erosion Prevention/Abatement

Findings. Neither publicly nor privately owned beach areas are immune from erosion. Federal and State programs attempt to prevent or abate this loss of beach because it diminishes both economic values and recreational opportunities.

Policy. No public funds or assistance for erosion control should be made available to beaches which have no public access. Erosion prevention/abatement priorities should be generally consistent with the importance of each site to the State Beach Access and Recreation Plan.



## Site Planning Recommendations

To raise these policies from the level of abstraction, specific site planning recommendations are necessary. They were formed within the context of this study's express premises and are

the product of market, environmental, and legal analysis. Their objective is the practical maximization of South Carolina's public beach recreation opportunities.



# Public Beach Access And Recreation Plan

## Part Seven

### Waccamaw Region

#### Waties Island

Waties Island -- teeming with fish and wildlife, its ocean beach beautiful -- is the only unspoiled sea island on the State's northern coast. It should be acquired for use as a state park.

Although its use should not be intensive, the Island can support recreation. To allow it to fall victim to development pressures would be to lose the Waccamaw Region's last opportunity to punctuate Grand Strand commercialism with a natural setting. To designate it as a wilderness area would be an environmentally unnecessary loss of potential beach recreation.

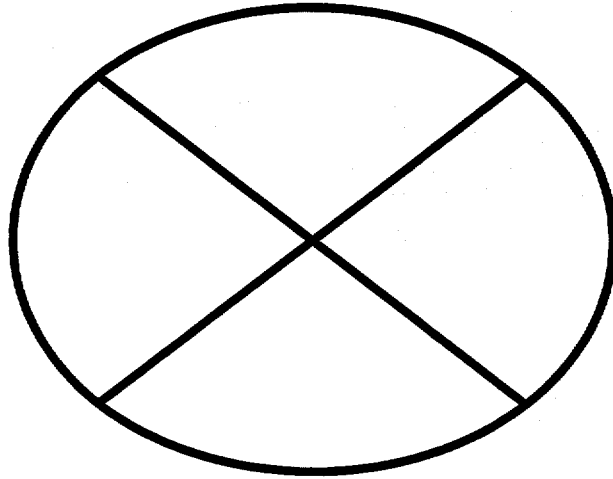
An innovative use for the Island would be to develop an environmental interpretation/recreation center. Island trails, overlooks, and displays, with mainland cabins and campgrounds, could make it a living, playing museum of coastal ecology. It could be a layman's nature study center amidst swimming, fishing, and picnicking facilities. Conservation easements would ensure that its recreational use would not precipitate development or intensive uses. As a hybrid between a refuge and recreation center, it would appeal to

both recreational and educational interests. Its proximity to North Carolina promises extensive use from both Carolinas.

All or most of the Island, the causeway, and property on the western side of the mainland at Little River Neck should be acquired. For enhancement of both the visitor's natural experience and the market value of land retained by the present owners, a buffer zone should be maintained. At a minimum, parking areas for 150 cars and 150 campsites with parking spaces should be located on the mainland. Motor access to the Island should be limited to maintenance and emergency vehicles.

Current negotiations between the State Department of Parks, Recreation and Tourism and the owners should be encouraged and expedited. Sale, preferably, or long-term lease terms could be structured to provide significant tax advantages to the owners. Federal funds would be available for acquisition; development and maintenance assistance should be sought from North Carolina. Relinquishing this property for general public recreation would be a noteworthy, civic-minded act on the part of the owners.

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## Part Seven

# Public Beach Access And Recreation Plan

### The Grand Strand

There is ample public access to Grand Strand beaches, but these are almost entirely commercial in nature. By enforcing design and construction regulations, local governments should maintain this zone as one of North America's favorite beach playgrounds.

The Grand Strand should be recognized as providing only moderate, at best, day-use recreation. It can absorb even more intensive commercial vacation use so long as facilities are not dominated by day users. Demand for beach recreation here will largely be determined and allocated by private promotion, accommodations, and entertainment, their quality and quantity.

In North Myrtle Beach and Atlantic Beach, remote parking areas should be built and connected by mini-bus, with County assistance, to dedicated pedestrian beach accessways. Provision of such parking should relieve Myrtle Beach of some non-commercial day-use congestion.

The Grand Strand is a prime example of how private enterprise, and public coffers in turn, benefit from use of beaches as a public resource. Continued intensive commercial use will be of great economic benefit to the entire State. Part of the revenues earned by private establishments here and throughout the coast should be tapped, or an add-on tourism tax imposed, to sustain day-use beach parks.

To support the beach maintenance and safety precautions occasioned by such intense, commercial use, the existing concession program should be continued. This self-sustaining program, obliging private concessions to bear beach maintenance responsibilities, should be a model for other commercial beach areas.

# Public Beach Access And Recreation Plan

## Part Seven

### Myrtle Beach State Park

A major reason for the need to develop additional state parks in the Waccamaw Region is that the intense pressures on Myrtle Beach State Park's recreational carrying capacity cannot otherwise be abated. This park, nevertheless, will continue to absorb major day-use beach demand because of its full complement of recreation facilities, good swimming, and surfing.

Intensive day use of this park should be continued, vacation use should be held at a moderate level so that middle and lower income vacationers can have easy access to Myrtle Beach's commercial recreation facilities.

Development of Waties Island and Waccamaw Neck as parks would draw away some North Carolina visitors, but those who are attracted by Myrtle Beach's recreation facilities will likely continue to vacation here. Provision of parking at North Myrtle Beach would mitigate day-use demand here to help allow for vacation use.

Higher user fees should be instituted here rather than at the new parks in an attempt to re-distribute existing demand. User-fee levels must be determined as a means of offsetting all the regional parks' development and maintenance costs.

### Surfside Beach

To relieve local visitation congestion in Myrtle Beach and Surfside Beach, the latter's municipal government should dedicate at least twenty beach access easements under its police power. Remote parking and mini-bus transportation should be provided with County, State, and Federal assistance.

### Garden City Beach

Under Georgetown County jurisdiction, Garden City Beach should serve the recreation needs of local residents. Beach access for those whose property does not front the ocean should be provided through regulation or acquisition accessways through less-than-fee interests.

# Public Beach Access And Recreation Plan

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### Huntington Beach State Park

Like Myrtle Beach State Park, Huntington Beach State Park's recreational carrying-capacity will continue to be strained even if additional coastal parks and accessways are developed.

Lower user fees than at Myrtle Beach State Park should be instituted here to induce dispersal of beach-goers until new recreation patterns are established. Such fees, nevertheless, should underwrite development and maintenance costs generally, and not on a pro-rata, individual park basis.

This State park can and must absorb intensive day use from the entire region. Its facilities and distance from Myrtle Beach suggest that its vacation use will be limited.

### Litchfield Beach

North Litchfield Beach is a recognized private community, its beach access limited to residents. Before the undeveloped parcel to the south is developed, however, the County should endeavor to purchase, under the Beaufort County subdivision regulations plan, several accessways. Moderate day use would thereby be permitted.

The Litchfield Beach area is a popular residential/commercial summer destination. There are insufficient parking spaces and inadequate natural activity buffers to warrant introduction of day recreation to present land uses. Its vacation use will be exclusively commercial, and day use will be limited to residents and guests.

# Public Beach Access And Recreation Plan

## Part Seven

### Pawleys Island

Similarly, Pawleys Island should continue to serve as a residential/commercial community. Several beach accessways should be legally established for residents of interior homes, but more-generalized recreational use would be inconsistent with the Island's present uses.

### Debidue Beach

The private community at Debidue Beach presently has the most exclusive private access of all the State's beaches. A cooperative public/private arrangement similar to that between Charleston County and the developers of Kiawah Island should be sought.

One access point at the edge of the property, with a 50-car parking area, would make the beach far more accessible to Georgetown residents. Such dedication would only moderately increase overall public access, but merits negotiation.

### Waccamaw Neck

The land adjacent to Waccamaw River, commonly known as Waccamaw Neck, should be acquired by the State or Georgetown County. It is potentially an important regional park with fishing, picnicking, and boat-launching facilities.

Beach access could be provided by ferry to North Island. Day parking should be available at the mainland for 250 automobiles. One hundred fifty campsites, with parking and attendant facilities, should also be developed there.

The establishment of such a park would significantly relieve recreation pressures on Huntington Beach State Park, especially, and Myrtle Beach State Park. The foundation which presently owns this tract has been very cooperative with the State in the past, and negotiations for this tract should be vigorously pursued.

# Public Beach Access And Recreation Plan

## Part Seven

### North and South Islands

Although ferry access to North Island is recommended, its ecosystem is too fragile to support intense recreational use. It is currently a privately-owned wildlife preserve and perpetuation of that use should be guaranteed by public acquisition of all or part of the Island through the Heritage Trust Program.

Moderate day-use beach access should be permitted on the southern one mile of North Island or the northern mile of South Island.

### Cat Island

Since it is primarily a waterfowl area, has little beach, and lacks road access, Cat Island is best left as a remote, primitive camping area. To cross the Intercoastal Waterway -- a recurring problem in the formulation of this beach access plan -- a 65-foot bridge would be required. That great an expense can be marginally justified only by moderately intense recreation, which Cat Island cannot support.





# Public Beach Access And Recreation Plan

## Part Seven

### Berkeley-Charleston-Dorchester Region

#### Cedar Island and Murphy Island

Cedar and Murphy Islands, as part of the Santee Coastal Reserve, have been appropriated to conservation purposes. But some limited areas on both islands could sustain primitive camping, particularly along the Intracoastal Waterway. These should be developed in conjunction with the Reserve's interpretive nature program.

The shallow and treacherous waters of the South Santee River make boat access to Murphy Island difficult. It should be left as a wilderness area.

Some additional recreational use, however, could be made of Cedar Island. A pier, wildlife observation blinds, and canoe trails would greatly enhance its recreation appeal.

Two state ferries should leave from Moore's Landing: one could stop at Hampton Plantation, beach access points on Bull Bay, Murphy, and Cedar Islands. The other would go to beach access points on Bull and Capers Islands.

#### Francis Marion National Forest

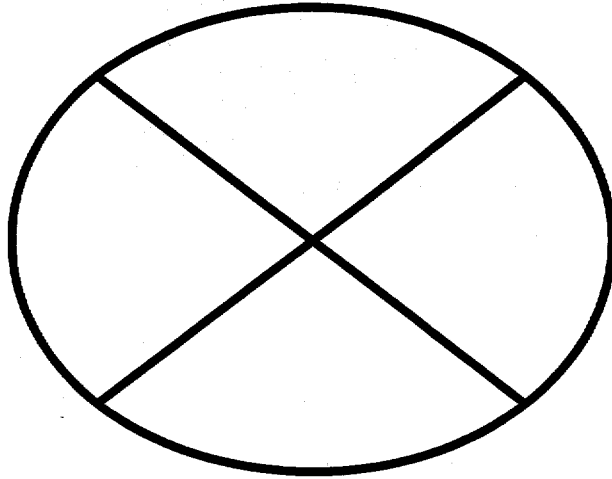
Although Francis Marion National Forest has no ocean frontage, it can facilitate low-cost beach access for vacationers by serving as a dormitory for beach day-use.

Itself an attraction, the Forest has ample space for, at least, an additional 50 to 100 campsites. Tourism promotional materials could alert vacationers to the twofold benefits, relative ease, and budgetary advantages of combining a national forest camping trip with afternoon drives to the beach.

#### Bull Bay and Bull Islands

For reasons similar to those applicable to Murphy Island, Bull Bay Island should be left primarily to conservation use. A beach access point for limited day use should be designated and linked by ferry to Moore's Landing and Cedar Island.

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Bull Island could sustain nature photography, bird watching, and similar recreational activities and thereby permit limited access to the Cape Romain National Wildlife Refuge. Limited beach day-use would be consistent with the area's conservation objectives.

By including Capers Island as a stop on a state ferry from Moore's Landing to Bull Island, both increased ferry traffic and dispersion of Charleston metropolitan day-use beach demand can be accomplished. Since there is inadequate recreation and support facilities on Bull Island to entertain most people for an entire day, the existing ferry service is under-utilized. By linking Bull to Capers and developing Capers Island, more frequent ferry service would be justified and limited beach recreation on Bull Island would become more popular.

Additional paved parking at Moore's Landing would increase the appeal of this ferry access and draw some potential Isle of Palms marina-users. State and County authorities must cooperate to make Moore's Landing an attractive alternative to the Isle of Palms marina lest this beach access plan result in increased burdens on that community.

## Public Beach Access And Recreation Plan

### Capers Island and Dewees Island

Already State-owned, Capers Island should be developed as a major recreation area to attract Charleston area beachgoers for intensive day use.

Principal access would be via State-owned toll ferry service from the Isle of Palms marina, to which would be added additional paved parking spaces at State and Charleston County expense. Secondary access would be via the Moore's Landing ferry. Ferry service and the provision of parking constitute minor costs relative to beach site acquisition.

State-licensed concessions should be developed at distinct activity centers throughout Capers Island. Bicycles, electric vehicles, beach equipment, food, and beverages should be available. Fifty primitive campsites and no fewer than four comfort stations should be built.

The State's profit percentage from concessions and user fees should offset, at least in part, beach maintenance. Provision should be made for the elderly and handicapped as well as back-island campers.

# Public Beach Access And Recreation Plan

## Part Seven

The sale of development rights by Dewees Island's owners has resulted in significant diminution of its market value. Although it should consequently be available for public acquisition on reasonable terms, Dewees is not essential to this beach access plan if Capers is developed as recommended.

Charleston County might acquire Dewees and maintain its natural state. Primitive camping should then be provided.

### Isle of Palms

South Carolina's most crucial beach access problem is the provision of day-use recreation areas in the Charleston metropolitan region. Isle of Palms presently bears a major portion of this burden, and its problems will inevitably be exacerbated by beach recreation trends and projections.

Only dispersion of Charleston residents to other beach access points recommended in this plan and development of new commercial beach vacation facilities can avoid severe problems for the Isle of Palms and neighboring beach communities.

Intensive public recreational development of Capers Island would alleviate this pressure. Provision of parking at and expansion of the Isle of Palms marina would mitigate Capers access pressures on Isle of Palms. Although secondary ferry service to Capers Island from Moore's Landing would divert some Charleston residents to that route, the Isle of Palms marina would still be the principal means of access.



## Part Seven

The classic solution to much of the Charleston day-use demand problem is public acquisition of the undeveloped northern end of Isle of Palms for park purposes. This alternative, however, would likely be too costly to be realistic and would distress many Isle of Palms residents who do not welcome massive infusion of day-users along the beaches of their residential community.

The County, nevertheless, should acquire accessways in this undeveloped northern part of the island before it is subdivided. Lest additional public access to Isle of Palms' beaches result in greater traffic congestion through the heart of the city, this area should not be developed into a major public recreation center without causeway access. Since a bridge spanning the marsh and waterway would be prohibitively expensive, moderate public beach use and government incentives for development of a middle-class, low-cost private beach club are recommended.

### Sullivans Island

Sullivans Island shares the Isle of Palms' problems in nearly equal dimensions. Its traffic congestion potential is not so great, but local residents fear intensive day-use pressures just as much.

# Public Beach Access And Recreation Plan

Although most of the Island's oceanfront property is developed, there are many potential public accessways which can be acquired by local government purchase or regulation. Moderate day use would thereby be encouraged.

The most evident need is for parking, and County assistance should be made available to purchase and pave a site for beach-use parking.

Both Sullivans Island and Isle of Palms should explore mechanisms which could make day-use of their beaches more economically advantageous to the local community and private enterprise. The Myrtle Beach concession/maintenance system could be applied on a smaller scale. State assistance for beach maintenance, in addition or in the alternative, is also necessary.

### Morris Island

Although the tip of Morris Island could serve as a public beach area, access would be extremely difficult. The Charleston Harbor is too dangerous for small craft, and the run from Folly Island requires a difficult oceanfront run.

The Island should be maintained, therefore, as a conservation area.

# Public Beach Access And Recreation Plan

## Part Seven

### Folly Island

Folly Island is widely regarded as a public beach, and its proximity to Charleston makes it a prime recreation area, despite an eroding beach. In the near-term, existing facilities should be improved, parking and comfort stations added, and beach access easements acquired by the State and County.

Federal community improvement funds should be secured as seed money to encourage upgrading of the oceanfront commercial district. Through concessions, local government should provide more recreation opportunities and an improved beach maintenance program.

The municipality, with State, County, and Federal assistance, should develop, over the long-term, a beach-oriented public activity center. Because of the Island's narrow configuration and erosion problems, the Environmental Protection Agency or another authority may effectively prohibit further commercial or residential development. Accessways should be acquired by regulation or purchase to open this beach to truly public use.

A small beach park should also be established for moderate use. The prime location would be the present Coast Guard Station site. If the present tracking system is revised or replaced, it should be acquired under the Federal Surplus Property Act and dedicated to public recreational use.

Perhaps because of the limited existing access, Charleston has not maximized its tourism industry by emphasizing the nearby beaches which can complement an Historic Charleston vacation. Public acquisition of additional accessways and provision of limited beach facilities would permit promotion of far more attractive vacation packages. Each of the recommended day-use areas -- especially Capers, Folly, and Kiawah Islands -- should be planned as destinations for vacationers staying in hotels and motels elsewhere in the metropolitan area.

# Public Beach Access And Recreation Plan

## Part Seven

### Kiawah Island

Kiawah Island has the potential of becoming a commercial vacation center of the same magnitude and character as Hilton Head Island. Much of this tourism will be incremental, rather than drawn from other State resort areas. In this way, the economically up-scale weekend and vacation demand for Charleston beaches will be largely satisfied.

The Island, therefore, will have a significant, beneficial impact on the State and local economies. But the provision of additional commercial beach access, however important economically, is no substitution for addition of accessways for day-users and vacationers of low- and middle-income levels.

Kiawah's developers have agreed to permit public access to the western portion of the Island and to provide public beach facilities, supported by parking fees. Regardless of whether this park is the result of public blackmail for zoning approval, private benevolence, or some mixture thereof, it is a noteworthy example of public-private cooperation.

The 150 parking spaces, nonetheless, will be grossly inadequate to accommodate public demand. The County, with State assistance, should acquire an off-island parking site and provide shuttle transportation to Kiawah Island during the summer months.

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### Seabrook Island

Seabrook Island is another private community. Its beach access is restricted to property owners and their guests. Although the development has one beach parcel that could be made available for public acquisition, it is not essential to this beach access plan.

# Public Beach Access And Recreation Plan

## Part Seven

### Botany Bay and Edisto Islands

Notwithstanding its state park, Edisto Island is under-utilized as a beach recreation site. More than Botany Bay, which is exclusively residential, Edisto Island offers accessway opportunities which can be acquired by local government through purchase or regulation.

Promotion is needed to convey its proximity. But existing images and recreation patterns suggest that to Charleston, Edisto Beach offers minimal relief to the region's day-use recreation pressures.

### Edisto Beach State Park

Edisto Beach State Park is a more natural setting for intensive day-use than Folly Island. It should be promoted as an intensive day-use beach.

Development of additional campsites and vacation cabins would allow Edisto Beach State Park to support more vacationers of low- and middle-incomes. Because of Edisto's distance from Charleston, its use will consist primarily of day-users and vacationers from other parts of the State.

### Bear Island

The Bear Island game management area, operated by the State Wildlife Resources Department, should include facilities for off-season tidewater camping. Otherwise, it should be left to its present conservation use.

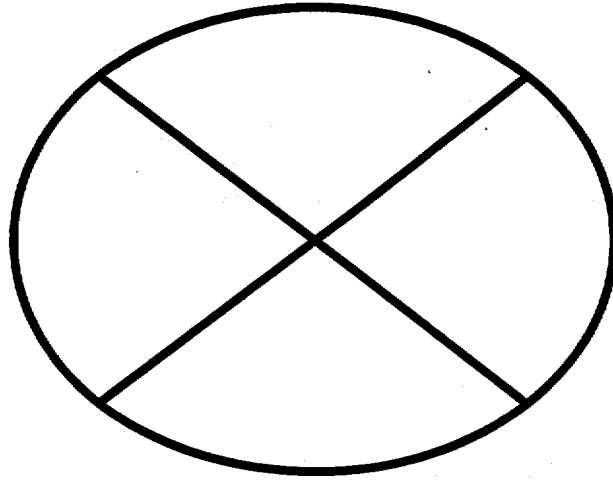
### Hunting Island State Park

Hunting Island State Park's natural features compare favorably with other beach areas, and it is within easy driving distance of most Beaufort County residents and military personnel. Facilities must be added to make it a more interesting place to visit, and its image needs to be highlighted by Low Country promotion.

The park can sustain moderate vacation use and should continue to absorb very intensive day use. Beaufort County, consequently, should acquire neighboring Harbor Island for park development. Harbor Island parking and camping facilities would alleviate the pressure on Hunting Island.



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### Fripp Island

Fripp Island is another private community, its beach access restricted to property owners and their guests. Its exclusive character and logistical difficulty suggest that public access could not be realistically secured.

### Pritchards Island

Most of Pritchards Island is marshland. Since any bridge access to the mainland would endanger the marsh, the Island should be left as a wildlife area. Current plans for private development of an international conference center would not conflict with this beach access plan.

### St. Phillips Island

Access to St. Phillips Island is confined to boats, and the highway route from Beaufort to the ramp nearest the Island is quite circuitous. Principally because of these access problems, its private ownership and development plans, and its relatively small beach, St. Phillips is of minor importance to public beach access planning.

# Public Beach Access And Recreation Plan

### Parris Island

Several small, inland parks are planned and should be developed near Parris Island. All lands within the confines of the U.S. Marine Corps base are considered environmentally or security sensitive. Recreational use would therefore be inappropriate.

### Callawassie Island

Calawassie Island, presently owned by the South Carolina Electric and Gas Company, should be purchased by the State and used as a tidewater camping area. Current plans for resort development should be revised in light of this study's market projections.

# Public Beach Access And Recreation Plan

## Part Seven

### Hilton Head Island

Hilton Head Island is the region's primary commercial vacation destination. Amidst its private communities, hotels, rental condominiums, and cottages provide commercial access to thirteen miles of beach. There is, however, no clearly established public beach area.

The right-of-way at Coligny Circle adjacent to the Holiday Inn, popularly regarded as a public accessway, should be acquired by the State. But by itself, this area is not sufficient to satisfy public day-use demand.

A two-block interior park being considered for North Forest Beach, once clear title has been established, should be developed as a parking area for the Coligny Circle accessway and other nearby accessways which litigation may establish as having been dedicated by the developer. The Beaufort County Recreation Commission should develop and maintain these areas.

The crowding of the Coligny Circle beach area by summer day visitors could be alleviated by encouraging access through the 19 streets in North Forest Beach. This area, known as Hilton Head Beach Subdivision Nos. 1 and 2, fronts 4,900 feet of wide sand beach. Beach access advocates contend that the Hilton Head Company dedicated 36-foot rights-of-way at the end of each of these roads for general ocean access. But the developer and residents, claiming otherwise, claim that these easements were reserved solely for owners of subdivision lots.

There is no record of formal dedication of these accessways to public use. Whether they have been reserved to property owners' use or are open to general public access is an issue that must be determined by litigation. The market and environmental findings of this study could appropriately be incorporated into an amicus curiae brief to demonstrate the public need for additional beach access points.

## Part Seven

Also disputed as public beach access points are the streets between the Hilton Head Inn and the Sea Pines Plantation ocean gate. Six streets with 50-foot rights-of-way and three walkways with 75-foot rights-of-way are frequently used by the public. The public's right of passage, nonetheless, has never been clearly established.

Even these actions, however, would not satisfy demand for non-commercial day-use of the beaches. The need for a separate public beach site can best be met by State acquisition of the Ashmore property near Port Royal Plantation. Parking for 150 cars, changing rooms, and comfort stations should be developed. Traffic congestion at the southern end of the Island would thereby be relieved.

At each of these public access points, licensed concessionaires should provide food, beverages, and beach items and, under the adoption of the Myrtle Beach system, be required to maintain the beach.

# Public Beach Access And Recreation Plan

## Daufuskie Island

A public toll ferry to Daufuskie Island from Palmetto Bay Marina on Hilton Head Island would enhance the Island's property values. In return, the State should exact public beach access rights from the owners. Limited day use would thereby be available. Public costs would be limited to ferry service and provision of 50 additional parking spaces at the marina.

## Turtle Island

Because of its natural inaccessibility and environmental conditions, Turtle Island should be left as a conservation area.

# Public Beach Access And Recreation Plan

## Part Seven

### Implementation Mechanisms



To implement the Beach Access and Recreation Plan's policies and site planning recommendations, several innovative government mechanisms must be fashioned. Generally, these implementation tools are modest in design and have been proved successful in other contexts. No massive California-like coastal bureaucracy is needed in South Carolina. The proposed implementation mechanisms offer, individually and as combinations, a variety of ways local governments and the State can contribute to realization of this Plan.

## Part Seven

### Common Law Devices

South Carolina courts should employ traditional common law concepts in litigation seeking to retard the erosion of public recreational opportunities in the State's shoreline.

"Custom" would permit the State to claim an easement by public use on particular accessways. It could not be used, by single claim, to serve as the basis for declaring that an entire coastal strip belongs to the beaches. It promises most help when littoral owners have been unaware of their title to the beach and the State can demonstrate long public enjoyment of the site.

Under the theory of "prescription", a public easement can similarly be created in privately owned lands. Title would remain with the owner, but use of the land for recreational purposes would be shared with the public. Such an easement could be established by showing open, continuous, and adverse use of the land without the owner's permission.

# Public Beach Access And Recreation Plan

"Dedication", like prescription, refers to rights in particular land parcels. To be enforceable, the theory depends on both the owner's intention to offer specific land or interests therein and acceptance by the public. Both can be either expressed or implied.

The issue of applicability of these theories in South Carolina is clouded. Although they may be useful in the reclamation of beaches previously used for public recreation, they are not effective planning tools. Each doctrine has shortcomings, and ad hoc adjudication alone will not adequately address South Carolina's beach recreation shortage.

# Public Beach Access And Recreation Plan

## Part Seven

### Legislation

Given the limitations of ad hoc judicial expansion of coastal recreation opportunities, the Legislature should adopt several substantive measures regarding beach access.

An Open Beaches Act would facilitate the application by State courts of any common law device which might expand public access to beaches. Essentially, the Act would guarantee that the public have free and unrestricted right to use beaches within the State to the extent that such rights may be extended consistent with the private property rights of littoral owners as may be protected absolutely by the Federal and State Constitutions.

The Act would acknowledge, therefore, that, even when private owners hold fee simple title to beachfront property, public rights of access and recreation may still exist. These rights could be affirmed through judicial application of traditional legal doctrines. It would authorize the State Attorney General to protect those rights and would specify evidentiary rules which shift the burden of proof to the property owner to refute the presumption that the public has established rights of recreational use in the beach.

The Act would declare the erection of signs designed to exclude the public from open beaches to be a criminal offense. Such legislation would be only part of a legislative package, and not a substitute for acquisition of accessways through purchase or regulation. Its principal aim would be to encourage clarification of disputed accessways through standardized procedures and litigation. A Public Rights-of-Way Commission would be established to avoid courtroom battles by defining those sites where the public clearly has access rights. But the Act would also limit the liability of landowners who make their beach access areas available to public use.

A Beach Maintenance Assistance Act would authorize State matching funds to help designated local governments clean, patrol, and maintain their beaches. Except for locally licensed or government-owned concessions, commercial activity on the State's beaches would be prohibited.

A fund would be established as an emergency pool from which local governments could promptly be granted, upon authorization of the Governor, emergency funds to combat threats to beach recreation, such as oil spills and hurricanes. The sources of monies for this would be general revenues (in recognition of the great economic benefits derived by the entire State from maintenance of its beaches) or a tourist tax.

## Part Seven

Notwithstanding the Heritage Trust Program, a Beach Access Acquisition Program, under the jurisdiction of the State Department of Parks, Recreation and Tourism, should be established by statute. Acquisition by purchase, sale/leaseback, scenic, open space and recreation easements should be authorized. The Act would adopt this beach access plan's priorities; and local governments would be encouraged to restrain development of any of these sites until negotiations for public acquisition are concluded.

The Act would establish a new fund, through which the State would annually for a period of years match all Federal grants received for beach park acquisition, such as those from the Land and Water Conservation Fund. Acquisition would be authorized only on a cost-effective basis, and special incentives would be fashioned for acquisition of less-than-fee simple interests that could expand beach recreation opportunities.

# Public Beach Access And Recreation Plan

## Police Power Regulations

The police power has traditionally been thought to be properly concerned only with "the public peace, safety, morals, and health." Today, however, courts increasingly recognize that the concept of the "general welfare" embraces the public trust doctrine: that property rights in certain natural resources essential to the community must be vested in the general public. Thus, the doctrine is limited only by the scope of contemporary perceptions of the general welfare.

Strong deference is generally made by courts in favor of State and local government's flexible legislative use of the police power. As long as local regulations permit private landowners some economic uses for their lands while restricting them for public objectives, the acquisition of beach accessways through exercise of the police power should withstand constitutional attack.

Some diminution of property values through regulations requiring public beach access of oceanfront landowners will likely be tolerated if they are not discriminatory or unreasonable. Central to this judgment is the courts' perception of the public necessity. If nothing else, this market analysis of beach demand in South Carolina establishes the critical proportions of this issue.



# Public Beach Access And Recreation Plan

## Part Seven

A host of regulatory schemes can be employed to this end. Exclusive use zoning, flood plain zoning, building setbacks and official mapping, and transfers of development rights are the principal concepts which can be applied in South Carolina to expand public beach recreation opportunities.

Subdivision exactions and bonuses also merit consideration. The municipality, by approval of a proposed subdivision, enables the developer to profit financially. In return, local government may require the dedication of public easements for shore access, parking space, and beach support facilities sustained by user or parking fees. A "common fund" approach to such exactions could convert scattered parcels into a neighborhood beach park. Similarly, density bonuses could be offered developers as an incentive to dedication of beach accessways.

Compensable regulations may also be applicable to beach access problems. Funds need not be expended unless a court finds that the regulation actually constituted a "taking" without compensation. If compensation is then required, the initial cost is low since landowners do not recoup lost development value until the property is sold. Subsequent increases in land values do not affect the ultimate cost to government, which is based on the value prior to regulation. This system, therefore, is a means of constitutionally validating land use regulations which, in the absence of some compensation to the property owner, would be impermissible.

To varying degrees, local government regulatory powers may be employed to expand South Carolina's shoreline recreational opportunities. If their application result in substantial diminution of coastal property values, compensation may serve to accomplish beach access objectives without extensive litigation. The techniques' limits are simply the skill of draftsmen, the scope of permitted uses, the lessening of reasonable private economic return, and -- most important -- the temerity of local governments.

## Part Seven

### Access Limitations

In some local contexts, access limitations may be desired. There is evolving, nevertheless, a consistent line of judicial cases barring municipal government discrimination against non-residents and similar restrictions. Only those with a narrow and rational basis for classification may be sustained. But if demand levels meet this study's projections and this Beach Access Plan is not substantially implemented, some limitations may become necessary.

This may best be accomplished through sound planning techniques, such as limitation of vehicular access from the mainland to island communities or ferry transport. Only those local restrictions which are reasonably related to preservation of a unique resource and which do not totally exclude non-residents should be immune to constitutional attack.

## Public Beach Access And Recreation Plan

### Beach Access Acquisition Program

Acquisition is the simplest approach to the expansion of public beach recreation. Several Federal programs -- including the Land and Water Conservation Fund, the HUD Open Space Land Program, and the Federal Surplus Property Act -- are realistic sources of assistance. Inter-governmental funding of beach access acquisition should be expanded to include county and municipal governments, too.

This Plan should serve as the guidelines for a comprehensive Beach Access Acquisition Program, established by statute and to be administered by the State Department of Parks, Recreation and Tourism. The agency should be empowered to establish or improve any public beach area by the acquisition and retention of lands, easements, and other property interests.

The Land Acquisition Trust Fund already exists, but lacks adequate funding to purchase even a minor portion of the sites recommended for acquisition in this Plan. The Legislature should focus specifically on beach access acquisition needs. The devaluation of certain areas as a result of the new Federal flood insurance regulations may make acquisition of several potential beach parks feasible.

# Public Beach Access And Recreation Plan

## Part Seven

### Easements

Although this Plan recommends public acquisition of several large park sites, less-than-fee interests comprise the main thrust of the proposed Beach Access Acquisition Program. Only in this way can a significant amount of public recreation opportunities be secured within the realistic capabilities of State and local agencies.

There is no need for the public to secure the entire fee if its objective is solely to guarantee public access to the beach. In today's economy, acquisition becomes feasible only when the public agency is required to acquire only those rights which are essential to accomplish its goal. Moreover, to be most consistent with South Carolina's philosophical emphasis on private property ownership, this Beach Access Plan must leave intact much of the present private land tenure along the coast and disturb as few of those owners' rights as possible.

Novel adaptations of the easement device should be structured. Like the recently established conservation easement, "recreation easements" would allow the property owner to retain the beneficial, though qualified, use of his land while contributing to the State's conservation and recreation efforts.

### Gifts

Existing and new tax benefits should induce voluntary donation of lands and easements. In addition to the incentives of the Federal income tax laws authorizing deductions for charitable contributions, special tax concessions by State and local governments should be instituted. Property tax exemption, especially, should be applied.

To expedite such gifts, the State Department of Parks, Recreation and Tourism should contract with a private firm, on an incentive compensation basis, to pursue, negotiate, and secure beach access opportunities throughout the State. Land trades and any tax mechanism which can legally serve as an impetus to donation should be sanctioned.

### Right-of-First Refusal

The Beaufort County mechanism for acquiring public access in new subdivisions or planned unit developments should be adopted by other coastal counties. The county would thereby have a right of first refusal in purchasing public access within privately held tracts of beachfront land scheduled for development. This procedure, nevertheless, should be used only if a subdivision exaction or density bonus is inapplicable.

# Public Beach Access And Recreation Plan

## Beach Maintenance Program

The Maintenance Assistance Program should be authorized by statute. The Act should

- \* declare the public policy of the State to be that, notwithstanding counties and local governments' primary responsibility, State government should share with its political subdivisions the burdens of beach cleaning and maintenance
- \* authorize allocation of a percentage of State revenues from existing sources or new ones, such as a tourism tax, to the funding of this program
- \* provide requisites for application for such funds by cities and counties
- \* designate responsibilities for cleaning and maintenance of public beaches
- \* provide for program administration by the State Department of Parks, Recreation and Tourism, and
- \* authorize contracts between certain cities and counties and between certain counties relating to beach maintenance.

The program, therefore, would provide for State financial assistance in the form of matching funds to qualified local governments for the purpose of cleaning and maintaining beaches subject to public access and recreation.

Should the proposed funding mechanism not be adopted, the program would be contingent upon legislative appropriations. Administration of the beaches and determination of the best uses of funds would be reserved to the recipient political subdivisions. PRT, as the program's administrative agency, would be empowered to enforce the statutory regulations and to distribute funds impartially. State parks would also receive assistance.

The program would not embrace erosion measures, beach nourishment, or physical construction. "Maintenance" would include, however, the collection and removal of litter, debris, and driftwood/seaweed, the elimination of sanitary and safety conditions which threaten personal health or safety, and the employment of lifeguards and special traffic police.

The program would in no way derogate the duty of cities and counties to clean and maintain all public accessways and beaches within their respective corporate boundaries. Neither would State assistance bar local user fees so long as they are non-restrictive.

# Public Beach Access And Recreation Plan

## Part Seven

### Sources of Funds

Assistance would be conditioned, however, on the maintenance of each city or county applicant of at least one beach park or a reasonable number of marked accessways which meet minimum requirements of size and facilities: (1) sufficiently large or numerous to permit convenient public access to that section of beach for which assistance is sought; (2) adequate sanitation facilities in the vicinity to accommodate the average summer weekend use of the area; (3) adequate off-beach parking, public or commercial, to accommodate the number of average summer day visitors; and (4) adequate road and safe pedestrian access to the park or accessways from the nearest main highway and parking area.

These conditions should be designed so the program may serve as an incentive for local initiative. Qualified cities and counties would receive up to 50 percent reimbursement for eligible expenses incurred in beach maintenance. Maximum State assistance and minimum local programs would be established.

The State Legislature and local governments must realize the economic importance of public beach access and recreation to South Carolina's businesses and tax base. Such recognition should be manifested, on both levels of government, by allocation of larger amounts of general public revenues to acquisition, development, and maintenance of South Carolina's beaches. The following additional sources of funds for the implementation of this Plan must be supplemented with general revenue funds.

#### User Fees

Local government can require beach users to have in their possession tags which indicate payment of a seasonal, weekly, or daily user fee. The legal and political rationale for this approach is based on the community's need to defray maintenance, lifeguard, and police expenses incurred by resident and non-resident use of its beaches.

## Part Seven

### Parking Fees

An alternative local government approach is the requirement that automobiles parked on public streets within a specified walking distance of public beaches or accessways bear a parking sticker indicating payment of a fee for beach access parking. Enforcement by local police and administration by an existing fee-collecting office would minimize expenses, and revenues would be earmarked for beach-related expenses.

### Transient Occupancy Taxes

State and local governments levy a four percent tax equivalent to a sales tax on hotel and motel room rentals, and revenues are placed in the general fund earmarked for school programs. Both an increase in this tax and local equivalents are potential sources of funds for beach programs. In California, the typical local rate is five percent, the maximum permitted by State law.

Local add-on taxes would allow users of commercial facilities, out-of-state visitors and inland residents to help defray the beach community's recreation-based expenses. If the present tax were increased, extra revenues could benefit the coast particularly, in recognition

# Public Beach Access And Recreation Plan

of the coastal zone's strong attraction to tourists and State residents. If an increase were deemed inappropriate or infeasible, current revenues might be apportioned differently so as to aid coastal communities in the acquisition and maintenance of public accessways.

### Property Transfer Tax

Property transfer taxes are commonly used by counties and cities under uniform state legislation. An increase in this tax, State or local, would probably have no real effect on real estate transactions and would not reduce existing local receipts. Revenues could be designated for beach access programs.

### Concessions

Local governments should either own or license beach concessions for the sale of food and beverages, umbrella, towel and boat rental, and related recreation needs. Variations of the Myrtle Beach system could be instituted at public access points of beaches within other municipal jurisdictions. Some portion of the profits derived from this commercial activity could be directly applied to beach maintenance, or licensees could bear substantial maintenance responsibilities.

# Public Beach Access And Recreation Plan

## Part Seven

### Oil Taxes and Revenues

Given the present exploration and demand for oil, South Carolina may be the subject of competition for energy resources. At least two sources of funds may be engendered by this phenomena. An excise tax on petroleum exports and imports could finance public acquisition of coastal properties and research/development regarding oil-spill prevention and clean-up. Also, any tideland oil revenues derived from the depletion of off-shore resources could be used, in part, to fund protection of the beaches and expansion of beach recreation opportunities.

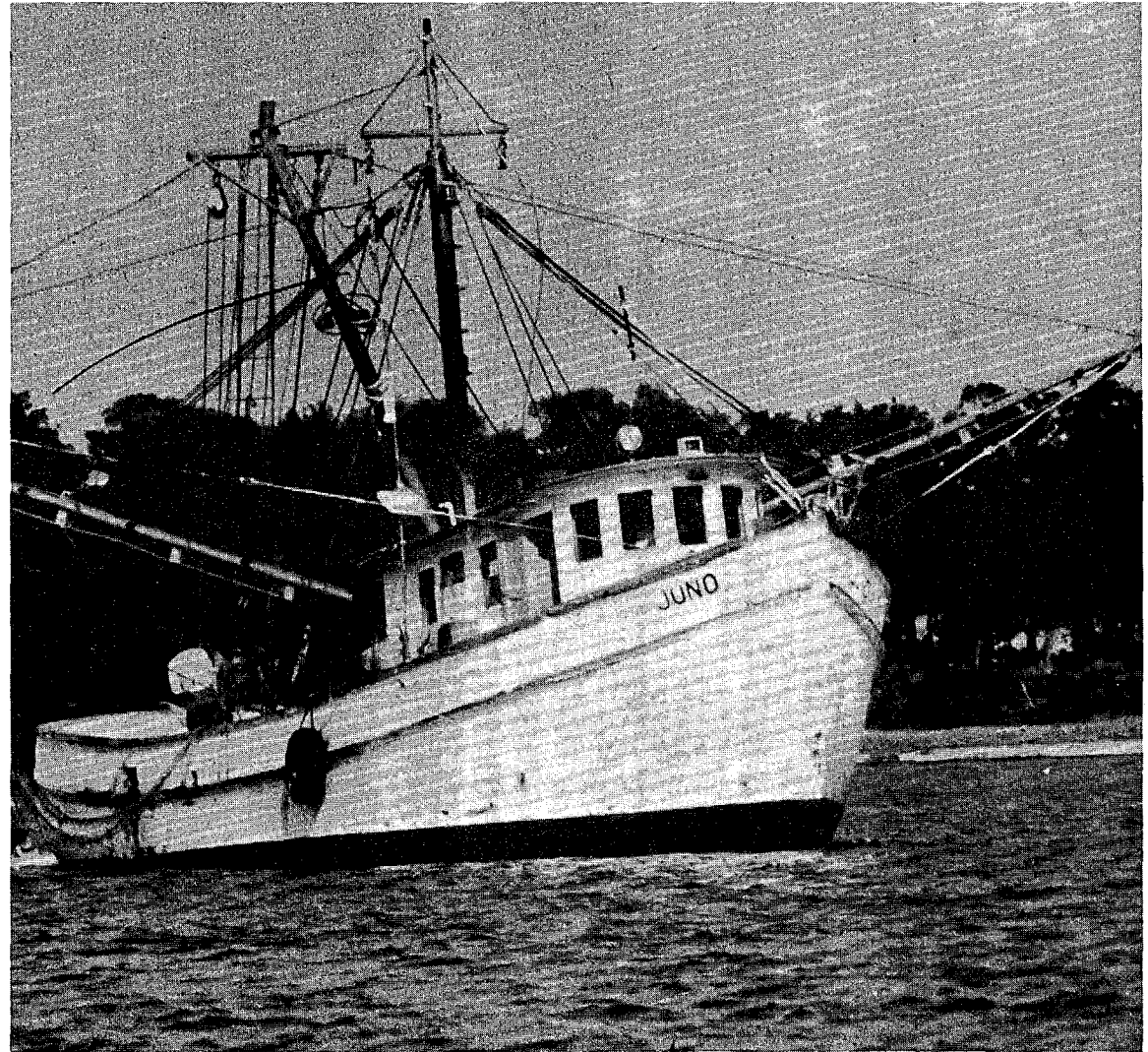
### Bond Issues

If the State's entire population were alerted to the projected demand for beach access in South Carolina, a bond issue could be authorized to fund acquisition of beach parks and accessways identified in this Plan or consistent with specific criteria. At least a bond issue for statewide park acquisition should be initiated, and a major portion of the funds secured should be applied toward public beach access objectives.



## PRT PROPOSALS

This study's Public Beach Access and Recreation Plan is consistent with and embraces the policy statement regarding "The Beaches" adopted on July 30, 1976, by the South Carolina Parks, Recreation and Tourism Commission. The following proposals are especially pertinent.





# Public Beach Access And Recreation Plan

## Part Seven

### PRIVATE SECTOR ACTIONS

The challenge facing South Carolina is this: Within the restraints and limiting factors previously described, how can we serve an ever-increasing number of beach vacationers on a South Carolina seashore that cannot physically expand in size. The private sector of the State's billion dollar tourism industry has the major role in accommodating, serving and providing beach access for the majority of this rapidly-growing volume of vacationers who visit our beach areas. Therefore, a major portion of PRT's program to expand beach access opportunities will be to directly support, complement and provide guidance to the private sector of the tourism-leisure industry.

- \* Leisure Industry Technical Assistance - Assist private investors, developers and businesses in the development of ocean and beach-related facilities to serve visitors as well as residents (through staff of PRT Tourism Division and other units).

- \* Accommodating More Beach Users Within Limited Areas - In cooperation with private enterprise, develop design concepts and standards to serve larger numbers of future

beach vacationers through accommodations and other facilities within the limits of available beach areas.

- \* Promotion to Expand Lower-Use Seasons - Gear PRT promotion and advertising to accommodate more total beach vacationers by extending beach vacations into seasons conducive to beach usage that are presently under-utilized. Work with local promotion agencies and the private sector in encouraging such efforts on the local levels.

- \* Build Ancillary Values of Beach Access - Beaches can be the lure to attract millions of vacationers and conventioners whose feet need never to touch the ocean water or beach sand. Climatic conditions impose limits in South Carolina on the direct use of the oceans and beaches during some seasons. However, scenic and aesthetic values can be utilized year-round through ocean-view motel rooms and scenic overlooks while providing heated covered swimming pools along with golf, tennis, sightseeing and other indoor and outdoor recreation not directly associated with the beaches.

## Part Seven

\* Develop Inland Vacation Destinations - As beach access needs are expanded to accommodate the ever-increasing future demands, a part of PRT's program will be to develop and promote inland visitor destination areas, which will relieve some of the future "growth pressures" on the beaches while building the economy and recreation opportunities in the other areas of the state.

\* Economic Incentives to Private Enterprise - Work with local governments in developing economic incentives to encourage private enterprise to provide beach access to serve the general public.

\* State Parks as a Stimulus for Private Beach Developments - Continue PRT's policy of State Park development to stimulate adjacent private sector developments, such as privately-owned oceanfront campgrounds in the Grand Strand. Look to the private sector to provide some of the facilities within State Parks, including those in the beach areas.

# Public Beach Access And Recreation Plan

## PUBLIC SECTOR ACTIONS

Public agencies on the local, state and federal levels have significant opportunities as well as responsibilities to serve South Carolina's public recreation needs, including those related to ocean or beach access. Through its State Parks, Recreation and Planning divisions, PRT will endeavor to help meet such needs through a number of programs for South Carolinians as well as visitors.

\* Existing State Parks - Develop the full beach access potential of existing coastal State Parks while protecting the natural qualities of these environmentally-sensitive properties.

\* Acquire Additional Park Lands - The fact that the four oceanfront State Parks accounted for over 40% of the total 10,500,000 visitors in the entire South Carolina State Park system last year is evidence of the fact that additional coastal park lands must be acquired to help meet public beach access needs in the future.

# Public Beach Access And Recreation Plan

## Part Seven

\* Fuller Utilization of Existing Government-Owned Lands - Many thousands of acres of coastal lands in South Carolina are now owned by federal and state government agencies. Public agencies that own coastal lands should be encouraged to accommodate beach access and recreation needs wherever possible, consistent with conservation and other land use priorities for such properties. PRT proposes to consider cooperative working relationships with other agencies to help meet such needs.

\* Technical Assistance to Local Public Agencies - PRT's Recreation Division is available to provide all available research, information, and guidance to help local public agencies develop plans to meet recreation needs, including coastal communities that may be involved in providing beach access.

\* Research, Guidelines and Action Proposals - In cooperation with the U.S. Bureau of Outdoor Recreation, the South Carolina Coastal Zone Council, the Charleston County PRT Commission and other local groups, PRT has co-sponsored a public beach access study to compile all available facts and data, conduct market and legal research and develop

ideas and proposed action courses that might be considered by interested public agencies as they make plans and decisions to accommodate beach access and related recreation needs. The findings of this study will be available to interested public agencies as well as the sponsors.

\* Funding Assistance Programs - "There ain't no free lunch" - all approaches to public beach access are costly and somebody has to pick up the tab. PRT administers the Land and Water Conservation Fund of the U.S. Bureau of Outdoor Recreation at the State level and 50-50 matching funds from this source are available through the three coastal regional Councils of Government to help public agencies to fund local recreation projects. However, federal, state or local funds are far from adequate to meet the rapidly-growing public beach access needs of South Carolinians and the millions of out-of-state visitors who come to our State for beach vacations and recreation. In cooperation with other involved public and private groups, PRT proposes to seek or develop an adequate funding mechanism to help local areas meet their beach access and recreation needs in the future.

## Part Eight

### APPENDIX II

#### SUMMARY OF RECREATION FACILITIES IN THE SOUTH CAROLINA COASTAL ZONE

Major recreational and tourism aspects of South Carolina's coastal zone have been identified as part of this report. In the 10-county South Carolina coastal area, there are 56 golf courses in 46 separate golf clubs. The majority are 18-hole championship courses centered around Myrtle Beach, Charleston, and Hilton Head Island. Twelve of the golf courses are associated with private country clubs, and require membership. Forty are semi-private located primarily in the remote areas and require some type of membership, although generally available to the public. Only two courses are completely public.

Hunting and fishing are both popular recreational pastimes along South Carolina's shore. In 1974, there were 14 fishing piers, 37 marinas, 335 boat ramps and 29 charter fishing boats in operation. The public also had access to 208 hunting areas and preserves covering over 162,000 acres.

There are 107 public parks within the region, run by the state, counties

## Appendices

or local municipalities and 222 playground areas, most of which are part of local school districts.

Ten state parks and recreation areas located in the coastal area comprise a total of 58,545 acres. Most of these parks offer boating, swimming, fishing and picnicking as recreational activities, and many offer camping facilities or cabins as well for overnight public use.

There are hundreds of hotels and motels crowding many of these beach areas, complete with swimming pools and other recreational facilities, as well as 25 or more campgrounds and over 11,000 campsites serving as overnight accommodations for beach goers.

Existing recreation facilities in South Carolina's Coastal Zone are summarized in Exhibit II-A.

# Appendices

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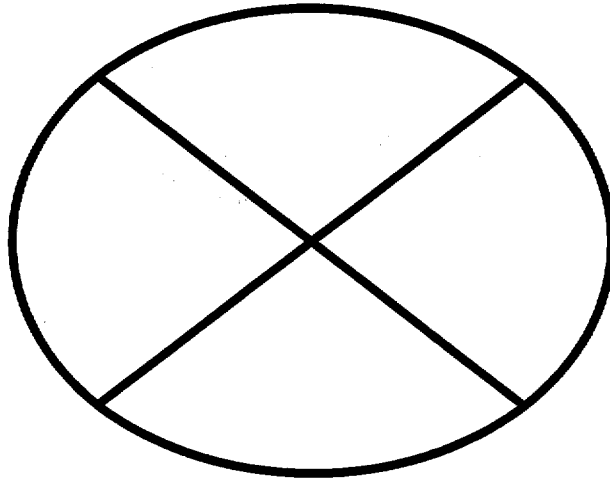
### EXHIBIT II-A

#### 1974 RECREATION RESOURCES SOUTH CAROLINA COASTAL COUNTIES

COUNTY TOTALS	LOCATION TYPE											
	Public Parks	Playground	Camp Areas	Sleep Accom.	Hunt Areas	Spectators	Fishing	Riding	Water Sports	Land Sports	Golf	Nature-Hist.
Georgetown	9	10	0	15	27	0	7	0	10	11	5	126
Horry	19	24	15	462	5	8	21	2	19	24	41	100
Williamsburg	3	11	0	3	18	0	2	0	5	4	1	20
Berkeley	10	29	5	8	42	5	18	0	20	12	5	51
Charleston	44	87	15	54	24	6	12	7	32	38	17	70
Dorchester	3	14	1	2	5	3	7	2	3	4	2	3
Beaufort	7	18	3	18	10	0	5	2	19	20	10	79
Colleton	6	14	4	13	23	0	22	0	3	7	1	3
Hampton	2	8	1	0	31	0	1	0	6	12	1	0
Jasper	4	7	1	18	23	2	1	0	11	5	2	6
STATE TOTALS	107	222	50	593	208	24	96	13	128	125	85	458

Source: South Carolina Recreation Resources Inventory, Table 1,  
SCORP - 1975 Executive Summary, p. 9.

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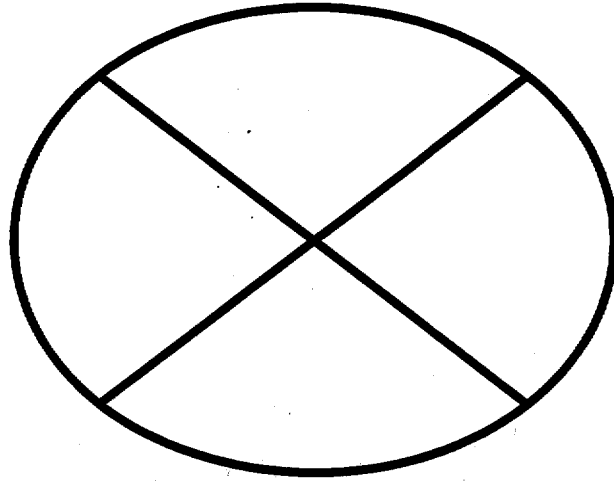


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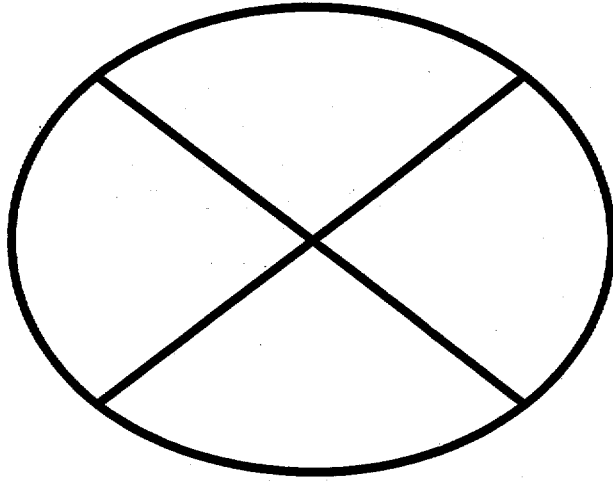


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## Part Eight

Hartzog, Lader & Richards has reviewed the recreation facilities of the State by selecting those outdoor recreation facilities in South Carolina's coastal counties that specifically relate to public beach use. Facilities extracted from the SCORP Recreation Resources inventory include campground accommodations, marina and boat landings, and hunting preserves near the shore. Remaining facilities contained in the SCORP inventory not included here were either considered not relevant to this study, or inadequate information existed in the inventory for the purpose of evaluation.

Any description of water-based recreation within the South Carolina Coastal Zone should be a part of that area's regional recreational facilities, because water is the coastal region's greatest natural asset and its greatest potential for recreational development. The Grand Strand area with two regional parks -- Myrtle Beach and Huntington Beach -- have greater public recreation resources than the remainder of the coastal counties, but also has large demand for use of these facilities.

## Appendices

A general description of coastal recreation, therefore, is discussed according to regional parks and water-based recreation, coastal state parks, historic parks and areas, and other public recreation facilities located within national preserves or natural areas.

Presently, Berkeley County has no regional parks. In Dorchester County, Grahams Ferry State Park can be considered regional in nature. Because of its proximity, Colleton Wayside State Park on S.C. 15 is considered a regional park for Dorchester County. Charleston County has only one regional park -- Edisto Beach State Park. As the only coastal state park in Charleston County, its recreational burdens are immense.

Beaufort County's Hunting Island State Park serves that county's regional park needs.

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## Part Eight

### COASTAL STATE PARKS

Of South Carolina's forty state parks, ten state-run public park and recreation areas exist in the South Carolina coastal region. They include Charles Towne Landing, Drayton Hall Historic Park, Edisto Beach State Park, Givhans Ferry State Park, Hampton Plantation, Hunting Island State Park, Huntington Beach State Park, Myrtle Beach State Park, Old Dorchester State Park, and Rivers Bridge. Four state parks -- Myrtle Beach, Huntington Beach, Edisto Beach, and Hunting island -- are located on the ocean. A brief description of the size and facilities available at each of the coastal state parks follows.

#### Myrtle Beach State Park

Covering 312 acres and located 3 miles south of Myrtle Beach on U.S. 17, Myrtle Beach State Park is divided into four use areas: a camping area with 155 tent and trailer campsites, in addition to facilities for group and primitive camping; a day-use area that includes eight picnic shelters, a swimming pool, ocean swimming along one mile of sand beach, and two restroom and change houses; an interpretive

area with historical, natural environment and museum trails, as well as a visitors' center; special areas exist within the park, such as a 750-foot fishing pier with bait-tackle concession, Putt-Putt carpet golf, five rental cabins, and an equipment rental concession. There is parking for each developed campsite and an estimated 400 parking spaces for day visitors.

Source: Master Plan and Land Use Plan - Myrtle Beach State Park, January, 1971; South Carolina Department of Parks, Recreation and Tourism.

#### Huntington Beach State Park

Buffered from U.S. 17, the entrance to Huntington Beach State Park is opposite Brookgreen Gardens, 3 miles south of Murrells Inlet on U.S. 17. Presently, recreation consists of swimming, fishing, camping, and picnicking. A majority of the park's 2,500 acres is in tidal marsh. The principal picnic area and associated swimming beach is located in the main part of the park. It contains an 18-hole carpet golf course, a concession stand, shelters, change house and showers, a small playground and a large parking lot with space for an estimated 220 cars. The picnic

## Part Eight

area is well-cleared of underbrush but scattered trees enhance the area. The park has 2.93 miles of ocean frontage, with a 140-foot wide beach at low tide.

Camping in the park consists of a 52-unit tent and trailer area and a recently-built 75-unit tent and trailer area, for a total of 127 campsites. Both areas provide utility hookups, tables and grills at each site. There are two comfort stations with restrooms and showers in each camping area. A trading post is located at the entrance to the 75-unit campground. Camping and food supplies can be purchased at this store. The 52-unit camping area has no recreational facilities immediately available. A recreation building and small playground are located in the 75-unit camping area.

Other facilities include an alligator habitat and feeding station, boardwalk and observation platform for salt water marsh habitat, two observation towers and interpretive kiosks.

The north end of the park is primarily used for fishing and occasionally for group and primitive camping. Two shelters and a small parking lot are provided. No water or restroom facilities are provided.

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Atalaya is a unique structure built by the Huntingtons. Its present condition is deteriorating but repairable and visitors can walk through its rambling rooms and interior garden. The South Carolina Arts Commission is developing plans for the creation of an arts center to be housed within Atalaya, and parking for 160 cars.

Source: Huntington Beach State Park  
Master Plan, June, 1974; South  
Carolina Department of Parks,  
Recreation and Tourism.

### Hampton Plantation State Park

Historic restoration of the house and grounds of Archibald Rutledge, poet laureate of South Carolina, is the focus of Hampton Plantation State Park. Located near McClellanville on U.S. 17, the park contains 310 acres.

Source: South Carolina State Parks;  
South Carolina Department  
of Parks, Recreation and Tourism,  
pp. 42-43.

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### Charles Towne Landing

Site of South Carolina's first permanent settlement in 1670, this 664-acre state park includes picnic shelters, a 17th century trading post replica, a restaurant, 200-acre animal forest, nature and historic interpretive centers, a nature trail, open-air exhibit pavilion, 400-seat theatre, and parking for 1,000 cars. The park is located 3 miles from downtown Charleston on S.C. 61.

Source: South Carolina State Parks,  
South Carolina Department  
of Parks, Recreation and  
Tourism, pp. 42-43.

### Old Dorchester State Park

Located 6 miles south of Summerville on S.C. 642, 20 miles from Charleston, this park includes a picnic and fishing area and 100 parking spaces. The 97.4 acre park is part of the ruins of a 1788 community.

### Drayton Hall Historic Park

Located on 632 acres near Charleston, Drayton Hall was acquired in 1975 through a combined effort of the National Trust for Historic Preservation, the Historic Charleston Foundation and the South Carolina Department of Parks, Recreation and Tourism. The National Trust will retain, restore, and operate the Drayton Hall mansion and 135 acres, and PRT will utilize the newly-acquired adjacent land as a State Park.

### Givhans Ferry

This state park is 1,229 acres in size and includes 25 campsites, 5 vacation cabins, picnic shelters, 3 rest stations, a community assembly building, and nature trails. Parking is available for 200 cars. Givhans Ferry is located 16 miles west of Summerville on S.C. 61.

Source: South Carolina State Parks,  
South Carolina Department  
of Parks, Recreation and  
Tourism, pp. 42-43.

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### Edisto Beach State Park

Edisto Beach State Park is located 50 miles southeast of Charleston on S.C. 174. Facilities include 5 cabins overlooking Scott Creek and Marsh (twenty-two additional cabins have been proposed), 75 tent and trailer camping sites, group camping and an interpretive center. Other facilities include a bathhouse, 18-hole putt-putt carpet golf, a picnic area, two comfort stations, a playground, and day-use parking for 250 cars.

The park has  $2\frac{1}{4}$  miles of sandy oceanfront beach 160-200 feet wide, of which three-quarters of a mile is used for swimming. The park is open daily free of charge.

Source: Master Plan and Land Use Plan for Edisto Beach, South Carolina Department of Parks, Recreation and Tourism.

### Rivers Bridge

Rivers Bridge is located 7 miles southwest of Ehrhardt, S.C., off S.C. 64. Its 390 acres include such recreational facilities as 25 campsites, picnic shelters, a swimming pool, nature trail and interpretive center, and river fishing.

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### Hunting Island State Park

This park, located 16 miles east of Beaufort, S.C., on U.S. 21, contains the following facilities: 136-foot lighthouse built in 1873, wildlife observation area with nature trails, 200 campsites, 4 comfort stations, day-use parking for 400 cars, a bathhouse, 13 rental cabins, picnic and swimming areas, a boat launching ramp, a small playground, and carpet golf. The park covers 5,000 acres.

Source: Hunting Island State Park Development Plan; South Carolina Department of Parks, Recreation and Tourism.

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### EXHIBIT II-B

#### SUMMARY OF STATE PARK AREAS IN THE SOUTH CAROLINA COASTAL REGION

Charles Towne Landing	City of Charleston	667	1971	Historic Park
Edisto Beach	S.C. 174, 50 miles S.E. of Charleston	1,255	1956	Regional Park
Givhans Ferry	S.C. 61, 16 miles W. of Summerville	1,235	1934	Regional Park
Hampton Plantation	U.S. 17, near McClellanville	322	1971	Historic Park
Hunting Island	U.S. 21, 16 miles E. of Beaufort	5,000	1938	Destination Park
Huntington Beach	U.S. 17, 3 miles S. of Murrell's Inlet	2,500	1960	Destination Park
Myrtle Beach	U.S. 17, 3 miles S. of Myrtle Beach	312	1934	Regional Park
Old Dorchester	S.C. 642, 6 miles S. of Summerville	97	1960	Historic Park
Rivers Bridge	S.C. 64, 7 miles S.W. of Ehrhardt	390	1945	District Park
Drayton Hall	Charleston	<u>632</u>	1975	Historic Park
Total Acres		58,545		

Source: South Carolina Recreation Resources Inventory, Title I, p. 43.

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### SELECTED RECREATIONAL TOURIST ATTRACTIONS

#### Myrtle Beach, SC

##### Myrtle Beach Amusement Parks

Myrtle Beach Pavilion                      5 ac.  
812 North Ocean Boulevard

Myrtle Beach Amusement Park    9 ac.  
South Ocean Boulevard              610 parking spaces

Grand Strand Amusement Park 12 ac.  
4th Ave. & S. Ocean Blvd.    600 parking spaces

Sun Fun Amusement Park              3 ac.  
Main St. & U.S. 17                  400 parking spaces  
Ocean Drive Section,  
N. Myrtle Beach

Ocean Drive Pavilion &  
Amusement Park  
Main St. & Ocean Blvd.

Magic Harbor Theme Park  
(Pirateland)                              97 ac.  
4 mi. So. of Myrtle Beach    600 parking spaces

Surfside Amusement Park  
Surfside Beach

## Appendices

### Brookgreen Gardens

Located on U.S. 17 at Murrells Inlet, 18 miles south of Myrtle Beach, this park is an outdoor sculpture museum and is comprised of four old rice plantations. There is a wildlife park, 350 pieces of American sculpture, and picnic facilities. It is open daily 9 a.m. to 4:45 p.m. Admission \$1.00 for adults, \$.25 for children.

### Georgetown, SC

#### The Rice Museum

This museum on Front Street in Georgetown depicts the rice growing Georgetown county region in the 1840's. Open Monday-Friday 9 a.m. to 5 p.m. Admission \$1.00 adults, free for students.

#### Belle Isle Gardens (c. 1895)

Located six miles south of Georgetown on Winyah Bay, this park contains historic Battery White (c. 1862). Gardens are open to the public all year, except September and October.

### Cape Romain Wildlife Refuge

An outstanding wildlife refuge that allows visitor use of Bulls Island for shell collecting, bird watching, in-season hunting, and fishing. Bulls Island can be reached by boat from Moore's Landing off U.S. 17, fifteen miles north of Charleston. Boat leaves at 8:30 a.m. daily and returns to pick up visitors in late afternoon.

### Sullivan's Island

#### Fort Moultrie

Present fort was built between 1807 and 1811. Fort Moultrie was used during the American Revolution and again in the War between the States. It is located on West Middle Street, Sullivan's Island. The 31.8 acre site is maintained by the National Park Service.

#### Sullivan's Island Lighthouse

The 15-story lighthouse, maintained by the U.S. Coast Guard, a boathouse and landing are on the National Register of Historic Places. Located on Atlantic Avenue, the lighthouse is open 2:00 p.m. to 4:00 p.m. on Saturdays and Sundays, and 3:00 p.m. to 4:00 p.m. on Tuesdays and Thursdays.

### Charleston, SC

#### Fort Sumter National Monument

In Charleston Harbor, Fort Sumter was one of a series of coastal fortifications built by the U.S. after the War of 1812. In 1861, the first shot was fired that began the Civil War. The fort can be reached by boat from Charleston Municipal Marina; schedule varies. Admission \$2.50 for adults and \$1.00 for children.

#### Middleton Place Gardens

Middleton Place is an example of an 18th and 19th century plantation. Located on the Ashley River, it was first owned by Henry Middleton in 1740. Middleton Place has the first landscaped garden in America. The Middleton Place House Museum, c. 1755, is a registered national historic landmark. Gardens and stables are open daily. Admission \$2.50 for adults, \$1.50 for students, and \$.75 for children.

#### The Citadel

Located in downtown Charleston near Hampton Park, the military college of Charleston includes dress parades on Fridays at 3:45 p.m. The military museum is open Monday through Friday and Sunday from 2:00 p.m. to 5:00 p.m. Saturday 9:00 a.m. to 5:00 p.m. Admission is free.



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### Cypress Gardens

Located 23 miles from Charleston off Hwy. 52, Cypress Gardens is open February 15-May 1. It offers boat and walking tours through old cypress trees and floral displays on 250 acres and an outdoor restaurant. Adults \$2.50.

### Magnolia Gardens

Located 12 miles from Charleston on Hwy. 61, Magnolia Gardens is open February 15 - May 1. The Gardens contain over 500 varieties of camellias, with live oaks, cypress trees, and azaleas. Adults \$2.50.

### Boone Hall Plantation

A land grant in 1681 to Major John Boone, one of the earliest South Carolina settlers, established Boone Hall Plantation. The 738 acre plantation is located 8 miles north of Charleston on U.S. 17 and includes Boone Hall, gin houses, slave cabins, formal gardens. It is open to the public Monday-Saturday 9:00 a.m. to 5:00 p.m., Sunday 1:00 p.m. to 6:00 p.m.

### Patriots Point

As a major new tourist attraction, sponsored by the Patriots Point Development Authority, Patriots Point is a planned naval and maritime museum featuring the aircraft carrier USS Yorktown and other ships, including the N.S.

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Savannah. Developed on Hog Island along the eastern shore of the Charleston Harbor, this 150 acre tract of parkland is part of 500 acres to be leased for private development of support facilities. A 400-room motel in twin 12-story towers, as well as a marina, are already planned for this area. January 1, 1976 is the planned opening.

### Other attractions and Points of Interest in Charleston

Hunley Museum  
Provost Dungeon  
Old Stove Mart Museum  
Charleston Carriage Rides  
Port of Charleston  
Confederate Museum  
Old Powder Magazine  
Charleston Naval Base  
Charleston Harbor Tour  
Charleston Museum  
City Market  
Dock Street Theatre

### Beaufort, S.C.

Beaufort Arsenal Museum  
Sheldon Church Ruins  
Parris Island Marine Training Center

### EXHIBIT II-C

#### SOUTH CAROLINA TOP RANKED OCEANFRONT STATE PARKS

1975 Rank*	Attendance	
	1974	1975
1. Myrtle Beach State Park	2,031,120	2,005,916
2. Hunting Island State Park	780,020	1,066,064
3. Huntington Beach State Park	497,309	491,236
4. Edisto Beach State Park	<u>191,748</u>	<u>483,994</u>
	3,500,197	4,047,210

\* Ranking among all South Carolina State Parks.

Source: South Carolina Department of Parks, Recreation  
and Tourism, March, 1976.

## EXHIBIT II-D

## SOUTH CAROLINA COASTAL TENNIS FACILITIES

	<u># Courts</u>	<u>Category</u>		<u># Courts</u>	<u>Category</u>
<u>North Myrtle Beach</u>			<u>Charleston</u>		
Carolina Shores	4	Pr*	Kiawah Island	10	Pr
Hillside Tennis Courts	6	P	Seabrook Island	2	Pr
Robbers Roost Racquet Club	6	Pr*	Edisto Island (Oristo)	4	Pr*
<u>Conway</u>			<u>Beaufort</u>		
University of South Carolina	2	P	Fripp Island	6	Pr
Conway Golf & Country Club	2	Pr	Beaufort Public Courts	4	P
Conway Public Courts	3	P			
<u>Myrtle Beach</u>			<u>Hilton Head Island</u>		
Deer Track Golf & Country Club	4	Pr*	Hilton Head Plantation	8	Pr*
Dunes Golf & Beach Club	4	Pr*	Palmetto Dunes	18	Pr*
Eagle Nest Tennis Club	4	Pr*	Island Club	2	Pr
Surf & Dunes Motor Inn	3	Pr*	Port Royal	4	Pr*
Litchfield Racquet Club	17	Pr*	Shipyards Plantation	22	Pr*
Myrtle Beach Public Courts	5	P	Sea Pines Plantation	31	Pr*
Myrtle Beach Racquet Club	11	Pr*			
Myrtle Beach Tennis Club	10	Pr*			
Myrtlewood Tennis	4	Pr*			
Ocean Drive Public Courts	2	P	P - Public		
Pan American Resort	3	Pr*	Pr - Private		
Pine Lakes Country Club	2	Pr*	Pr* - Open to non-members for a fee		
Sea Mist Resort	3	Pr*			
<u>Surfside Beach</u>			Source: "Coast Vacationers Guide", vol. XX, No. 33, Nov., 1975, p. 61-62.		
Surfside Beach Public Courts	2	P			

# Appendices

## Part Eight

### EXHIBIT II-E

#### SOUTH CAROLINA COASTAL GOLF COURSES

	<u>Holes</u>	<u>Category*</u>		<u>Holes</u>	<u>Category*</u>
<u>North Myrtle Beach</u>			<u>Pawleys Island</u>		
Azalea Sands Golf Club	18	R	Sea Gull Golf Course	18	R
Bay Tree Golf Plantation	54	R	<u>Georgetown</u>		
Beachwood Golf Club	18	R	Wedgfield Plantation Country Club	18	R
Cypress Bay Golf Club	18	R	Winyah Bay Golf Club	9	P
Eagle Nest Golf Club	18	R	Georgetown Country Club	9	PR
Possum Trot Golf Club	18	R	<u>Loris, S.C.</u>		
Robbers Roost Golf Club	18	R	Carolinas Country Club	9	R
Surf Golf & Beach Club	18	R	<u>Charleston</u>		
<u>Myrtle Beach</u>			Charleston Municipal Golf Course	18	P
Arcadian Shores Golf Club	18	R	Morgan's Point	18 (U.C.)	R
Arcadian Skyway Golf Club	27 (U.C.)	R	Seabrook Island	18	PR
Deer Track Golf & Country Club	18	R	Country Club of Charleston	18	PR
Dunes Golf & Beach Club	18	R	Shadowmoss Country Club	18	PR
Myrtle Beach A.F.B. Golf Course	9	M	King's Grant Country Club	9	PR
Myrtle Beach National Golf Club	54	R	The Oaks Golf & Country Club	9	PR
Myrtlewood Golf Club	36	R	Yeomans Hall Golf Club	18	PR
Pine Lakes International Golf Club	18	R	Snee Farm Golf Course	18	PR
Quail Creek Golf Club	18	R	Charleston A.F.B. Golf Course	18	M
<u>Conway</u>			<u>Edisto Beach</u>		
Conway Country Club	18	SP	Oristo Golf Club	18	R
<u>Litchfield Beach</u>					
Litchfield Golf Club	18	R			

## EXHIBIT II-E (con't.)

## SOUTH CAROLINA COASTAL GOLF COURSES

	<u>Holes</u>	<u>Category*</u>
<u>Fripp Island</u>		
Fripp Island Golf Club	18	R
<u>Beaufort</u>		
Royal Pines Country Club	36	PR
Parris Island Golf Course	18	M
<u>Hilton Head Island</u>		
Hilton Head Golf Club	18	R
Dolphin Head Golf Club	18	R
Palmetto Dunes Golf Club	36	R
Port Royal Inn and Golf Club	27	R
Sea Pines Plantation	54	R
Spanish Wells Golf Club	9	PR

\* South Carolina golf courses are categorized among the following designations:

R (Resort) - greens fee play open to guests of certain inns, motels, etc.

P (Public) - open to anyone

PR (Private) - open only to members and guests of members

M (Military) - open only to military and guests of military

Source: S.C. Department of Parks, Recreation and Tourism, Columbia, S.C., January, 1976.

# Appendices

## Part Eight

### EXHIBIT II-F

#### SOUTH CAROLINA COASTAL CAMPGROUNDS

<u>MYRTLE BEACH - GRAND STRAND</u>	<u>Ownership*</u>	<u>Camping Units</u>		<u>Ownership*</u>	<u>Camping Units</u>
<u>Little River</u>			<u>Myrtle Beach (con't.)</u>		
Plantation Campground (20 mi. N. of Myrtle Beach on U.S. 17)	C	50	Ocean Lake Family Campground (5 mi. S. of Myrtle Beach on U.S. 17)	C	1,900
<u>North Myrtle Beach</u>			Huntington Beach State Park (20 mi. S. of Myrtle Beach on U.S. 17)	S	135
Riverside Marine Campground Little River Neck Road (2 mi. from U.S. 17 on S.C. 9)	C	75	<u>Francis Marion National Forest</u>		
Gilreath's Campground Cherry Grove (1/2 mi. from U.S. 17)	C	10	Guilliard Lake Campground (McClellanville - 17 mi. N.W. of S.C. 45)	F	10
<u>Myrtle Beach</u>			Buck Hall Campground (30 mi. N.E. of Charleston on U.S. 17)	F	11
Sherwood Forest Campground (10 mi. N. of Myrtle Beach on U.S. 17)	C	525	Bonneau Campground (7 mi. N. on U.S. 52)	F	12
Ponderosa Family Campground (10 mi. N. of Myrtle Beach on U.S. 17)	C	1,000	<u>Santee</u>		
Holiday Inn Trav-L-Park (9 mi. N. of Myrtle Beach on U.S. 17)	C	600	Shawnee Campground (2 mi. E. on S.C. 6)	C	225
Lake Arrowhead Campground (8 mi. N. of Myrtle Beach on U.S. 17)	C	1,300	Bob's Marina (6 mi. E. on S.C. 6)	C	25
Apache Family Campground (7 mi. N. of Myrtle Beach on U.S. 17)	C	755	<u>North of Charleston</u>		
Birch Canoe Family Campground (U.S. 17 at 5th Ave., South)	C	250	Sewee Campground (Awendaw - 25 mi. N. of Charleston on U.S. 17)	C	106
Springmaid Family Campground (S. Ocean Blvd.)	C	114	Holiday Inn Trav-L-Park (18 mi. N. of Charleston on U.S. 17)		188
Pebble Beach Family Campground 300 S. Ocean Blvd.	C	92	<u>Charleston</u>		
Myrtle Beach State Park (3 mi. S. of Myrtle Beach on U.S. 17)	S	155	Oak Plantation Campground (6 mi. S. of Charleston on U.S. 17)	C	137
PirateLand Family Campground (4 mi. S. of Myrtle Beach on U.S. 17)	C	1,061	Charleston KOA Campground (15 mi. W. of Charleston off I-26)	C	160
Lakewood Family Campground (4 mi. S. of Myrtle Beach on U.S. 17)	C	1,500	Island Campground	C	150

# Part Eight

# Appendices

## EXHIBIT II-F (con't.) SOUTH CAROLINA COASTAL CAMPGROUNDS

<u>Ownership*</u>	<u>Camping Units</u>	<u>Ownership*</u>	<u>Camping Units</u>
<u>Monck's Corner</u>		<u>Hardeeville</u>	
Big Boo Family Campground (3 mi. N. on S.C. 402)	C 300	Lake Pines KOA Kampground (2 mi. N. of Hardeeville on U.S. 17)	C 150
Evans' Landing (13 mi. S. on S.C. 260)	C 8	<u>Yemassee</u>	
<u>Folly Beach</u>		Americamps - Point South (Interchange U.S. 17 and I-95)	C 68
Campers Cove Campground (9 mi. S. of Charleston on S.C. 171)	C 20	Point South KOA Campgrounds (Interchange of I-95 and U.S. 17)	C 65
<u>Edisto Beach</u>		Total S.C. Coastal Zone Campsites	11,463
Hutson's Landing Club & Marina (23 mi. From U.S. 17 on S.C. 174)	C 16		
Edisto Beach State Park (25 mi. from U.S. 17 on S.C. 174)	S 75		
<u>Beaufort</u>			
Seaside - Campers Station Creek Landing (6 mi. S.E. of Frogmore near Beaufort)	C 15	Source: "Mountains, Beaches, Lakes and Other Places to Camp in South Carolina", S.C. Division of Tourism, HLR.	
Hunting Island State Park (17 mi. E. of Beaufort on U.S. 21)	S 200	*C = Commercial S = State F = Federal	

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## Part Eight

### EXHIBIT II-G

#### SOUTH CAROLINA OCEAN FISHING PIERS

Inlet Fishing Pier E. Cherry Grove Beach	Second Avenue Pier Myrtle Beach
Cherry Grove Fishing Pier	Myrtle Beach State Park Pier Myrtle Beach State Park
Tilghman Fishing Pier Tilghman Beach	Surfside Fishing Pier Surfside Beach
Crescent Beach Fishing Pier	Kingfisher Fishing Pier Garden City Beach
Windy Hill Fishing Pier Windy Hill Beach	Isle of Palms Fishing Pier
Kit's Fishing Pier Windy Hill Beach	Sea Point Fishing Pier Folly Beach
Ocean Plaza Fishing Pier Myrtle Beach	Collins Pier Edisto Beach

Source: South Carolina Beaches, Dept. of Parks, Recreation  
and Tourism, Columbia, S.C.



## EXHIBIT II-H

### SOUTH CAROLINA PUBLIC BOAT LANDINGS

#### WACCAMAW AREA

Worthams Ferry Landing  
 Bellamy's Landing - Waccamaw River  
 Bridge & Highway 9  
 Red Bluff Landing - Highway 905  
 Reaves Ferry Landing  
 \*Toddville Landing - Harper's Store -  
 Highway 701  
 \*Old Chimney Landing - Highway 701 -  
 7 mi. W. of Conway  
 \*Peachtree Landing - Socastee Br.  
 Wachasaw Landing - Murrells Inlet  
 Hagley Landing - Hagley Plantation  
 New Meeting Street Landing - George-  
 town, SC  
 Meeting Street Landing - Georgetown,  
 SC  
 Shrine Club Landing  
 South Island Ferry Landing - So.  
 Island  
 Poleiard - Highway 17 - N. Santee Br.  
 Harris Lake - W. of Highway 17

#### CHARLESTON COUNTY

Buck Hall Landing  
 Wando Landing - Creech's Grocery  
 Mitch Graham Landing  
 Remley's Point Landing  
 Shem Creek Landing - Mt. Pleasant  
 Municipal Yacht Basin  
 Wando Woods  
 Ashley River Landing - W. Ashley  
 River Bridge  
 Wappo Landing - Wappo Cr. Br.  
 Lloyd Flemming Landing - James Island  
 Stono Landing - John F. Limehouse Br.  
 Bulow Landing  
 Cherry Point Landing - Rockville  
 Dawhoo Bridge Landing - Edisto Is.  
 \*Welton Bluff Landing - Hutton Plantation  
 \*Penny Creek Landing - Edisto River

#### COLLETON COUNTY

Bennetts Point Landing - Draw Bridge in  
 Bear Is. Game Management Area on  
 Ashepoo River  
 Tripps Landing at Field's Point

#### BEAUFORT COUNTY

\*New River Landing - New River Bridge on  
 Highway 170  
 Chechessee Landing - Chechessee Bridge &  
 Highway 170  
 All Joy Landing - May River in Bluffton  
 Broad Creek - Hilton Head Island  
 \*Bolen Hall Landing - Old House, S.C.  
 Broad River Landing - Broad River  
 Bridge & Highway 170  
 \*Grays Hill Landing  
 City Parking Lot Landing - Bay Street -  
 Beaufort  
 Public Landing - Beaufort bridge  
 Station Creek Landing - St. Helena Island  
 Wilkins Landing - Johns Point  
 Russ Point Landing - Hunting Island  
 Buckingham Boat Landing - Broad Creek  
 Battery Creek - 2 boat ramps  
 Beaufort River - 3 boat ramps  
 Brickyard Landing - Rd. 26 @ Brickyard

Source: S.C. Boat Landings, S.C.  
 Dept. of Wildlife & Marine  
 Resources, Div. of Boating,  
 Columbia, SC, 1974.

\*County-owned and maintained boat ramp  
 located outside of area depicted on  
 accompanying maps.

## EXHIBIT II-I

### SOUTH CAROLINA COASTAL MARINAS

	<u>Operator*</u>		<u>Operator*</u>
<u>North Myrtle Beach</u>		<u>Sullivan's Island</u>	
Palmetto Marina	C	Exxon Marina	C
Esso Marina	C		
Briarcliff Yacht Basin	P	<u>Charleston</u>	
<u>Myrtle Beach</u>		Hobcaw Yacht Club	C
Hague Marina	-	Fisherman's Marina	C
		Charleston Municipal Marina	M
<u>Conway</u>		Botany Bay Marina	P
Conway Marina	M	<u>Beaufort</u>	
<u>Georgetown</u>		Ladies Island Marina	C
Gulf Auto Marina	C	Worth's (Exxon) Marina	C
Nautica Marina	C	Griffin's Marina	C
Belle Isle Marina	P	<u>Hilton Head Island</u>	
<u>Murrells Inlet</u>		Harbour Town Yacht Basin	C
Gaddys Marina	P	South Beach Marina	C
Alex's Marina	P	Palmetto Bay Marina	C
Inlet Marina	P	Hilton Head Harbor	C
Wacca Wache Marina	C		
Nachasaw Landing Marina	C		
<u>Garden City</u>			
Bucksport Marina	-		
Gulf Stream Marina	-		
<u>Isle of Palms</u>			
Isle of Palms Marina	C		

\* C = commercial  
P = private  
M = municipal

Source: Hartzog, Lader & Richards, October, 1975.

\* C = commercial  
P = private  
M = municipal

Source: Hartzog, Lader & Richards, October, 1975.

## EXHIBIT II-J

SELECTED SOUTH CAROLINA COASTAL  
GAME MANAGEMENT AND HUNTING AREAS

<u>Name of Area</u>	<u>Size</u>	<u>Quality*</u>	<u>Site Ownership</u>
Westvaco	2,200 ac.	B	Private
Canal Wood Corporation	3,449 ac.	B	"
Georgia Pacific Corporation	21,655 ac.	B	"
International Paper Company	37,812 ac.	B	"
Waccamaw Game Management Area	7,626 ac.	-	Private (a)
Buist Game Management Area	16,236 ac.	-	Private (b)
<u>N. SANTEE</u>			
Westvaco - Oaks	5,129 ac.	-	Private
Westvaco - Odum Campfield	954 ac.	B	"
Santee Cooper Preserve			Federal
<u>CHOPPEE</u>			
Westvaco - North	19,196 ac.	B	Private
<u>YOUHAMAH</u>			
Westvaco - Pee Dee	3,241 ac.	B	"
<u>MURRELLS INLET</u>			
Sandy Island Corporation	7,688 ac.	B	"
<u>SAMPIT</u>			
Westvaco - East	34,144 ac.	B	"
Ingram Lumber			
Campfield	447 ac.	B	"
Campfield	1,594 ac.	B	"
Outland	878 ac.	B	"
Outland	1,327 ac.	B	"

## APPENDIX III

MARKET ANALYSIS  
SUPPORTING DOCUMENTS

## Exhibit III-A

DAY USE BEACH USER OCCASIONS  
1975, 1980, 1985, 1990

County	1974 Income Distribution (%)	1975 Population by Income Class (000)	Avg. Annual Per Capita Use Beach User Occasions	Beach User Occasions (000)	1975 Totals (000)	1980 Income Distribution (%)	1980 Population by Income Class (000)	1980 Beach User Occasions (000)	1985 Income Distribution (%)	1985 Population by Income Class (000)	1985 Beach User Occasions (000)	1990 Income Distribution (%)	1990 Population by Income Class (000)	1990 Beach User Occasions (000)
<b>Zone 1</b>														
<b>Morry</b>														
Household Income under 5,000	32.7	26.9	3.3	88.0		28.3	21.5	71.0	24.4	19.7	65.0	21.3	18.3	60.4
5,000-9,999	31.5	26.0	6.6	119.6		29.2	22.2	101.1	26.7	21.6	99.4	24.4	21.0	96.6
10,000-14,999	17.6	14.5	6.5	94.3		16.3	12.3	81.3	13.6	11.0	71.5	11.0	9.5	61.8
15,000-24,999	12.6	9.9	10.2	101.0		16.5	12.5	127.5	20.3	16.6	169.3	21.1	18.1	181.6
25,000 +	6.2	5.1	12.9	65.8		9.5	7.2	92.8	14.8	12.0	154.8	22.2	19.1	248.4
<b>Total</b>		<b>82.4</b>		<b>469.5</b>	<b>469.5</b>		<b>76.0</b>	<b>494.7</b>		<b>80.8</b>	<b>560.0</b>		<b>86.0</b>	<b>619.8</b>
<b>Zone 2</b>														
<b>Williamsburg</b>														
5,000	43.0	14.7	3.3	48.5		38.6	13.9	45.9	34.7	13.0	42.9	31.6	12.3	40.6
5,000-9,999	30.4	10.4	4.6	47.0		28.1	10.1	46.5	25.6	9.5	43.7	23.3	9.1	41.9
10,000-14,999	13.0	4.7	6.5	30.6		12.7	4.6	29.9	9.8	3.7	24.1	7.2	2.8	18.2
15,000-24,999	9.0	3.1	10.2	31.6		13.5	4.9	50.0	17.5	6.5	66.3	18.1	7.1	72.4
25,000 +	3.9	1.3	12.9	16.0		7.1	2.6	33.5	12.4	4.6	59.3	19.8	7.7	94.3
<b>Total</b>		<b>34.2</b>		<b>175.3</b>	<b>175.3</b>		<b>34.0</b>	<b>205.8</b>		<b>37.4</b>	<b>236.3</b>		<b>39.0</b>	<b>232.4</b>
<b>Zone 3</b>														
<b>Georgetown</b>														
5,000	32.5	11.0	3.3	36.9		28.1	9.0	32.1	24.2	9.1	30.0	21.1	8.4	27.7
5,000-9,999	25.4	9.2	4.6	42.3		25.1	8.1	37.3	20.4	7.7	35.4	16.3	7.3	33.6
10,000-14,999	14.0	5.1	10.2	52.0		17.3	6.1	39.7	14.4	5.4	35.1	11.8	4.7	30.6
15,000-24,999	8.7	2.4	12.9	31.0		18.5	6.5	66.3	22.5	8.4	85.7	23.1	9.2	93.8
25,000 +						10.0	3.5	65.2	13.3	3.7	73.5	22.7	9.1	117.4
<b>Total</b>		<b>36.4</b>		<b>207.0</b>	<b>207.0</b>		<b>39.0</b>	<b>220.8</b>		<b>39.4</b>	<b>259.7</b>		<b>40.8</b>	<b>303.1</b>

# Appendices

## Part Eight

### Exhibit III-A (con't.)

#### DAY USE BEACH USER OCCASIONS 1975, 1980, 1985, 1990

Zone 4	Berkeley														
		5,000	24.5	15.3	3.3	50.5		20.1	14.7	48.5	16.2	13.1	43.2	13.1	11.8
		5,000-9,999	22.4	14.0	4.6	64.4		20.1	14.7	67.6	17.6	14.3	65.8	15.3	13.8
		10,000-14,999	21.6	13.6	4.5	88.4		20.7	15.1	98.2	18.4	14.9	96.9	15.8	14.2
		15,000-24,999	19.3	12.0	10.2	122.4		23.8	17.3	176.5	27.8	22.5	229.5	28.4	25.6
		25,000 +	12.0	7.5	12.9	96.8		15.3	11.2	144.5	20.6	16.7	215.4	28.0	25.2
	Total			62.3		422.5	<u>422.5</u>		73.0	<u>535.3</u>		81.0	<u>650.8</u>		90.0
Zone 5	Charleston														
		5,000	22.2	57.9	3.3	191.1		17.8	47.0	155.1	13.9	38.3	129.7	10.8	31.1
		5,000-9,999	21.2	55.2	4.6	253.9		18.9	49.9	229.5	16.4	45.2	207.9	14.1	40.6
		10,000-14,999	19.9	51.9	6.5	337.4		18.8	49.6	322.4	15.9	43.8	284.7	13.3	38.3
		15,000-24,999	21.2	55.2	10.2	563.0		25.7	67.8	691.6	29.7	81.9	835.4	30.3	87.3
		25,000 +	15.5	40.4	12.9	521.2		18.8	49.6	639.8	24.1	66.4	856.6	31.5	90.7
	Total			260.6		1,866.6	<u>1,866.6</u>		264.0	<u>2,038.4</u>		275.7	<u>2,314.3</u>		288.0
Zone 6	Dorchester														
		5,000	26.1	10.8	3.3	35.6		21.7	8.5	28.1	17.8	7.1	25.4	14.7	7.1
		5,000-9,999	27.3	11.2	4.6	51.5		25.0	9.8	45.1	22.5	9.7	44.6	20.2	9.7
		10,000-14,999	21.6	8.9	6.5	57.9		20.5	8.0	52.0	17.6	7.6	49.4	15.0	7.2
		15,000-24,000	17.7	7.3	10.2	74.5		22.2	8.7	88.7	26.2	11.3	115.3	26.8	12.9
		25,000 +	7.3	3.0	12.9	38.7		10.6	4.1	52.9	15.9	6.9	89.0	23.3	11.2
	Total			41.2		258.2	<u>258.2</u>		39.0	<u>266.6</u>		43.3	<u>358.7</u>		48.0
Zone 7	Colleton														
		5,000	36.3	10.3	3.3	34.0		31.9	8.9	29.4	28.0	7.9	26.1	24.9	7.1
		5,000-9,999	29.0	8.2	4.6	37.7		26.7	7.5	34.5	24.2	6.8	31.3	2.9	6.2
		10,000-14,999	17.1	4.8	6.5	31.2		16.0	4.5	29.3	13.1	3.7	24.1	10.5	3.0
		15,000-24,999	12.7	3.6	10.2	36.7		17.2	4.8	49.0	21.2	6.0	61.2	21.8	6.2
		25,000 +	4.9	1.4	12.9	18.1		8.2	2.3	29.7	13.5	3.8	49.0	20.9	6.0
	Total			28.3		157.7	<u>157.7</u>		28.0	<u>171.9</u>		28.2	<u>191.7</u>		28.5
Zone 8	Beaufort														
		5,000	28.1	14.8	3.3	48.8		23.7	12.3	40.6	19.8	10.5	34.7	16.7	9.0
		5,000-9,999	30.6	16.3	4.6	75.0		28.3	14.7	67.6	25.8	13.7	63.0	23.5	12.7
		10,000-14,999	18.7	9.9	6.5	64.4		17.6	9.2	59.8	14.7	7.8	50.7	12.1	6.5
		15,000-24,999	14.6	7.7	10.2	78.5		19.1	9.9	101.0	23.1	12.2	124.4	23.7	12.8
		25,000 +	8.0	4.2	12.9	54.2		11.3	5.9	76.1	16.6	8.8	113.5	24.0	13.0
	Total			52.7		320.9	<u>320.9</u>		52.0	<u>345.1</u>		53.0	<u>386.3</u>		54.0
Zone 9	Hampton														
		5,000	40.7	6.7	3.3	22.1		36.3	5.4	17.8	32.4	4.9	16.2	29.3	4.5
		5,000-9,999	32.1	5.3	4.6	24.4		29.8	4.5	20.7	27.3	4.1	18.9	25.0	3.9
		10,000-14,999	14.6	2.4	6.5	15.6		13.5	2.0	13.0	10.6	1.6	10.4	8.0	1.2
		15,000-24,999	9.0	1.5	10.2	15.3		13.5	2.0	20.4	17.5	2.7	27.5	18.1	2.8
		25,000 +	3.6	.6	12.9	7.7		6.9	1.0	12.9	12.2	1.9	24.5	19.6	3.0
	Total			16.5		85.1	<u>85.1</u>		15.0	<u>84.8</u>		15.2	<u>97.5</u>		15.5

# Part Eight

# Appendices

## Exhibit III-A (con't.)

### DAY USE BEACH USER OCCASIONS 1975, 1980, 1985, 1990

Zone 10	Jasper															
	5,000	42.4	5.4	3.3	17.8	38.0	4.8	15.8	34.1	4.4	14.5	31.0	4.2	13.9		
	5,000-9,999	27.1	3.5	4.6	16.1	24.8	3.1	14.3	22.3	2.9	11.1	20.0	2.7	12.4		
	10,000-14,999	16.6	2.2	6.5	17.6	15.5	1.9	12.4	12.6	1.6	10.4	10.0	1.4	9.1		
	15,000-24,999	10.5	1.3	10.2	13.3	15.0	1.9	19.4	19.0	2.5	25.5	19.6	2.6	26.5		
	25,000 +	3.4	.4	12.9	5.2	6.7	.8	10.3	12.0	1.6	20.6	19.4	2.6	33.5		
	Total		12.8		70.0	<u>70.0</u>	12.5	<u>72.2</u>		13.0	<u>84.3</u>		13.5	<u>95.4</u>		
Zone 11	Dillon															
	5,000	39.0	11.6	3.3	38.3	34.6	10.7	35.3	30.7	9.8	32.3	27.6	9.1	30.0		
	5,000-9,999	30.0	8.9	4.6	40.9	27.7	8.6	39.6	25.2	8.1	37.7	22.9	7.6	35.2		
	10,000-14,999	15.8	4.7	6.5	30.6	14.7	4.6	29.9	11.8	3.8	38.6	9.2	3.0	19.5		
	15,000-24,999	10.7	3.2	10.2	32.6	15.2	4.7	47.9	19.2	6.1	62.2	19.8	5.5	65.2		
	25,000 +	4.5	1.3	12.9	16.8	7.8	2.4	31.0	13.1	4.2	54.2	20.5	6.5	57.7		
	Total		29.7		159.2	<u>159.2</u>	31.0	<u>183.7</u>		32.0	<u>224.8</u>		33.6	<u>258.4</u>		
Zone 12	Marion															
	5,000	39.9	12.9	3.3	42.6	35.5	11.4	37.6	31.6	10.7	35.3	28.5	10.3	34.0		
	5,000-9,999	28.2	9.1	4.6	41.9	25.9	8.3	38.2	23.4	7.9	36.3	21.1	7.6	35.0		
	10,000-14,999	16.4	5.3	6.5	34.5	15.3	4.9	31.9	12.4	4.2	27.3	9.8	3.5	27.8		
	15,000-24,999	10.8	3.5	10.2	35.7	15.3	4.9	50.0	19.3	6.5	66.3	19.9	7.2	73.4		
	25,000 +	4.7	1.5	12.9	19.4	8.0	2.6	33.5	13.3	4.5	58.1	20.7	7.5	95.8		
	Total		32.3		174.1	<u>174.1</u>	32.0	<u>191.2</u>		33.9	<u>223.3</u>		36.0	<u>262.0</u>		
Zone 13	Florence															
	5,000	28.3	27.5	3.3	90.8	23.9	23.7	70.2	20.0	20.8	68.6	16.9	18.4	60.7		
	5,000-9,999	27.7	26.9	4.6	123.7	25.4	25.1	115.5	22.9	23.8	109.5	20.6	22.3	102.5		
	10,000-14,999	20.2	19.6	6.5	127.4	19.1	18.9	122.9	16.2	16.8	109.2	13.6	14.8	56.2		
	15,000-24,999	15.1	15.6	10.2	159.1	20.6	20.4	208.1	24.6	25.6	261.1	25.2	27.5	282.5		
	25,000 +	7.7	7.5	12.9	96.8	11.0	10.9	140.5	16.3	16.9	218.0	23.7	28.8	322.8		
	Total		97.2		597.8	<u>597.8</u>	99.0	<u>665.3</u>		103.9	<u>766.4</u>		109.0	<u>873.7</u>		
Zone 14	Clarendon															
	5,000	48.8	12.6	3.3	41.6	44.4	10.2	33.7	40.5	9.5	31.4	37.4	9.0	29.7		
	5,000-9,999	28.2	7.3	4.6	33.6	25.9	6.0	27.6	23.4	5.5	25.3	21.1	5.1	23.5		
	10,000-14,999	12.4	3.2	6.5	20.8	11.3	2.6	16.9	8.4	2.0	13.0	5.8	1.4	9.1		
	15,000-24,999	7.9	2.0	10.2	20.4	12.4	2.9	29.6	16.4	3.9	39.8	17.0	4.1	41.8		
	25,000 +	2.7	.7	12.9	9.0	6.0	1.4	18.1	11.3	2.7	34.8	18.7	4.5	58.1		
	Total		25.9		125.4	<u>125.4</u>	21.0	<u>125.9</u>		23.5	<u>144.3</u>		24.0	<u>162.2</u>		
Zone 15	Orangeburg															
	5,000	30.7	29.1	3.3	94.0	34.3	24.7	81.5	30.4	22.5	74.3	27.3	20.7	68.3		
	5,000-9,999	28.7	21.6	4.6	99.4	26.4	19.0	87.4	23.9	17.7	81.4	21.6	16.4	75.4		
	10,000-14,999	16.2	12.2	6.5	79.3	15.1	10.9	70.9	12.2	9.0	58.5	9.6	7.3	47.5		
	15,000-24,999	11.6	8.7	10.2	88.7	16.1	11.6	118.3	20.1	14.9	152.0	20.7	18.7	160.1		
	25,000 +	4.8	3.6	12.9	46.4	8.1	5.8	74.8	13.4	9.9	127.7	20.8	18.8	203.8		
	Total		75.3		409.8	<u>409.8</u>	72.0	<u>432.9</u>		74.0	<u>493.9</u>		76.0	<u>507.6</u>		

# Appendices

## Part Eight

### Exhibit III-A (con't.)

#### DAY USE BEACH USER OCCASIONS 1975, 1980, 1985, 1990

Zone 16	Bamberg														
		5,000	39.6	6.5	3.3	21.5	35.2	5.6	18.5	31.3	5.2	17.2	28.2	4.8	15.8
		5,000-9,999	31.2	5.1	4.6	23.5	28.9	4.6	21.2	26.4	4.4	20.2	24.1	4.1	12.9
		10,000-14,999	16.0	2.6	6.5	16.9	14.9	2.4	15.6	12.0	2.0	13.0	9.4	1.6	10.4
		15,000-24,999	9.9	1.6	10.2	16.3	14.4	2.3	23.5	18.4	3.0	30.6	19.0	3.2	12.6
		25,000 +	3.3	.5	12.9	6.5	6.6	1.1	14.2	11.9	2.0	25.8	19.3	3.3	42.6
Total			16.5		84.7	<u>84.7</u>	16.0	<u>98.0</u>		16.5	<u>106.8</u>		17.0	<u>122.3</u>	
Zone 17	Allendale														
		5,000	44.0	4.4	3.3	14.5	39.6	4.0	13.2	35.7	3.6	11.9	32.6	3.4	11.2
		5,000-9,999	26.8	2.7	4.6	12.4	24.5	2.5	11.5	27.0	2.8	12.9	19.7	2.1	9.7
		10,000-14,999	16.2	1.6	6.5	10.4	15.1	1.5	9.8	12.2	1.2	7.8	9.6	1.0	6.5
		15,000-24,999	10.3	1.0	10.2	10.2	14.8	1.5	15.3	18.0	1.7	19.4	19.4	2.0	27.4
		25,000 +	2.7	.3	12.9	3.9	6.0	.6	7.7	11.3	1.2	15.5	18.7	2.0	25.8
Total			10.1		51.4	<u>51.4</u>	10.0	<u>57.5</u>		10.2	<u>67.5</u>		10.5	<u>73.6</u>	
						<u>5,636.0</u>		<u>5,903.0</u>			<u>7,166.6</u>			<u>8,077.9</u>	

Source: Hartzog, Lader & Richards, September, 1975.

# Part Eight

# Appendices

## Exhibit III-C

RESIDENT VACATION USE DISTANCE  
(Driving distance miles - nearest 5 miles)

Destination Beaches	Origin Zones Regional Planning Districts									
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
Myrtle Beach	230	215	170	140	165	110	70	15	95	165
Myrtle Beach St. Pk.	235	220	175	135	160	115	75	20	90	160
Huntington Beach St. Pk.	235	225	180	140	150	110	85	35	75	145
Litchfield Beach	230	210	175	135	145	105	90	35	70	140
Pawley's Island	230	205	170	135	140	100	95	40	70	140
Charleston Area Beaches	230	195	200	130	120	130	130	125	20	65
Edisto Island	240	205	210	140	130	135	145	155	50	70
Hunting Island St. Pk.	240	195	215	145	120	155	170	195	90	20
Pripp Island	240	200	220	145	120	155	175	200	90	20
Hilton Head Island	260	220	240	170	140	180	195	210	100	30

Source: HLR, September, 1975.

COASTAL ZONE  
INFORMATION CENTER

FEB 1 1978



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(# Overnight Accommodations/Distance)

Destination Beaches	Est. # Overnight Accommodation Units	Origin Zones Regional Planning Districts									
		1	2	3	4	5	6	7	8	9	10
Grand Strand											
Atlantic Beach	38,000										
N. Myrtle Beach											
Myrtle Beach											
Surfside Beach											
Garden City Beach											
Huntington Beach St. Pk. Litchfield/Pawley's		165.2	176.7	223.5	271.4	230.3	345.4	542.9	2,533.3	400.0	230.3
Isle of Palms	180	.8	.9	.9	1.4	1.5	1.4	1.4	1.4	9.0	2.8
Sullivan's Island	170	.7	.9	.9	1.3	1.4	1.3	1.3	1.4	8.5	2.6
Folly Beach	900	3.9	4.6	4.5	6.9	7.5	6.9	6.9	7.2	48.0	13.8
Kiawah Island	150	.7	.8	.8	1.2	1.3	1.2	1.2	1.2	7.5	2.3
Edisto Island	680	2.8	3.3	3.2	4.9	5.2	5.0	4.7	4.4	13.6	9.7
Hunting Island State Park	200	.8	1.0	.9	1.4	1.7	1.3	1.2	1.0	2.2	10.0
Fripp Island	250	1.0	1.3	1.1	1.7	2.1	1.6	1.4	1.3	2.8	12.5
Hilton Head Island	2,300	8.8	10.4	9.6	13.5	16.4	12.8	11.8	11.0	23.0	76.7
Total		184.7	199.9	245.4	303.7	267.4	376.9	572.8	2,562.2	511.6	360.7

Source: HLR, September, 1975.

## Exhibit III-E

RESIDENT VACATION USE DESTINATION RATIOS  
(Proportion of Vacation Beach User Occasions from Each Origin to Each Destination)

Destination Beaches	Origin Zones Regional Planning Districts									
	1	2	3	4	5	6	7	8	9	10
Grand Strand	89.4	88.2	91.1	89.3	86.1	91.6	94.8	98.6	78.1	63.8
Isle of Palms	.4	.5	.4	.5	.6	.4	.2	.1	1.8	.8
Sullivan's Island	.4	.5	.4	.4	.5	.3	.2	.1	1.7	.7
Folly Beach	2.1	2.3	1.8	2.3	2.8	1.8	1.2	.3	8.8	3.8
Kiawah Island	.4	.4	.3	.4	.5	.3	.2	.1	1.5	.6
Edisto Island	1.5	1.7	1.3	1.6	1.9	1.3	.8	.2	2.7	2.7
Hunting Island St. Pk.	.4	.5	.4	.5	.6	.3	.2	.1	.4	2.8
Fripp Island	.5	.7	.4	.6	.8	.4	.2	.1	.5	3.5
Milton Head Island	<u>4.9</u>	<u>5.2</u>	<u>3.9</u>	<u>4.4</u>	<u>6.2</u>	<u>3.6</u>	<u>2.2</u>	<u>.4</u>	<u>4.5</u>	<u>21.3</u>
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: HLR, September, 1975.

# Appendices

## Part Eight

### Exhibit III-F

#### RESIDENT VACATION BEACH USE 1975, 1980, 1985, 1990

	1974 Income Distribution (%)	1975 Population by Income Class (000)	Avg. Annual Per Capita Vacation/Weekend Beach User Occasions	Vacation Beach User Occasions (000)	Total	1980 Income Distribution (%)	1980 Population by Income Class (000)	Beach User Occasions (000)	1985 Income Distribution (%)	1985 Population by Income Class (000)	Beach User Occasions (000)	1990 Income Distribution (%)	1990 Population by Income Class (000)	Beach User Occasions (000)
<u>Planning District</u>														
<u>Appalachia</u>														
Household Income under \$5,000	25.7	188.5	.5	92.3		20.8	166.0	83.0	16.9	145.0	72.5	13.8	127.2	41.6
5,000-9,999	31.4	229.9	.8	183.9		29.1	232.2	185.8	26.6	224.1	187.5	24.3	224.0	174.2
10,000-14,999	22.9	167.9	.9	150.9		21.8	174.0	156.6	18.9	162.1	145.9	16.3	150.3	135.3
15,000-24,999	14.6	106.9	1.0	106.9		19.1	152.4	152.4	23.1	198.1	188.1	23.7	218.5	218.5
25,000 +	5.9	43.2	1.1	47.5		9.3	72.4	40.7	14.5	124.4	116.8	21.9	201.9	222.1
Total		732.3		581.5	381.5		798.0	658.5		857.7	735.8		922.0	818.7
<u>Upper Savannah</u>														
under \$5,000	27.6	45.3	.5	22.7		23.2	40.6	20.3	19.3	36.0	18.0	16.2	32.2	16.1
5,000-9,999	31.7	52.1	.8	41.7		29.6	51.5	41.2	26.9	50.1	40.1	24.6	48.8	39.0
10,000-14,999	22.4	36.8	.9	33.1		22.3	37.2	33.6	18.4	34.3	30.9	15.8	31.4	24.3
15,000-24,999	14.0	23.0	1.0	21.0		18.5	32.4	32.4	22.5	41.9	41.9	23.1	45.9	45.9
25,000 +	6.3	7.1	1.1	7.8		7.6	13.3	14.6	12.9	24.0	26.4	20.3	40.3	44.3
Total		164.3		128.3	128.3		175.0	142.1		186.4	157.2		198.5	175.6
<u>Central Piedmont</u>														
under \$5,000	34.6	69.5	.5	34.8		30.2	64.2	32.1	28.3	58.5	29.3	25.2	54.1	27.1
5,000-9,999	24.4	49.0	.8	39.2		22.1	47.0	37.6	19.6	43.6	34.9	17.3	40.4	32.3
10,000-14,999	19.9	40.0	.9	36.0		18.8	40.0	36.0	15.9	35.4	31.9	13.3	31.0	27.9
15,000-24,999	14.0	28.1	1.0	28.1		18.5	39.3	39.3	22.5	50.1	50.1	23.1	53.9	53.9
25,000 +	7.3	14.3	1.1	15.7		10.4	22.1	24.3	15.7	34.9	38.4	27.1	53.9	53.9
Total		200.9		153.8	153.8		212.5	169.3		222.4	184.6		283.3	210.5
<u>Midlands</u>														
under \$5,000	21.5	89.5	.5	44.8		17.1	75.9	38.0	13.2	63.0	31.5	10.1	51.2	25.6
5,000-9,999	24.4	61.5	.8	51.2		22.1	98.1	76.5	19.6	91.6	74.9	17.3	87.8	70.2
10,000-14,999	21.1	47.8	.9	47.0		18.8	40.0	36.0	15.9	35.4	31.9	13.3	31.0	27.9
15,000-24,999	20.6	45.7	1.0	45.7		25.1	111.4	111.4	29.1	139.0	139.0	29.7	150.7	150.7
25,000 +	12.3	51.2	1.1	56.3		15.6	69.3	76.2	20.9	99.8	109.8	28.3	143.6	154.0
Total		416.1		347.0	347.0		444.0	384.0		477.6	428.7		507.4	475.7
<u>Lower Savannah</u>														
under \$5,000	31.7	71.9	.5	35.9		27.3	62.7	31.4	23.4	56.0	28.0	20.3	50.8	25.4
5,000-9,999	27.0	61.2	.8	48.9		24.7	56.7	45.4	12.2	31.2	42.6	19.9	49.8	39.8
10,000-14,999	19.1	43.2	.9	38.9		18.0	41.3	37.2	15.1	36.2	32.6	12.5	31.3	28.2
15,000-24,999	16.1	17.0	1.0	16.2		20.5	47.0	47.0	24.5	58.7	58.7	25.1	62.0	62.0
25,000 +	7.5	17.0	1.1	18.7		10.8	24.8	27.3	15.8	37.8	41.6	23.2	58.0	61.8
Total		226.4		178.6	178.6		229.5	188.3		239.5	207.5		250.6	220.0

# Part Eight

# Appendices

## Exhibit III-F (con't.)

### RESIDENT VACATION BEACH USE 1975, 1980, 1985, 1990

#### Santee Waterco

under 5,000	34.9	55.4	.5	28.2	30.5	49.1	24.6	24.6	43.9	72.0	23.5	39.7	19.9
5,000-9,999	29.5	47.1	.8	37.7	27.7	43.8	39.0	24.7	40.8	32.6	22.4	37.9	30.3
10,000-14,999	17.5	28.3	.9	25.5	16.4	26.4	23.8	15.5	22.7	20.1	10.9	18.4	14.6
15,000-24,999	12.7	20.5	1.0	20.5	17.2	27.7	27.7	21.2	35.0	35.0	21.0	34.8	34.8
25,000 +	5.5	8.9	1.1	9.8	6.8	14.3	15.6	14.1	23.3	25.4	21.5	36.3	39.9
Total		161.6		121.7	121.7	161.6	176.7	165.0	175.3	169.0	141.5		

#### Pee Dee

under 5,000	32.3	50.1	.3	45.1	27.9	79.2	39.6	24.0	71.4	35.7	20.9	65.2	32.4
5,000-9,999	29.2	41.5	.8	65.2	26.9	76.4	41.1	24.4	72.6	50.1	22.1	69.0	55.2
10,000-14,999	18.7	52.2	.9	47.0	26.6	50.0	45.0	14.7	43.8	39.4	12.1	37.0	34.0
15,000-24,999	13.8	38.5	1.0	38.5	18.3	32.0	52.8	22.3	66.4	66.4	22.9	71.4	71.4
25,000 +	2.0	5.6	1.1	6.2	5.3	13.1	16.8	10.6	31.6	34.8	18.0	56.2	61.8
Total		179.1		202.8	202.8	264.0	214.3	297.7	234.4	312.0	255.0		

#### Waccanaw

under 5,000	34.9	51.4	.5	26.7	30.5	44.8	22.4	24.6	41.4	70.7	23.5	38.8	19.4
5,000-9,999	30.7	47.0	.8	37.6	28.4	41.7	33.4	25.9	40.3	32.2	23.6	38.9	31.1
10,000-14,999	16.9	25.9	.9	23.3	15.8	23.2	20.9	12.9	20.1	18.1	10.3	17.0	15.3
15,000-24,999	11.8	18.1	1.0	18.1	16.3	24.0	24.0	20.3	31.6	31.6	20.9	34.5	34.5
25,000 +	5.8	8.9	1.1	9.8	9.1	13.4	14.7	10.6	22.4	24.4	21.8	36.0	39.4
Total		153.0		115.5	115.5	147.0	115.4	155.7	127.2	165.0	139.9		

#### Charleston

under 5,000	23.0	43.8	.3	41.9	38.4	89.9	45.0	14.7	58.8	29.4	11.6	49.4	24.7
5,000-9,999	22.1	40.5	.8	64.4	19.0	74.4	59.5	17.3	70.4	56.3	15.0	63.9	51.1
10,000-14,999	20.4	24.3	.9	46.9	19.3	32.6	65.3	16.4	65.4	59.0	13.8	58.8	52.9
15,000-24,999	20.5	24.7	1.0	74.7	25.0	94.0	94.0	29.0	116.0	116.0	29.6	176.1	126.1
25,000 +	14.0	51.0	1.0	56.1	17.3	65.0	72.6	22.4	90.4	99.4	20.0	127.8	140.6
Total		364.2		304.8	304.8	376.0	376.4	400.1	360.1	426.0	365.4		

#### Lower Coast

under 5,000	32.4	36.8	.5	18.4	29.8	31.2	15.6	25.1	27.5	13.8	22.0	24.5	12.3
5,000-9,999	30.2	33.3	.8	26.6	27.9	30.0	24.0	25.4	27.8	22.2	23.1	35.8	27.4
10,000-14,999	17.4	17.2	.9	17.3	16.3	17.3	15.8	13.4	14.7	13.2	10.8	12.0	10.8
15,000-24,999	13.1	14.4	1.0	14.4	17.4	18.9	18.9	21.4	23.7	23.7	22.2	24.8	24.8
25,000 +	5.8	6.4	1.1	7.0	9.1	9.8	10.8	14.4	15.8	17.4	21.8	24.3	26.7
Total		110.3		83.7	83.7	107.3	85.1	109.5	90.3	111.5	95.2		

1) N.E. Regional Planning Commission  
2) % S.C. resident vacations w-state x % at beach x # beach days PRT, MHI  
3) 1/2 x 2)

\* Source: HLR, September, 1975.

# Appendices

## Part Eight

Exhibit III-H

Income Shift, Families and Unrelated Individuals  
Age 35-44, Income \$15,000 and Above  
(000's)  
(In 1971 Constant Dollars)

	1971	1975	1980	1985	1990
15,000 to 17,499	1,187	1,293	1,516	1,882	1,665
17,500 to 19,999	786	984	1,247	1,623	1,968
20,000 to 24,999	812	1,142	1,806	2,573	3,218
25,000 to 34,999	497	791	1,338	2,462	3,903
35,000 to 49,999	165	215	452	987	1,847
50,000 and over	66	97	176	355	724

Percent Distribution in Relation To  
Total Population of Age Group

	1971	1975	1980	1985	1990
15,000 to 17,499	10.0	10.9	11.4	11.4	8.5
17,500 to 19,999	6.6	8.3	9.4	9.9	10.1
20,000 to 24,999	6.8	9.6	13.6	15.6	16.4
25,000 to 34,999	4.2	6.7	10.0	14.9	19.9
35,000 to 49,999	1.4	1.8	3.4	6.0	9.4
50,000 and over	.6	.6	1.3	2.2	3.7
	29.6	38.1	49.1	60.0	68.0

Source: U.S. Bureau of Census, Current Population Reports,  
Series P-23, No. 47, U.S. Government Printing Office  
Income Growth Rate 34, Population Projection  
Series E.

Exhibit III-I

Income Shift, Families and Unrelated Individuals  
Age 55-64, Income \$15,000 and Above  
(000's)  
(In 1971 Constant Dollars)

	1971	1975	1980	1985	1990
15,000 to 17,499	776	863	1,092	1,168	834
17,500 to 19,999	534	671	790	963	973
20,000 to 24,999	615	829	1,129	1,345	1,471
25,000 to 34,999	427	638	1,011	1,358	1,675
35,000 to 49,999	143	223	383	642	905
50,000 and over	104	136	210	322	474

Percent Distribution in Relation To  
Total Population of Age Group

	1971	1975	1980	1985	1990
15,000 to 17,499	6.8	7.3	8.7	9.2	6.9
17,500 to 19,999	4.7	5.7	6.3	7.6	8.0
20,000 to 24,999	5.4	7.0	9.0	10.6	12.1
25,000 to 34,999	3.8	5.4	8.0	10.7	13.8
35,000 to 49,999	1.3	1.9	3.1	5.0	7.5
50,000 and over	.9	1.2	1.7	2.5	3.9
	22.9	28.5	36.8	45.6	52.2

Source: U.S. Bureau of Census, Current Population Reports,  
Series P-23, No. 47, U.S. Government Printing Office  
Income Growth Rate 34, Population Projection  
Series E.

## Part Eight

Exhibit III-J

Income Shift, Families and Unrelated Individuals  
Age 55-64, Income \$15,000 and Above  
(000's)  
(In 1971 Constant Dollars)

	1971	1975	1980	1985	1990
15,000 to 17,499	776	863	1,092	1,168	834
17,500 to 19,999	534	671	790	963	973
20,000 to 24,999	615	829	1,129	1,345	1,471
25,000 to 34,999	427	638	1,011	1,358	1,675
35,000 to 49,999	143	223	383	642	905
50,000 and over	104	136	210	322	474

Percent Distribution in Relation To  
Total Population of Age Group

	1971	1975	1980	1985	1990
15,000 to 17,499	6.8	7.3	8.7	9.2	6.9
17,500 to 19,999	4.7	5.7	6.3	7.6	8.0
20,000 to 24,999	5.4	7.0	9.0	10.6	12.1
25,000 to 34,999	3.8	5.4	8.0	10.7	13.8
35,000 to 49,999	1.3	1.9	3.1	5.0	7.5
50,000 and over	.9	1.2	1.7	2.5	3.9
	22.9	28.5	36.8	45.6	52.2

Source: U.S. Bureau of Census, Current Population Reports,  
Series P-23, No. 47, U.S. Government Printing Office  
Income Growth Rate 34, Population Projection  
Series E.

## Appendices

Exhibit III-K

Income Shift, Families and Unrelated Individuals  
Age 65 +, Income \$15,000 and Above  
(000's)  
(In 1971 Constant Dollars)

	1971	1975	1980	1985	1990
15,000 to 17,499	263	339	424	595	660
17,500 to 19,999	177	236	319	395	567
20,000 to 24,999	162	251	393	533	696
25,000 to 34,999	113	160	273	463	701
35,000 to 49,999	65	71	113	185	292
50,000 and over	37	57	95	131	198

Percent Distribution in Relation To  
Total Population of Age Group

	1971	1975	1980	1985	1990
15,000 to 17,499	1.9	2.4	2.7	3.4	3.5
17,500 to 19,999	1.3	1.7	2.0	2.3	3.0
20,000 to 24,999	1.2	1.8	2.5	3.1	3.7
25,000 to 34,999	.8	1.2	1.7	2.7	3.7
35,000 to 49,999	.5	.5	.7	1.1	1.6
50,000 and over	.3	.4	.6	.8	1.1
	6.0	8.0	10.2	13.4	16.6

Source: U.S. Bureau of Census, Current Population Reports,  
Series P-23, No. 47, U.S. Government Printing Office  
Income Growth Rate 34, Population Projection  
Series E.

# Appendices

## Part Eight

### Exhibit III-G

Income Shift, Families and Unrelated Individuals  
Age 25-34, Income \$15,000 and Above  
(000's)  
(In 1971 Constant Dollars)

	1971	1975	1980	1985	1990
15,000 to 17,499	997	1,558	2,232	2,887	2,492
17,500 to 19,999	551	916	1,624	2,174	2,646
20,000 to 24,999	393	836	1,776	2,902	3,624
25,000 to 34,999	177	371	845	1,836	3,238
35,000 to 49,999	45	76	191	412	835
50,000 and over	26	38	69	128	233

Percent Distribution In Relation To  
Total Population of Age Group

	1971	1975	1980	1985	1990
15,000 to 17,499	7.4	10.1	11.9	13.8	11.5
17,500 to 19,999	4.1	5.9	8.7	10.4	12.2
20,000 to 24,999	2.9	5.4	9.5	13.8	16.7
25,000 to 34,999	1.3	2.4	4.5	8.8	15.0
35,000 to 49,999	.3	.5	1.0	2.0	3.9
50,000 and over	.2	.3	.4	.6	1.1
	16.2	24.6	36.6	49.4	60.4

Source: U.S. Bureau of Census, Current Population Reports,  
Series P-21, No. 47, U.S. Government Printing Office  
Income Growth Rate 3%, Population Projection  
Series E.

# Part Eight

# Appendices

## EXHIBIT III-L

### SOUTH CAROLINA RESIDENT DAY USE DRIVING DISTANCES

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
<u>Destination Beaches</u>	<u>Horry</u>	<u>Williamsburg</u>	<u>Georgetown</u>	<u>Berkeley</u>	<u>Charleston</u>	<u>Dorchester</u>	<u>Colleton</u>	<u>Beaufort</u>	<u>Hampton</u>	<u>Jasper</u>	<u>Dillon</u>	<u>Marion</u>	<u>Florence</u>	<u>Clarendon</u>	<u>Orangeburg</u>	<u>Darburg</u>	<u>Allendale</u>
S. Myrtle Beach	30	-	55	-	-	-	-	-	-	-	65	65	85	-	-	-	-
Atlantic Beach	30	-	50	-	-	-	-	-	-	-	70	60	80	-	-	-	-
Myrtle Beach	15	75	35	85	95	-	-	-	-	-	75	45	65	-	-	-	-
Myrtle Beach St. Pk.	20	75	30	80	90	-	-	-	-	-	80	50	70	-	-	-	-
Garden City - Surfside beach	20	70	30	75	85	-	-	-	-	-	80	55	75	-	-	-	-
Huntington St. Pk.	25	65	25	75	85	-	-	-	-	-	85	60	80	-	-	-	-
Isle of Palms	-	-	65	45	15	65	60	85	-	-	-	-	-	90	90	95	-
Sullivan's Island	-	-	60	40	10	60	60	80	-	-	-	-	-	85	85	90	-
Polly Island	-	-	70	45	10	60	60	80	-	-	-	-	-	85	85	90	-
Wright Island	-	80	80	50	20	70	55	75	95	80	-	-	-	-	95	95	-
Edisto Island	-	-	-	80	50	70	50	70	75	60	-	-	-	-	95	90	90
Hunting Island St. Pk.	-	-	-	-	100	80	60	20	65	55	-	-	-	-	105	100	80
Bilton Head Island	-	-	-	-	-	100	90	35	60	40	-	-	-	-	110	95	55

- indicates that distance is considered too long for day use beach use.



# Appendices

## Part Eight

### APPENDIX IV

#### BEACH USE SURVEY

##### BEACH USE QUESTIONNAIRE

###### INSTRUCTIONS

Dress casually; wear your name tag.

Be polite; talk with every third or fourth group on the beach. Do not talk only with teenagers; ask different groups, especially families, and talk with only one person within each group. Cover your beach territory systematically. Try not to retrace your steps over a beach area where you have already conducted interviews.

Place the date, location, and time on each questionnaire.

Your work schedule can be arranged on an individual basis; however, the following time periods must be covered:

- |   |                 |
|---|-----------------|
| 1 weekend day -<br>on August 16, 17, 23, or 24                | - 6 hours       |
| 1 week day -<br>on August 18, 19, 20, 21, or 22               | - 6 hours       |
| 1 Labor Day Weekend day -<br>on August 30, 31, or September 1 | - 6 hours       |
| <b>Total</b>  | <b>18 hours</b> |

We are assuming that 10 questionnaires can be completed per hour; therefore, we will expect a minimum of 180 completed questionnaires for the survey period.

Work between the hours of 10:00 a.m. and 4:00 p.m. You may wish to conduct daily interviews in 3-hour time segments. For example, 3 hours on Saturday, August 16, and 3 hours on Sunday, August 17. This will be acceptable as long as the total hours (6) have been covered for the "weekend day" period, or 60 questionnaires completed.

Upon completion of each work segment, fill out the Report Sheet and return the completed questionnaires in the self-addressed envelope. You will not be paid until we have received the appropriate number of completed questionnaires for each work segment.

##### APPENDIX IV-A

Date: \_\_\_\_\_ Time: \_\_\_\_\_  
Location: \_\_\_\_\_

(1-15)

##### BEACH USE QUESTIONNAIRE

Hello, I'm conducting a survey of beach users. Would you mind answering a few questions?

- answer only if necessary -

This questionnaire is part of a state study sponsored by the South Carolina Department of Parks, Recreation and Tourism to determine the extent of public access to South Carolina's beaches. I've been hired by Hartzog, Lader, and Richards, the consulting firm which has been commissioned to do this study.

- start questionnaire -

1. Are you here in the immediate area... (16)  
 Overnight..... ☐ 1 Are you staying at: (17)  
     a campground..... ☐ 1  
     hotel/motel..... ☐ 2  
     cottage/vacation home.... ☐ 3  
     friends/relatives' home.. ☐ 4  
     other (specify)..... ☐ 5  
 On vacation..... ☐ 2 How long? (18)  
     1-2 nights..... ☐ 1  
     less than a week..... ☐ 2  
     one week..... ☐ 3  
     more than a week..... ☐ 4  
     Are you staying at: (19)  
       a campground..... ☐ 1  
       hotel/motel..... ☐ 2  
       cottage/vacation home.... ☐ 3  
       friends/relatives' home.. ☐ 4  
       other (specify)..... ☐ 5  
     Just for the day ☐ 3
2. How many miles is this beach from your permanent residence? (20)  
     1-5 miles ☐ 1    6-15 miles ☐ 2    16-30 miles ☐ 3  
     31-60 miles ☐ 4    61-90 miles ☐ 5    over 90 miles ☐ 6
3. How many times this year have you visited this beach for:
 

Weekend.....none <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 or more <input type="checkbox"/>	(21)
Vacation.....none <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 or more <input type="checkbox"/>	(22)
The day.....none <input type="checkbox"/>	1-5 <input type="checkbox"/>	6-10 <input type="checkbox"/>	11-20 <input type="checkbox"/>	20+ <input type="checkbox"/>	(23)
	1	2	3	4	5

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### APPENDIX IV-A (con't.)

4. How many times have you visited other South Carolina beaches this year for:
- |                   |                          |     |                          |      |                          |       |                          |           |                          |      |
|-------------------|--------------------------|-----|--------------------------|------|--------------------------|-------|--------------------------|-----------|--------------------------|------|
| Weekend.....none  | <input type="checkbox"/> | 1   | <input type="checkbox"/> | 2    | <input type="checkbox"/> | 3     | <input type="checkbox"/> | 4 or more | <input type="checkbox"/> | (24) |
| Vacation.....none | <input type="checkbox"/> | 1   | <input type="checkbox"/> | 2    | <input type="checkbox"/> | 3     | <input type="checkbox"/> | 4 or more | <input type="checkbox"/> | (25) |
| The day.....none  | <input type="checkbox"/> | 1-5 | <input type="checkbox"/> | 6-10 | <input type="checkbox"/> | 11-20 | <input type="checkbox"/> | 20+       | <input type="checkbox"/> | (26) |
- 5a. Including yourself, please tell me the composition of your group. How many:
- |                     |       |      |
|---------------------|-------|------|
| Men (over 18)       | _____ | (27) |
| Women (over 18)     | _____ | (28) |
| Teenagers (15-18)   | _____ | (29) |
| Children (under 13) | _____ | (30) |
| Total               | _____ | (31) |
- b. Are these persons:
- Friends ☐1 Family ☐2 Both ☐3 (32)
6. Did you drive to the beach? yes ☐1 no ☐2 (33)
- If no, skip to question 8.
- If yes, did you have to park: (34)
- |                         |                            |
|-------------------------|----------------------------|
| 1-2 blocks away.....    | <input type="checkbox"/> 1 |
| 2-5 blocks away.....    | <input type="checkbox"/> 2 |
| 5 or more blocks away.. | <input type="checkbox"/> 3 |
7. Did you park: (35)
- |                                   |                            |
|-----------------------------------|----------------------------|
| in a free public parking lot..... | <input type="checkbox"/> 1 |
| on the street.....                | <input type="checkbox"/> 2 |
| in a pay parking lot.....         | <input type="checkbox"/> 3 |
| other (specify) _____             | <input type="checkbox"/> 4 |
8. (By observation) male ☐1 female ☐2 (36)
9. Is your age: (37)
- |               |                            |
|---------------|----------------------------|
| under 18..... | <input type="checkbox"/> 1 |
| 18-24.....    | <input type="checkbox"/> 2 |
| 25-34.....    | <input type="checkbox"/> 3 |
| 35-44.....    | <input type="checkbox"/> 4 |
| 45-54.....    | <input type="checkbox"/> 5 |
| 55-64.....    | <input type="checkbox"/> 6 |
| over 65.....  | <input type="checkbox"/> 7 |

- b. What is the age of the head of household: (38)
- |               |                            |
|---------------|----------------------------|
| under 25..... | <input type="checkbox"/> 1 |
| 25-34.....    | <input type="checkbox"/> 2 |
| 35-44.....    | <input type="checkbox"/> 3 |
| 45-54.....    | <input type="checkbox"/> 4 |
| 55-64.....    | <input type="checkbox"/> 5 |
| over 65.....  | <input type="checkbox"/> 6 |
- c. In which of these broad income groups is your total household income: (39)
- |                                       |                            |
|---------------------------------------|----------------------------|
| under \$5,000.....                    | <input type="checkbox"/> 1 |
| over \$5,000 but under \$10,000.....  | <input type="checkbox"/> 2 |
| over \$10,000 but under \$15,000..... | <input type="checkbox"/> 3 |
| over \$15,000 but under \$25,000..... | <input type="checkbox"/> 4 |
| over \$25,000 but under \$50,000..... | <input type="checkbox"/> 5 |
| over \$50,000.....                    | <input type="checkbox"/> 6 |
- d. What is the occupation of the head of household? (write in) (40)
- (If retired, mark here ☐1 and answer for last occupation.)
- |                            |                            |                            |                            |      |
|----------------------------|----------------------------|----------------------------|----------------------------|------|
| Professional/Technical.... | <input type="checkbox"/> 1 | Clerical.....              | <input type="checkbox"/> 6 | (41) |
| Management.....            | <input type="checkbox"/> 2 | Member of Armed Forces.... | <input type="checkbox"/> 7 |      |
| Government.....            | <input type="checkbox"/> 3 | Laborer.....               | <input type="checkbox"/> 8 |      |
| Skilled Craftsman.....     | <input type="checkbox"/> 4 | Other (specify) _____      | <input type="checkbox"/> 9 |      |
| Service Worker.....        | <input type="checkbox"/> 5 |                            |                            |      |
10. What is the zip code of your primary residence? \_\_\_\_\_ (42,43,44)

# Appendices

## Part Eight

### APPENDIX IV-B

#### SOUTH CAROLINA BEACH USE SURVEY

##### SUMMARY OF TOTAL RESPONDENTS

- Fifty-four percent of those surveyed were at the beach as part of their vacation, 45.5% were at the beach just for the day.
- Over half of the vacationers (56.1%) stayed less than a week.
- Campgrounds, hotels, and motels provided most (60.6%) of the accommodations required. Relatively few (23.0%) respondents stayed in a cottage or vacation home, or in a friend's or relative's home. This phenomenon is explained by the fact that the survey was conducted at "public" access points, not areas within private developments.
- Over twenty-eight percent (28.7%) of the respondents drove thirty miles or less to reach the beach, while almost sixty percent (58.0%) traveled over 90 miles to their beach destination.
- The survey respondents (1,293) represented a total of more than 4,992 beach users.
- Almost sixty percent (58.0%) of beach users were family groups.
- An overwhelming 81.4% of the beach users (both vacationers and day-users) drove to the beach; 89.4% parked within two blocks of the beach. Most parked on the street, or in a free public parking lot.
- Of those that go to the beach, 53.6% earn less than \$15,000 in total annual household income; 78.8% of beach users earn \$25,000 or less per annum.

##### SUMMARY OF DAY-USERS

- The highest number of day-users responding to the survey were at Folly Beach, followed by Edisto Beach State Park, Atlantic Beach, and then Myrtle Beach State Park.
- Fifty-eight percent (58.3%) of day-users traveled thirty miles or less to get to the beach, while 22.3% traveled over 90 miles to use the beach just for the day.
- Forty-nine percent (49.4%) of day-users visited the same beach 5 or more times this year, of which 25.7% visited the same beach 20 or more times.
- Twenty-four percent (24.9%) of these same day-use respondents also visited other South Carolina beaches one to five times this year.
- Almost half (46.4%) of all day-users were family groups.
- Ninety-three percent (93.0%) drove to the beach and most (93.8%) parked 1-2 blocks away; most (89.5%) parked either on the street or in a free public parking lot.

## Part Eight

### APPENDIX IV-C

#### SOUTH CAROLINA BEACH USE SURVEY

#### QUESTIONNAIRE RESPONSES<sup>1</sup> BY TOTAL RESPONDENTS

- (16)<sup>2</sup> Of the 1,293 respondents to the survey, the following beach visitation types were indicated:

	#	%
Overnight	127	9.8
On vacation	577	44.6
Just for the day	589	45.5
	<u>1,293</u>	<u>100.0</u>

- (17) Of those staying overnight (127), the following accommodations were used:

	#	%
a campground	33	26.0
hotel/motel	42	33.1
cottage/vacation home	16	12.6
friends/relatives' home	30	23.6
other	6	4.7
	<u>127</u>	<u>100.0</u>

- (18) Those respondents on vacation (577) stayed the following length of time:

	#	%
1-2 nights	95	16.5
less than a week	228	39.6
one week	156	27.0
more than a week	89	15.4
no answer	9	1.5
	<u>577</u>	<u>100.0</u>

<sup>1</sup>computer run dated 09/15/75

<sup>2</sup>numbers in parentheses refer to code numbers in the right hand margin of the questionnaire

## Appendices

- (32) The groups were composed of:

	#	%
friends	275	21.3
family	750	58.0
both	254	19.7
no answer	14	1.0
	<u>1,293</u>	<u>100.0</u>

Note: of the 750 family groups, 114 were individuals.

- (33) 1,053 respondents, or 81.4%, drove to the beach; 236 respondents, or 18.3%, did not.

- (34) Those respondents who drove to the beach (1,053) parked as follows:

	#	%
1-2 blocks away	945	89.4
2-5 blocks away	83	7.8
5 or more blocks away	22	2.1
no answer	3	.7
	<u>1,053</u>	<u>100.0</u>

- (35) Those respondents that drove to the beach (1,053) parked

	#	%
Free public parking lot	612	57.9
On the street	286	27.2
Pay parking lot	38	3.5
Other	115	10.9
No answer	3	.5
	<u>1,053</u>	<u>100.0</u>

- (36) Of the respondents to the questionnaire, 51.7% were female (668) while 48.3% were male (625).

- (37) Age breakdown of the respondents is as follows:

	#	%
under 18	108	8.4
18-24	425	32.9
25-34	340	26.3
35-44	229	17.7
45-54	138	10.7
55-64	30	2.3
over 65	15	1.2
no answer	8	.6
	<u>1,293</u>	<u>100.0</u>

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- (38) The age of the head of household to which the respondent belonged was as follows:

	#	%
under 25	226	17.5
25-34	327	25.3
35-44	317	24.5
45-54	291	22.5
55-64	90	7.0
over 65	27	2.1
no answer	15	1.2
	<u>1,293</u>	<u>100.0</u>

- (39) The broad income groups indicated by the respondents for their total household income was as follows:

	#	%
under \$5,000	79	6.1
\$5,000-\$10,000	264	20.4
\$10,000-\$15,000	351	27.1
\$15,000-\$25,000	326	25.2
\$25,000-\$50,000	124	9.6
over \$50,000	12	.9
no answer	137	10.6
	<u>1,293</u>	<u>100.0</u>

Of those that go to the beach, 53.6% earn less than \$15,000 in total annual household income; 78.8% earn \$25,000 or less; as indicated by this survey.

- (40) Occupations of the head of household as indicated by the respondents were placed into the following groups:

	#	%
Professional/Technical	270	20.9
Management	105	8.1
Government	73	5.6
Skilled Craftsman	96	7.4
Service Worker	81	6.3
Clerical	60	4.6
Member of Armed Forces	103	8.0
Laborer	140	10.8
Business	179	13.8
Retired	49	3.8
Other	137	10.6
	<u>1,293</u>	<u>100.0</u>

## Part Eight

### APPENDIX IV-D

#### SOUTH CAROLINA BEACH USE SURVEY

#### QUESTIONNAIRE RESPONSES<sup>1</sup> BY DAY USE RESPONDENTS

- (11)<sup>2</sup> The 587 day users responding to the survey were at the following beach areas:

	#	%
Atlantic Beach	70	11.9
Myrtle Beach Pavilion	5	.9
Myrtle Beach State Park	62	10.6
Huntington Beach State Park	20	3.4
Isle of Palms	79	13.5
Sullivan's Island	56	9.5
Folly Beach	150	25.6
Edisto Beach State Park	91	15.5
Hilton Head Island	54	9.2
	<u>587</u>	<u>100.0</u>

- (20) Day-use respondents indicated the following travel distances between the beach and their permanent residence:

	#	%
1-5 miles	91	15.5
6-15 miles	150	25.6
16-30 miles	101	17.2
31-60 miles	91	15.5
61-90 miles	19	3.2
over 90 miles	131	22.3
no answer	4	.7
	<u>587</u>	<u>100.0</u>

- (23) Day-use respondents visited the same beach this year the following number of times:

	#	%
none	97	16.4
1-5	200	34.1
6-10	69	11.8
11-20	70	11.9
20 +	151	25.7
	<u>587</u>	<u>100.0</u>

<sup>1</sup>computer run dated 09/15/75

<sup>2</sup>numbers in parentheses refer to code numbers in the right hand margin of the questionnaire

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- (19) Respondents on vacation (577) used the following accommodations:

	#	%
a campground	152	26.4
hotel/motel	197	34.2
cottage/vacation home	59	10.2
friends/relatives' home	75	12.9
other	5	.9
no answer	89	15.4
	<u>577</u>	<u>100.0</u>

- (20) All respondents indicated the following distances between the beach and their permanent residence:

	#	%
1-5 miles	98	7.6
6-15 miles	162	12.5
16-30 miles	110	8.6
31-60 miles	118	9.1
61-90 miles	45	3.5
over 90 miles	750	58.0
no answer	10	.8
	<u>1,293</u>	<u>100.0</u>

- (21) - (26) Not applicable in aggregate number form. See "overnight use", "vacation use" and day use".

- (27) - (30) Survey results for these answers were inconclusive.

- (31) Of the 1,293 respondents, the following group size is shown:

	#	total group size	%
1 person	115 x 1 =	115	2.3
2 persons	341 x 2 =	682	13.6
3 persons	184 x 3 =	552	11.1
4 persons	246 x 4 =	984	19.7
5 persons	129 x 5 =	645	12.9
6 persons	103 x 6 =	618	12.4
7 persons	57 x 7 =	399	8.0
8 persons	25 x 8 =	200	4.0
9 or more	88 x 9 =	792	15.9
no answer	5 x 1 =	5	.1
	<u>1,293</u>	<u>4,992</u>	<u>100.0</u>

Indicates that the respondents represented a total number of 4,992 beach users.

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- (26) Day-use respondents visited other South Carolina beaches this year for the day the following number of times:

	#	%
none	330	56.2
1-5	146	24.9
6-10	47	8.0
11-20	18	3.1
20 +	46	7.8
	<u>587</u>	<u>100.0</u>

- (35) Those day-use respondents that drove to the beach parked

	#	%
free public parking lot	284	52.0
on the street	205	37.5
pay parking lot	20	3.7
other	36	6.6
no answer	<u>1</u>	<u>.2</u>
	<u>546</u>	<u>100.0</u>

- (31) Of the 587 day-use respondents, the following group size is shown:

	#	total group size	%
1 person	58 x 1 =	58	2.3
2 persons	167 x 2 =	334	15.0
3 persons	84 x 3 =	252	11.3
4 persons	110 x 4 =	440	19.7
5 persons	45 x 5 =	225	10.2
6 persons	30 x 6 =	180	8.1
7 persons	27 x 7 =	189	8.5
8 persons	12 x 8 =	96	4.3
9 or more	51 x 9 =	459	20.5
no answer	3 x 1 =	3	.1
	<u>587</u>	<u>2,236</u>	<u>100.0</u>

- (39) The broad income groups indicated by all day-users for their total household income were as follows:

	#	%
under \$5,000	54	9.2
\$5,000-\$10,000	124	21.1
\$10,000-\$15,000	162	27.6
\$15,000-\$25,000	134	22.8
\$25,000-\$50,000	46	7.8
over \$50,000	4	.7
no answer	<u>63</u>	<u>10.7</u>
	<u>587</u>	<u>100.0</u>

- (32) The day-use groups were composed of

	#	%
friends	181	30.9
family	272	46.4
both	129	22.0
no answer	<u>5</u>	<u>.7</u>
	<u>587</u>	<u>100.0</u>

- (33) Of the 587 respondents, 546 or 93.0% drove to the beach for the day; 41 or 7.0% did not.

- (34) The 546 respondents who drove to the beach parked

	#	%
1-2 blocks away	512	93.8
2-5 blocks away	28	5.2
5 or more blocks away	3	.5
no answer	<u>3</u>	<u>.5</u>
	<u>546</u>	<u>100.0</u>

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### APPENDIX IV-E

#### SOUTH CAROLINA BEACH USE SURVEY

#### OCCUPATIONAL CATEGORY DESIGNATIONS

Responses to question 9d on the Beach Use Survey Questionnaire -- "What is the occupation of the head of household?" -- were varied, and often incorrectly categorized by the interviewer in the field. Since the actual occupation of the respondent was written on the questionnaire by the interviewer, the consultant reassigned occupational designations for greater accuracy. An additional category "Business" was added to the nine categories listed on the questionnaire.

Beach users surveyed, or the head of their households, were employed by the following sectors of the economy:

#### 1. Professional/Technical - high educational skills

X-ray technician	Preacher
Engineer	Treasurer
Arch./Drafting	Pilot
Teacher	Advertising
Doctor	Accounting

#### 2. Management - product-oriented business supervision

Foreman	Supervisor
---------	------------

#### 3. Government

State	Commissioner
City	Sheriff
Federal	Policeman
	Public Employee
	Postman

#### 4. Skilled Craftsman

Welder	Computer Programmer
Plumber	Carpenter
Electrician	Brick Mason
Machinist	Mechanic
Telephone Repair	Machine Setter

#### 5. Service Worker - supporting service-oriented business

Waitress/Waiter	Janitor
Social worker	Hair dresser
Maid	Short order cook
House cleaner	Wholesale distributor - oil jobber
Maintenance	

#### 6. Clerical

Clerk	Secretary
Librarian	Teacher's Aid
Key punch operator	

#### 7. Armed Forces

#### 8. Laborer - necessity physical/manual skills

Construction worker	Textile worker
Industrial worker	Truck driver
Factory worker	Farmer



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### 9. Other

Unemployed	Student
Band/Musician	Golf pro
Miscellaneous	

### APPENDIX IV-F

### ZIP CODE ANALYSIS

### 10. Business

Salesman/Sales management
Owner of small business
Self-employed
Purchasing Agent
Real Estate

Each of the respondents was asked to indicate the zip code of his home address. These codes were analyzed to determine the primary residence of the respondents by each of the subject beach areas. Concentrations of respondents from any particular metropolitan area, such as Charleston residents at Sullivan's Island, Isle of Palms and Folly Beach were indicated.

For most of the beach areas, however, there were no concentrations from single areas. The following exhibit shows the number and percentage of respondents from the listed states for the total sample, and for each of the beach areas.

The states with a significant percentage of representation overall include South Carolina (53.9%), North Carolina (15.7%), and Georgia (5.8%). No other single state accounted for more than 3.0% of the respondents. Analysis of each beach area is included in the body of the report.

# Part Eight

# Appendices

## APPENDIX IV-F

### ZIP CODE ANALYSIS PRIMARY RESIDENCE OF RESPONDENTS BY BEACH AREA

	Total Respondents		Atlantic Beach		Myrtle Beach Pavillion		Myrtle Beach State Park		Huntington Beach State Park		Sullivans Island		Isle of Palms		Folly Beach		Edisto Beach State Park		Hilton Head Island	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
South Carolina	677	53.9	79	39.1	21	17.8	83	36.1	41	39.8	62	92.5	89	79.5	156	88.1	110	85.9	36	30.5
Charleston (a)	358	28.5	-	-	-	-	-	-	-	-	53	79.1	72	64.3	150	84.7	83	64.8	-	-
North Carolina	197	15.7	73	36.1	41	34.7	58	25.2	15	14.6	-	-	2	1.8	-	-	6	4.7	2	1.7
Georgia	73	5.8	9	4.5	2	1.7	3	1.3	8	7.8	-	-	7	6.3	4	2.3	4	3.1	36	30.5
Savannah (a)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	15.3
Atlanta (a)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	10.2
Virginia	38	3.0	7	3.5	13	11.0	7	3.0	5	4.9	-	-	-	-	1	.6	2	1.6	3	2.5
Tennessee	33	2.6	1	.5	11	9.3	11	4.8	5	4.9	-	-	-	-	1	.6	2	1.6	2	1.7
New York	32	2.5	6	3.0	1	.8	11	4.8	6	5.8	1	1.5	2	1.8	1	.6	-	-	4	3.4
Pennsylvania	27	2.1	7	3.5	3	2.5	10	4.3	-	-	-	-	4	3.6	1	.6	1	.8	1	.8
Florida	23	1.8	6	3.0	-	-	5	2.2	3	2.9	1	1.5	1	.9	2	1.1	-	-	5	4.2
Ohio	23	1.8	1	.5	6	5.1	12	5.2	1	1.0	1	1.5	-	-	-	-	2	1.6	-	-
West Virginia	18	1.4	1	.5	8	6.8	4	1.7	1	1.0	1	1.5	-	-	3	1.7	-	-	-	-
Maryland	18	1.4	3	1.5	4	3.4	5	2.2	2	1.9	-	-	1	.9	1	.6	-	-	2	1.7
New Jersey	17	1.4	2	1.0	-	-	5	2.2	7	6.8	-	-	-	-	-	-	-	-	3	2.5
Kentucky	10	.8	1	.5	3	2.5	2	.9	2	.9	2	1.9	-	-	-	-	-	-	2	1.7
Illinois	9	.7	-	-	-	-	1	.4	4	3.9	-	-	-	-	-	-	-	-	4	3.4
Michigan	7	.6	-	-	1	.8	2	.9	-	-	-	-	1	.9	-	-	-	-	3	2.5
California	7	.6	-	-	-	-	2	.9	-	-	1	1.5	1	.9	1	.6	-	-	2	1.7
Connecticut	6	.5	-	-	1	.8	2	.9	-	-	-	-	-	-	2	1.1	-	-	1	.8
Delaware	6	.5	-	-	2	1.7	1	.4	3	2.9	-	-	-	-	-	-	-	-	-	-
District of Columbia	5	.4	1	.5	-	-	1	.4	-	-	-	-	1	.9	1	.6	-	-	1	.8
Minnesota	5	.4	-	-	-	-	2	.9	-	-	-	-	1	.9	-	-	-	-	2	1.7
Alabama	3	.2	1	.5	-	-	-	-	-	-	-	-	-	-	2	1.1	-	-	-	-
Texas	3	.2	2	1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	.8
Massachusetts	3	.2	-	-	-	-	1	.4	-	-	-	-	-	-	2	1.1	-	-	-	-
Iowa	3	.2	-	-	-	-	-	-	-	-	-	-	2	1.8	-	-	-	-	1	.8
Wisconsin	2	.2	1	.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	.8
Washington	2	.2	1	.5	-	-	1	.4	-	-	-	-	-	-	-	-	-	-	-	-
Indiana	2	.2	-	-	-	-	1	.4	-	-	-	-	-	-	-	-	-	-	1	.8
Colorado	2	.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1.7
Missouri	1	.1	-	-	1	.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alaska	1	.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	.8	-	-
Maine	1	.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	.8
New Hampshire	1	.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	.8
Arizona	1	.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	.8
TOTAL (b)	1,256	100.0	202	100.0	118	100.0	230	100.0	103	100.0	67	100.0	112	100.0	120	100.0	128	100.0	118	100.0

(a) Number and percentage shown are part of State figure.

(b) These totals reflect only those respondents who provided their zip code. Thirty-seven respondents did not answer.

Source: HLR, South Carolina Beach Use Survey, August, 1975.

# Bibliography

## Part Eight

### GENERAL

#### Books

1. Ducsik, D., Shoreline for the Public: A Handbook of Social, Economic, and Legal Considerations Regarding Public Recreational Use of the Nation's Coastal Shoreline, Cambridge, Mass., M.I.T. Press, 1974.
2. Harvard University, Graduate School of Design, Dept. of Landscape Architecture, Ecologic-Economic Analysis for Regional Development: Regional Science and Landscape Analysis Project, New York, Harvard University Free Press, November, 1969.
3. Hite, James C., and James M. Stepp, Coastal Zone Resource Management, New York, Praeger Publishing Company, 1971.
4. Smally, Wellford and Nelson, Shoreline Analysis of the City of Sarasota, Sarasota, Fla., 1970.

#### Signed Pamphlets

1. Badger, Daniel D., Recreational Considerations in Water Planning, Proceedings of the 10th Annual Conference on Water for Texas, College Station, Texas, Water Resources Institute, Texas A & M University, November 22-23, 1965.
2. Beckham, Frank M., Long Range Recreation Plans, Myrtle Beach, S.C., 1963.
3. Blossom, H. D., R. R. Forster, and J. H. Watts, An Approach to Regional Planning and Design in the North Georgian Bay Recreational Reserve, Cambridge, Mass., Harvard University, Graduate School of Design, Dept. of Landscape Architecture.
4. Bode, R., and W. Farthing, Coastal Area Management in North Carolina: Problems and Alternatives, North Carolina Institute of Civic Education, 1974.
5. Bradley, Earl H., Jr., and John Armstrong, A Description and Analysis of Coastal Zone and Shoreland Management Programs in the U.S., Ann Arbor, University of Michigan, Sea Grant Program, 1972.
6. Cox, Janson L., Old Dorchester State Park Historical Development, Columbia, S.C., South Carolina Dept. of Parks, Recreation and Tourism, 1971.

## GENERAL

### Signed Pamphlets (cont'd)

7. D'Ambrosi, Joan, Coastal Land Use - A Selected Annotated Bibliography, Council of Planning Librarians, University of Illinois, November, 1974.
8. Dean, R. G., Evaluation and Development of Water Wave Theories for Engineering Application, Volumes I and II, Fort Belvoir, Va., U. S. Army Corps of Engineers, Coastal Engineering Research Center, November, 1974.
9. Ditton, Robert B., Ph.D., The Social and Economic Significance of Recreation Activities in the Marine Environment, Ann Arbor, University of Michigan, Sea Grant Program, Tech. Rep. No. 11, 1972.
10. Ditton, Robert B., Ph.D., Water-Based Recreation: Access, Water Quality and Incompatible Use Considerations, an Interdisciplinary Bibliography, Council of Planning Librarians, University of Illinois, June, 1971.
11. Ducsik, Dennis W., "The Crisis in Shoreline Recreation Lands," in Papers on National Land Use Policy Issues, prepared for the Committee on Interior and Insular Affairs, U. S. Senate, by the Massachusetts Institute of Technology, the Woods Hole Oceanographic Institute, and Boston University, Washington, D.C., U. S. Government Printing Office, 1971.
12. Ellickson, Materials on Problems of Governing the Coastal Zone, unpublished, University of Southern California Law Center, 1971.
13. Healey, Warren, ed., Proceedings of the Second New England Coastal Zone Management Conference, Cambridge, Mass., Massachusetts Institute of Technology, Sea Grant Program, 1971.
14. Hopkins, Walter S., Jr., Impacts of Recreation on Competition for Use of Water, Western Resources Conference, 1963; Boulder, Colorado, University of Colorado Press, 1964.
15. Isaacs, Reginal R., Conservation of Beaches: A Study of Problems, Needed Political Resources, Actions Required of Private Enterprises, Citizens and the Government of the U. S. Virgin Islands, Cambridge, Mass., 1967.
16. Kinsky, Arthur M., Determination of Maximum Practical Recreation Use, unpublished paper presented at U. S. Army Corps of Engineers SPD Recreation Orientation Session; Sacramento, Calif., November 4-8, 1968.

# Bibliography

## Part Eight

### GENERAL

#### Signed Pamphlets (cont'd)

17. Kusler, J., Public/Private Parks and Management of Private Lands for Park Protection, Madison, Wisc., Institute for Environmental Studies, Report No. 16, March, 1974.
18. Kusler, J., Regulations to Reduce Conflicts Between Recreation Water Uses Wisconsin Dept. of Natural Resources, Research Report No. 65, 1970.
19. Olsen, Stephen B., and Malcohm J. Grant, Rhode Island's Barrier Beaches: Volume I. A Report on a Management Problem and an Evaluation of Options, Kingston, R.I., University of Rhode Island, Coastal Resources Center, Marine Technical Report No. 4.
20. Olsen, Stephen B., and Malcohm J. Grant, Rhode Island's Barrier Beaches: Volume II, Kingston, R.I., University of Rhode Island, Coastal Resources Center, Marine Technical Report No. 4, 1973.
21. Oswalt, Donald, Problems of Public Access to the Saltwater Beaches of Connecticut, Kingston, R.I., University of Rhode Island, Dept. of Marine Affairs, May, 1975.
22. Pinson, Lawrence F., and Thomas A. Weldon, Coastal Georgia, Its Resources and Development, Athens, Ga., Institute of Comm. and Area Development, Bureau of Business Research, 1969.
23. Schmid, A. Allan, Michigan Water Use and Development Programs, East Lansing, Mich., Michigan State University, Agricultural Experiment Station Circular Bulletin 230, 1961.
24. Sorenson, Jens, and Marie Demers, Coastal Zone Bibliography: Citations to Documents on Planning, Resource Management and Impact Assessment, La Jolla, Calif., University of California, Institute of Marine Resources 1973.
25. Stephans, Eleanor Belknap, Conflicts in Recreation, unpublished Masters Thesis; Chapel Hill, N.C., University of North Carolina, 1962.
26. Strang, William A., Recreation and the Local Economy: Implications for Economic and Resource Planning, Madison, Wisc., University of Wisconsin, Sea Grant Program, 1972.

GENERAL

Signed Pamphlets (cont'd)

27. Threinen, C. W., An Analysis of Space Demands for Water and Shore, reprinted from Transactions of the 29th North American Wildlife and Natural Resources Conference, March 9-11, 1964; Washington, D.C., Wildlife Management Institute, 1964.
28. Vismor, McGill and Bell, Initial Land Use Element, Lowcountry Regional Planning Council, June 22, 1972.

Unsigned Pamphlets

1. Batelle Memorial Institute, Pacific Northwest Laboratories, Shoreland Management Guidelines for the Grays Harbor Regional Planning Commission, Richland, Wash., 1971.
2. Beaufort County Joint Planning Commission, Open Space and Recreation Plan, Beaufort, S.C., June, 1973.
3. Beaufort County Joint Planning Commission, Town of Port Royal, S.C., Initial Reconnaissance Survey, 1973.
4. Berkeley-Charleston-Dorchester Regional Planning Council, Development Plan: McClellanville Area, Charleston, S.C., 1973.
5. Berkeley-Charleston-Dorchester Regional Planning Council, Development Plan: Township of Folly Island, 1973.
6. Berkeley-Charleston-Dorchester Regional Planning Council, Regional Open Space and Recreation Plan, Berkeley-Charleston Counties, June, 1971 and 1972.
7. Berkeley-Charleston-Dorchester Regional Planning Council and Charleston County Planning Board, Land Use and Analysis, June, 1975.
8. California Coastal Zone Conservation Commission, Annual Reports, 1973 and 1974.
9. California Coastal Zone Conservation Commission, California Coastal Plan, December, 1975.

# Bibliography

## Part Eight

### GENERAL

#### Unsigned Pamphlets (cont'd)

10. California Coastal Zone Conservation Commission, Preliminary Coastal Plan 1973.
11. Charleston County Park, Recreation and Tourist Commission, Charleston County Park and Recreation Master Plan, Charleston, S.C., May, 1971.
12. Charleston County Planning Division, Charleston County Park and Recreation Master Plan, Charleston, S.C., May, 1971.
13. Charleston County Tricentennial Committee, A Pictorial History, Charles-Towne 1670, Charleston 1970, 1970.
14. Coastal Plains Center for Marine Development Services, Report of the Conference on Marine Resources of the Coastal Plains States, Wilmington, N.C., December, 1974.
15. Countryside Commission, H. M. Stationery Office, The Planning of the Coastline: A Report on a Study of Coastal Preservation and Development in England and Wales, London, 1970.
16. Countryside Commission, H. M. Stationery Office, The Coastal Heritage: A Conservation Policy for Coasts of High Quality Scenery, London, 1970.
17. Creative Development Institute, An Initial Concept for Santee State Park, Florence, S.C.
18. Development Consultants, Inc., Hunting Island State Park Feasibility Study, Charlotte, N.C., December, 1971.
19. East Central Florida Regional Planning Council, Regional Background for Planning the Coastal Area, Titusville, Fla., 1968.
20. Florida Coastal Coordinating Council, Florida Coastal Zone Land Use and Ownership Atlas, Tallahassee, Fla., Florida Dept. of Natural Resources, 1971.
21. Florida Coastal Coordinating Council, Florida Coastal Zone Management Atlas, Tallahassee, Fla., Florida Dept. of Natural Resources.

## GENERAL

### Unsigned Pamphlets (cont'd)

22. Florida Coastal Coordinating Council, Recommendations for Development Activities in Florida's Coastal Zone, Tallahassee, Fla., Florida Dept. of Natural Resources, 1973.
23. George Washington University, Shoreline Recreation Resources of the United States: Report to the Outdoor Recreation Resources Review Commission, Washington, D.C., 1962.
24. Georgia Dept. of Natural Resources, North Carolina Dept. of Administration, South Carolina Dept. of Parks, Recreation and Tourism, Southern Highlands Mountain Resources Management Plan, June, 1974.
25. Georgetown, S.C., City of, Planning and Zoning Commission, Georgetown, S.C., Population and Economy, 1968.
26. Georgetown, S.C., City of, Master Plan, Recreation Areas, Open Spaces, Parks, 1966.
27. Grand Strand Area Building Permit Data, obtained from Building Dept's of Myrtle Beach, North Myrtle Beach, Surfside, Georgetown County (Waccamaw Neck), and Horry County (Strand area), 1973-April 1974.
28. Great Britain Coastal Commission, Coastal Heritage, London, 1970.
29. Great Britain Coastal Commission, Coastal Recreation and Holidays, Volume I, London, 1969.
30. Great Britain Coastal Commission, Nature Conservancy at the Coast, Volume II, London, 1970.
31. Great Britain Coastal Commission, Planning of the Coastline, London, 1970.
32. Hampton County Planning Commission, Hampton County Land Development Plan, 1974.
33. Horry County Auditor's Office, Property Tax Assessment Data, Grand Strand, Horry County, S.C., 1963 and 1973.
34. LBC & W Associates, Preliminary Land Development Plan, Waccamaw Regional Planning and Development Council, Columbia, S.C., June, 1972.



# Bibliography

## Part Eight

### GENERAL

#### Unsigned Pamphlets (cont'd)

35. LBC & W Associates, Rebellion Road, Development Concept Program, Columbia, S.C., August, 1972.
36. Louisiana Advisory Commission on Coastal and Marine Resources, Wetlands '73: Toward Coastal Zone Management in Louisiana, Baton Rouge, Louisiana State University, 1973.
37. Lowcountry Regional Planning Council, Initial Land Use Element, Yemassee, S.C., June, 1972.
38. Lowcountry Regional Planning Council, Open Space Plan and Program - Lowcountry Regional Planning District, Yemassee, S.C., May, 1973.
39. National Academy of Sciences, A Program for Outdoor Recreation Research, Washington, D.C., 1969.
40. National Council on Marine Resources and Engineering Development, Marine Science Affairs - A Year of Broadened Participation, Washington, D.C., 1970.
41. New England River Basin Commission, Long Island Sound Study, Boston, Mass., Summer, 1975.
42. New Hampshire State Planning Project, New Hampshire Public Water Bodies and Public Access Points (Part II), Concord, N.H., September, 1965.
43. North Carolina Coastal Resources Commission, State Guidelines for Local Planning in the Coastal Area Under the Coastal Area Management Act of 1974, Raleigh, N.C., Office of State Planning, January 27, 1975, amended October 15, 1975.
44. Ocean Drive Beach, S.C., City of, Comprehensive Outdoor Recreation Plan for Ocean Drive Beach, S.C., 1966.
45. Rappahannock Area Development Commission, Radco Planning District 16, Fredericksburg, Va., May, 1974.
46. Rhode Island Coastal Management Council, Barrier Beach Findings, Definitions, Policies and Regulations.

## GENERAL

### Unsigned Pamphlets (cont'd)

47. Rhode Island Committee on the Coastal Zone, Report of the Governor's Committee on the Coastal Zone, Providence, R.I., Statewide Comprehensive Transportation and Land Use Planning Program, 1970.
48. Rhode Island Development Council, The Rhode Island Shore: A Regional Guide Plan Study, 1955-1970, Providence, R.I., 1956.
49. Smith, Wilbur, and Associates, South Carolina Critical Areas Process, Columbia, S.C., June 30, 1974.
50. Smith, Wilbur, and Associates, Statistical Data: Charleston Area Transportation Study, Volume II, Columbia, S.C., June, 1969.
51. South Carolina, Budget and Control Board, Research & Statistical Services, 1974 S.C. Statistical Abstract, Columbia, S.C., August, 1974.
52. South Carolina Dept. of Parks, Recreation and Tourism, Hunting Island State Park Development Plan.
53. South Carolina Dept. of Parks, Recreation and Tourism, Engineering and Planning Section, Master Plan for Huntington Beach State Park, Columbia, S.C., September, 1974.
54. South Carolina Dept. of Parks, Recreation and Tourism, Master Plan and Land Use Plan, Myrtle Beach State Park, Columbia, S.C., January, 1971, updated by interviews.
55. South Carolina Dept. of Parks, Recreation and Tourism, Orientation Report for Governor-Elect James B. Edwards, December 10, 1974.
56. South Carolina Dept. of Parks, Recreation and Tourism, Division of Planning and Development, Proposed Acquisition for Capers Island, Columbia, S.C., January, 1975.
57. South Carolina Dept. of Parks, Recreation and Tourism, South Carolina, A Lot of It Looks a Little Like a Foreign Country, 1974.
58. South Carolina Dept. of Parks, Recreation and Tourism, South Carolina Outdoor Recreation Plan 1970/1984, Executive Summary.
59. South Carolina Dept. of Parks, Recreation and Tourism, South Carolina Private Outdoor Recreation Systems Plan, 1970.

# Bibliography

## Part Eight

### GENERAL

#### Unsigned Pamphlets (cont'd)

60. South Carolina Dept. of Parks, Recreation and Tourism, South Carolina Private Outdoor Recreation Systems Plan, 1972.
61. South Carolina Dept. of Parks, Recreation and Tourism, South Carolina Private Outdoor Recreation Systems Plan, 1975.
62. South Carolina Dept. of Parks, Recreation and Tourism, South Carolina Urban Recreation Problem Reviews, Columbia, S.C.
63. South Carolina Heritage Trust, Elements of Diversity (Final Report Documents: A First Draft), Arlington, Va., The Nature Conservancy, March, 1975.
64. South Carolina, Office of the Governor, Division of Administration, Physical and Economic Development Unit, Beaufort County Land Use Survey and Analysis, Columbia, S.C., June, 1973.
65. South Carolina, Office of the Governor, Division of Administration, South Carolina State Development Plan, Coastal Plains Area, Fiscal 72-73.
66. South Carolina, Office of the Governor, State Planning and Grants Division Comprehensive Development Plan, Myrtle Beach, S.C., April, 1970.
67. South Carolina, Office of the Governor, State Planning and Grants Division Development Plan for North Myrtle Beach, S.C., October, 1970.
68. South Carolina, Office of the Governor, State Planning and Grants Office, Community Planning Division, Initial Reconnaissance Survey for Surfside Beach, S.C., April, 1970.
69. South Carolina, Office of the Governor, State Planning and Grants Office, Community Affairs Section, Land Use Survey and Analysis, Surfside Beach, S.C., March, 1971.
70. South Carolina Water Resources Commission, 1970 Annual Report.
71. South Carolina Water Resources Commission, Coastal Mapping - A Seminar on the Technical and Legal Aspects of Surveying in the South Carolina Coastal Region, Charleston, S.C., December 10, 1974.

## GENERAL

### Unsigned Pamphlets (cont'd)

72. South Carolina Water Resources Commission, Permit Applications Policy and Procedure for Water Resources Commission, 1971.
73. South Carolina Water Resources Commission, South Carolina Tidelands Report, Columbia, S.C., 1969.
74. Southern Growth Policies Board, Land and Natural Resources in the South, Atlanta, Ga., December, 1974.
75. Sport Fishing Institute and Outboard Boating Club of America, Proceedings: Fourth National Conference on Access to Recreational Waters, San Diego, Calif., 1965.
76. Surfside Beach Town Council, Surfside Planning and Promotion Board and Community Affairs Section, S.C. State Planning and Grants Office, Land Use Survey and Analysis, Surfside Beach, S.C., May, 1971.
77. Synergetics, Inc., Specifications for the Construction of the Theater, Service Area, and Site Development: Charles Towne Landing, Columbia, S.C.
78. Texas Interagency Council on Natural Resources and Environment, Texas Coastal Resources Management Program: A Comprehensive Report to the 63rd Texas Legislature, Austin, Texas.
79. Texas Legislature, The Beaches and Islands of Texas - Report to the 57th Texas Legislature, 1961.
80. Texas Legislature, 60th, Interim Beach Study Committee, Footprints on the Sands of Time: An Evaluation of the Texas Seashore, 1970.
81. Texas Parks and Wildlife Dept., Beach Cleaning and Maintenance Assistance Program, 1974.
82. U. S. Army Corps of Engineers, Murrell's Inlet: Survey Report on Navigation, Charleston, S.C., March, 1970.
83. U. S. Army Corps of Engineers, National Shoreline Study: Regional Inventory Report, Atlanta, Ga., August, 1971.
84. U. S. Army Corps of Engineers, National Shoreline Study: Shore Management Guidelines, Washington, D.C., 1971.

# Bibliography

## Part Eight

### GENERAL

#### Unsigned Pamphlets (cont'd)

85. U. S. Army Corps of Engineers, Proceedings of the 14th Coastal Engineering Conference, Chapters 55, 78, and 80; Fort Belvoir, Va., 1974.
86. U. S. Army Corps of Engineers, State of South Carolina Regional Inventory Report on Shoreline Erosion - Draft Report, Charleston, S.C.
87. U. S. Congress, 92nd, 1st Session, House Document No. 92-137 (Murrell's Inlet, Georgetown County, S.C.), Washington, D.C., 1971.
88. U. S. Congress, 92nd, 2nd Session, House Document No. 92-362 (Little River Inlet, N.C. and S.C.), Washington, D.C., 1972.
89. U. S. Congress, Testimony of State Senator R. L. Schwartz to House Representative Committee on Merchant Marine and Fisheries, Washington, D.C., 1973.
90. U. S. Dept. of Commerce, NOAA, Office of Coastal Zone Management, State Coastal Zone Management Activities, Rockville, Md., October, 1974.
91. U. S. Dept. of Commerce, National Technical Information Service, Recreation Access Study, Washington, D.C., February, 1975.
92. U. S. Dept. of Interior, Bureau of Outdoor Recreation, Financing of Private Outdoor Recreation, Washington, D.C., May, 1967.
93. U. S. Dept. of Interior, Bureau of Outdoor Recreation, Islands of America, U. S. Government Printing Office, 1970.
94. U. S. Dept. of Interior, Federal Water Pollution Control Administration, The Santee Recreation Project, Santee, California, Final Report, Cincinnati, Ohio, 1967.
95. U. S. Dept. of Interior, National Park Service, Our Vanishing Shoreline, 1955.
96. U. S. Dept. of Interior, National Park Service, Reconnaissance Report of Magnolia Seashore Area, Richmond, Va., 1960.
97. U. S. Outdoor Recreation Resources Review Commission, Water for Recreation - Values and Opportunities, Study Report No. 10; U. S. Government Printing Office, 1962.

## GENERAL

### Unsigned Pamphlets (cont'd)

98. University of Michigan, Great Lakes Resource Management Program, Planned Unit Development: Tool or Trap?, Ann Arbor, Planning Information Bulletin 2 of the Coastal Zone Laboratory, 1976.
99. University of Rhode Island, New England Marine Resources Information Program, Outdoor Recreation Uses of Coastal Areas, No. 7; Kingston, R.I., 1969.
100. University of Texas, Division of Natural Resources and the Environment, Bay and Estuarine System Management in the Texas Coastal Zone, Austin, Texas, Governor's Office, Division of Planning Coordination, 1973.
101. University of Wisconsin, Sea Grant Program, The Future of Boating on Lake Michigan, Madison, Wisc., 1971.
102. Ventura County Planning Commission, General Plan: Regional Parks, Shoreline Development, Riding and Hiking Trails, Calif., 1965.
103. Vismor, McGill and Bell, Inc., A Planning Manual for South Carolina Local Governments, Columbia, S.C., 1973.
104. Waccamaw Regional Planning Commission, Initial Reconnaissance Survey - Aynor, South Carolina, 1973.
105. Waccamaw Regional Planning and Development Council, Atlantic Beach - Reconnaissance Survey and Program Design, September 1, 1973.
106. Waccamaw Regional Planning and Development Council, Capital Improvements Program and Capital Improvements Budget, Surfside Beach, S.C., June, 1973.
107. Waccamaw Regional Planning and Development Council, Community Facilities Plan, Surfside Beach, S.C., March, 1975.
108. Waccamaw Regional Planning and Development Council, An Environmental, Historical and Recreational Atlas of the Waccamaw Region, Georgetown, S.C., 1973.
109. Waccamaw Regional Planning and Development Council, Georgetown County Development Plan, prepared for the Georgetown County Planning and Zoning Commission and County Commissioners; Georgetown, S.C., 1973.
110. Waccamaw Regional Planning and Development Council, Grand Strand Comprehensive Planning Study, August, 1973.

# Bibliography

## Part Eight

### GENERAL

#### Unsigned Pamphlets (cont'd)

111. Waccamaw Regional Planning and Development Council, Overall Program Design, Georgetown, S.C., June, 1974.
112. Waccamaw Regional Planning and Development Council, Williamsburg County, Georgetown, S.C., 1973.
113. Washington Land Use Symposium, Land, Recreation and Leisure, abstracted from the first annual Land Use Symposium; Washington, D.C., 1970.

### GENERAL

#### Signed Periodicals

1. Ackley, G., "Land Use and the Leisure Boom," Dun's, 100, October, 1972, p. 7.
2. Arno, S. F., "They're Putting Wild Back in Wilderness," National Parks and Conservation Magazine, 45, September, 1971, pp. 10-14.
3. Beller, W. S., "Coastal Areas and Seashores," Current History, 59, August, 1970, pp. 100-4+.
4. Beller, W. S., "Ocean Islands - Consideration for Their Coastal Zone Management," Coastal Zone Management Journal, 1, Fall, 1973, pp. 27-45.
5. Bisso, L. C., "People, Planners, and Politicians," Planning, Zoning and Eminent Domain Institute, 1972, p. 37.
6. Brody, Barbara, "Coastline Watchdogs: Will They Bark or Bite?" San Francisco Business, 8, May, 1973, pp. 14-16.
7. Bryer, Robin, "Priorities in Coastal Development," Planner, 60, March, 1974, pp. 588-95.
8. Capper, L. S., "Land Between the Lakes," National Wildlife, 8, June, 1970, pp. 38-41.
9. Carter, L. J., "Galveston Bay Test Case of an Estuary in Crisis," Science, 167, February 20, 1970, p. 1102.

## GENERAL

### Signed Periodicals (cont'd)

10. Chase, R. W., "Commercial Approaches to Public Recreation," Parks and Recreation, 8, May, 1973, p. 26.
11. Clement, Charles, and James Richardson, "Recreation on the Georgia Coast: An Ecological Approach," Georgia Business, 30, May, 1971, pp. 1-21.
12. Connelly, D., "Resort That Helps Preserve a Wild Seashore: Salishan, Oregon," Sports Illustrated, 30, April 28, 1969, pp. 36-40.
13. Conover, H. S., "Beach Construction in a State Park: Robert Moses State Park near Massena, N.Y.," Parks and Recreation, 1, May, 1966, p. 420.
14. Coppock, J. T., "The Recreational Use of Land and Water in Britain," Tijdschrift voor Economische en Sociale Geografie, 57, May-June, 1966, pp. 81-96.
15. Craig, J. B., "They: Environmentalists and Land Utilization," American Forest, 79, August, 1973, p. 26.
16. Craine, L. E., "Institutions for Managing Lakes and Bays," Natural Resources Journal, 11, July, 1971, p. 519.
17. Davis, Jim, "A Look at the Coastal Zones," Humble Way, 10, Second Quarter, 1971, p. 20.
18. Douglas, P. M., "Coastal Zone Management - A New Approach in California," Coastal Zone Management Journal, 1, Fall, 1973, pp. 1-25.
19. Dworsky, L. B., "Management of the International Great Lakes," Natural Resources Journal, 14, January, 1974, pp. 103-38.
20. Fisher, A. C., and J. V. Krutilla, "Determination of Optimal Capacity of Resource Based Recreation Facilities," Natural Resources Journal, 12, July, 1972, p. 417.
21. Frederickson, W., Jr., "Public Seashores: Their Administration," Parks and Recreation, 1, August, 1966, pp. 638-40.
22. Frome, Mike, "Sunfish Pond in Delaware Water Gap National Recreation Area," American Forest, 74, July, 1968, p. 5+.



## GENERAL

### Signed Periodicals (cont'd)

23. Gopalakrishnan, C., and J. Rutka, "Some Institutional Constraints to Coastal Zone Management: A Case Study of Hawaii," American Journal of Economics and Sociology, 33, pp. 225-32.
24. Gosser, H., "Painting the Waterfront," Parks and Recreation, 1, July, 1966, pp. 558-60.
25. Hawkins, D. E., "Trends at a Glance: Progress of Park and Recreation Services Over the Past 25 Years," Parks and Recreation, 2, July, 1967, pp. 21+.
26. Hayden, B., and R. Dolan, "Management of Highly Dynamic Coastal Areas of the National Park Service," Coastal Zone Management Journal, 1, Winter, 1974, pp. 133-39.
27. Hertz, K. D., "County Acts to Save Its Vanishing Shorelands," Parks and Recreation, 5, February, 1970, pp. 48-9+.
28. Hines, T. I., "The Pro and Con of Charges and Fees (for parks and recreation areas)," Parks and Recreation, 48, February, 1965, pp. 102-3.
29. Hoffman, Gene, "Recreation Areas for Small Towns (How Small Communities Have Financed Recreational Needs Through Formation of Nonprofit Associations: Iowa)," Iowa Municipalities, 19, February, 1965, pp. 14-16.
30. Hysom, J. L., Jr., "Land Use Controls: Who Watches the Watchers," Urban Land, 33, March, 1974, pp. 3-9.
31. Inman, D. L., and B. M. Brush, "Coastal Challenge," Science, 181, July 6, 1973, pp. 20-32.
32. Jubenville, A., and T. C. Wood, "Quasi-Wilderness: Need for More Trails," Parks and Recreation, 8, March, 1973, pp. 38+.
33. Jackson, Reiner, "Planning for the Capacity of Lakes to Accommodate Water-Oriented Recreation," Plan, 10, June, 1970, pp. 29-40.
34. Kennedy, R., "Eden Fights Back: Saving the Islands of Sannibel and Captiva," Sports Illustrated, 42, February 3, 1975, pp. 28-30.
35. Kershow, W. W., "Developers Help Country Acquire Recreation Sites," Parks and Recreation, 2, February, 1967, p. 4.

## GENERAL

### Signed Periodicals (cont'd)

36. Knecht, Robert, "Coastal Zone Management Act: A Broader Scope for State Initiative," Water Spectrum, 5, November 1, 1973, pp. 32-36.
37. Marx, W., "Case of the Vanishing Beaches: California," American Forests, 71, November, 1965, pp. 10-13+.
38. Matthews, G. C., "Crusader in the Swamps: Protecting Southwest Coast of Florida," Time, 100, August 14, 1972, pp. 40-41.
39. McClaskey, Paul N., Jr., "Preservation of America's Open Space: Proposal for a National Land Use Commission," Michigan Law Review, 68, May, 1970, pp. 1167-74.
40. Milek, B., "Access: The Key to Public Land Recreation," Field and Stream, 73, April, 1969, p. 20+.
41. Morris, N., and R. Laudenslayer, "Site Reading," Recreation, 58, April, 1965, pp. 167-8.
42. Mott, W. P., Jr., "Creative Approach to Parks and Recreation," Recreation, 58, September, 1965, pp. 340-1.
43. Nace, R. L., "Arrogance Toward Landscape: A Problem in Water Planning, Excerpts from Address September 4, 1969," Bulletin of the Atomic Scientists, 25, December, 1969, pp. 11-14.
44. Nadel, M., "Citizen's Voice in Wilderness," Living Wilderness, 31, Autumn, 1967, p. 2.
45. Nierengarten, P., "Maintenance of Public Use Areas," Parks and Recreation, 1, March, 1966, pp. 249-50.
46. Ogden, Daniel M., "Wildland Policy Decisions - By Whom?" Journal of Forestry, 68, April, 1970, p. 200.
47. Paulson, F. M., "Fishing and Boating, the Land Between," Field and Stream, 74, July, 1969, pp. 36-39.
48. Rettie, D. F., "New Perspective on Leisure," Parks and Recreation, 9, August, 1974, pp. 20-25+.

# Bibliography

## Part Eight

### GENERAL

#### Signed Periodicals (cont'd)

49. Roe, K. S., "California Loses Another Beach: Dilton Beach," Audubon Magazine, 67, March, 1965, pp. 110-111.
50. Russell, Clifford S., and Alan V. Kneise, "Establishing the Scientific, Technical and Economic Basis for Coastal Zone Management," Coastal Zone Management Journal, 1, Fall, 1972, pp. 47-63.
51. Sapor, A. V., "Evaluation of Park and Recreation Operations: Who Should Do It?" Parks and Recreation, 4, December, 1969, pp. 35-36.
52. Schenker, Alan E., "Toudoor Recreation on Federal Lands: Three Dimensions of Organization," Rocky Mountain Social Science Journal, 8, October, 1971, pp. 83-90.
53. Simmons, G., "Indian River Study," Sea Frontiers, 21, January, 1975, pp. 38-43.
54. Simmons, I. G., "Wilderness in the Mid-20th Century U.S.A.," Planning Review, 36, January, 1966, p. 249.
55. Soucie, G., "Coast Saving: Developers Covet Highest Dune: Jockey's Ridge on the Outer Banks of North Carolina," Audubon, 76, May, 1974, pp. 94-95.
56. Starr, Warren A., "Multiple Land Use Management," Natural Resources Journal, 1 (2), November, 1961, pp. 288-301.
57. Stollings, C., "Last Sea Island Is Up For Grabs," Audubon, 76, May, 1974, pp. 75-76.
58. Thomas, Joseph M., "Florida's Outdoor Recreation Program," Florida Planning and Development, 18, December, 1967, pp. 1+.
59. Thompson, J. R., "Giant Nobody Knows: Outdoor Recreation Enterprises, Studied by Georgia State Planning Bureau," Parks and Recreation, 3, March, 1968, pp. 24-26+.
60. Trillin, C., "U. S. Journal: The Coastline," New Yorker, 48, November 18, 1972, p. 215.
61. Uhlig, H. G., "Big Recreation Needs: Watershed Projects," American City, 85, December, 1970, p. 59.

## GENERAL

### Signed Periodicals (cont'd)

62. U. S. Dept. of Interior, National Park Service, "Tocks Island National Recreation Area: A Proposal," Planning and Civic Comment, 30, March, 1964, pp. 29-34 and 54-55.
63. Vines, William R., "Florida Beach Resources Management Needs," Florida Planning and Development, 18, June, 1967, pp. 1+.
64. Wagner, Alan, "Recreational Carrying Capacity Considered," Journal of Forestry, 72, May, 1974, pp. 274-78.
65. Wagner, J. V., "Some Fundamental Characteristics of Outdoor Recreation," Journal of Forestry, 64, October, 1966, pp. 667-73.
66. Winslow & Bigler, "A New Perspective on Recreational Use of the Ocean," Undersea Technology, Volume 10, No. 7, July, 1969, pp. 51+.
67. Ziunuska, J. S., "Managed Wilderness," American Forest, 79, August, 1970, pp. 16-19.

## GENERAL

### Unsigned Periodicals

1. "American Seashore: Symposium," Holiday, 40, July, 1966, pp.8+.
2. "Are American Beaches in Danger Too?" U. S. News and World Report, 62, April 17, 1967, pp. 46+.
3. "Battle for America's Crowded Coastlines," U. S. News and World Report, 69 August 10, 1970, p. 44.
4. "Battle Over California's Coast," Business Week, September 30, 1972, p. 63
5. "Can We Save Our Open Space?" Parks and Recreation, 2, March, 1967, p. 23.
6. "A Critical View of Zoning," Colorado Municipalities, 41, May, 1965, pp. 118+.
7. "Governing Recreation," Economist, 230, February 1, 1969, p. 47.

COASTAL ZONE  
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# Bibliography

## Part Eight

### GENERAL

#### Unsigned Periodicals (cont'd)

8. "Government Subsidy for Inland Waterways," Municipal and Public Services Journal, 75, September 15, 1967, pp. 2418+.
9. "The Hackensack Meadowlands - 1968," Jersey Plans, 17, Summer, 1968, pp. 5-23.
10. "Hawaii's Quiet Revolution Hits the Mainland," Reader's Digest, 103, October, 1973, pp. 128-33.
11. "Improvements Planned for Historic Waikiki," Hawaii Economic Review, 9, November-December, 1971, pp. 1+.
12. "Losing Ground," Time, 91, April 26, 1968, p. 52.
13. "Narrow Beach Lot: Special Design Problems," Sunset, 139, July, 1967, p. 58.
14. "Outdoor Recreation: Water-based Recreation," American County Government, 33, April, 1968, pp. 21-44.
15. "Rivers, Recreation and You: Interview with F. Church," Field and Stream, 71, July, 1961, pp. 10-13.
16. "Where the Beaches Go," Science Digest, 59, April, 1966, pp. 38-39.
17. "Zoning: The Floating Zone: A Potential Instrument of Versatile Zoning," Catholic University Law Review, 16, September, 1966, p. 85.

#### Signed News Stories

1. Amor and Foster, "Ratcliffe Wins Seat in Surfside," Sun News, Myrtle Beach, S.C., March 13, 1974.
2. Bunker, "America's Shoreline Is Shrinking," Boston Herald Traveler, October 18, 1970, p. 23.
3. Cummings, "The Late Great State of Maine," Portland Sunday Telegram, August 30, 1970.
4. Cummings, "Maine for Sale: Everybody's Buying," Portland Sunday Telegram, August 23, 1970.

GENERAL

Signed News Stories (cont'd)

5. Cummings, "Where Went the Maine Coast," Portland Sunday Telegram, August 16, 1970.
6. Darnton, "Suburbs Stiffening Beach Curbs," N.Y. Times, July 10, 1972, p. 1
7. Fradkin, "Fences Go Up to Keep Public from Beaches," L.A. Times, March 21, 1971, p. C-1.
8. Fradkin, "State Promises Aid in Enforcing Public Access to Beaches," L.A. Times, February 25, 1970, p. A-3.
9. Hirsch, Mayor Robert J., "Mayor Hirsch Calls for Unity," Sun News, Myrtle Beach, S.C., letter to the Editor, April 3, 1974.
10. Meade, Fred, "Engineers to Study Pawley's Water Plan," Sun News, Myrtle Beach, May 10, 1974.
11. Monk, John, "Council Cites Violations," Sun News, January 24, 1974.
12. Monk, John, "Key Reading Set for Joint Use," Sun News, May 21, 1974.
13. Monk, John, "Wasterwater Master Plan Unveiled," Sun News, June 5, 1974.
14. Monk, John, "Zoning Ordinances Get First Reading," Sun News, January 16, 1974.
15. Tonoer, "Where Have All the Beaches Gone?" Miami Herald, April 22, 1973.
16. Ulman, Neil, "Land Use Quarrels: States Move to Trim Local Zoning Autonomy as Criticisms Increase," Wall Street Journal, August 15, 1966, p. 1.
17. Webster, "Few Seaside Beaches Left Open in Developers' Rush," N.Y. Times, March 29, 1970, p. 54.

# Bibliography

## Part Eight

### GENERAL

#### Unsigned News Stories

1. "Alternate School Site for Waccamaw Eyed," Sun News, Myrtle Beach, May 18, 1974.
2. "Coast Area Benchmark Aid Sought," Sun News, May 24, 1974.
3. "Coastal Planning Funds Awarded," Sun News, May 11, 1974.
4. "Proposed Strand Highway to Benefit Entire State," Sun News, editorial, April 10, 1974.
5. "Record Crowd Awaited," Sun News, June 20, 1974.
6. "Slowdown Benefits Cited," Sun News, February 16, 1974.

### MARKETING

#### Signed Pamphlets

1. Brewer, M. F., Incorporating Recreational Values into Benefit-Cost Analysis, in Western Farm Economics Association Proceedings, August, 1962.
2. Case, Natalie, William Gasnell, and Elaine Gerber, Paying for Open Space, Baltimore, Md., Baltimore Regional Planning Council, 1972.
3. Clawson, Marion, Recreation as a Competitive Segment of Multiple Use, in Land and Water Use, No. 73, ed. by Wynne Thorne, Washington, D.C., American Association for the Advancement of Science, 1963.
4. Copeland, Leona and Lewis, Travelers and South Carolina Business During 1972, University of Tennessee, 1973.
5. Devanney, John W., III, Economic Factors in the Development of a Coastal Zone, Cambridge, Mass., Massachusetts Institute of Technology Sea Grant Program, 1970.
6. Marr, Michael J., Study of Economic Change in Two South Carolina Coastal Counties, Columbia, S.C., University of South Carolina, Bureau of Business and Economic Research.

## MARKETING

### Signed Pamphlets (cont'd)

7. Mayo, Edward J., The Psychology of Choice in the Lodging Market, University of Notre Dame, 1974.
8. Olson, Arden, and David Jamison, Marine Land Management in Washington, Olympia, Wash., Washington Dept. of Natural Resources, Division of Survey and Marine Land Management, 1973.
10. Paterson, Karen W., Joel L. Lindsey, and Alvin L. Bertrand, The Human Dimension of Coastal Zone Development, Baton Rouge, La., Louisiana State University, Agricultural Experiment Station, 1974.
11. Permar, Diana, Charleston, S.C., Area Market Analysis (Isle of Palms Beach and Racquet Club), Hilton Head Island, S.C., April, 1975.
12. Royer, L. E., Stephan McCool, and John D. Hunt, The Relative Importance of Tourism to State Economies, Utah State University.
13. Tideman, T., Defining Distressed Areas, Harvard University Program on Regional and Urban Economics, Discussion Papers, 1973.
14. Warren, Robert, Mitchell L. Moss, Robert L. Bish, and Lyle E. Craine, Designing Coastal Management Agencies: Problems in Allocating Coastal Resources, Los Angeles, Center for Urban Affairs, University of Southern California, 1972.
15. Wilkins, Bruce T., ed., Critical Issues for the Coastal Zone - Recreation: Public and Private Sectors, in Managing Our Coastal Zone, Proceedings of a Conference on Coastal Zone Management held at Albany, N.Y., February 2-21; Albany, N.Y., State University of New York, Sea Grant Program, 1973.
16. Woodside, Arch G., and David Reid, Tourism Profiles Versus Audience Profiles: Are Upscale Magazines Really Upscale?, S.C. Dept. of Parks, Recreation and Tourism, Columbia, S.C.,

### Unsigned Pamphlets

1. American Automobile Association, Distances Between Cities, South Carolina State Maps.
2. Behavior Science Corporation, Developing the Family Travel Market, Los Angeles, 1972.



# Bibliography

## Part Eight

### MARKETING

#### Unsigned Pamphlets (cont'd)

3. Berkeley-Charleston-Dorchester Regional Planning Council, Study of the Population and Economy of the Berkeley-Charleston-Dorchester Region, Charleston, S.C., 1972.
4. Centaur Management Consultants, Inc., Family Income Patterns in Tourism/ Recreation Areas, Washington, D. C., U. S. Dept. of Commerce, 1974.
5. Charleston County Planning Board, Growth Trends in Charleston County, S.C. S.C., 1969.
6. Clemson University Cooperative Extension Service, Reference Tables - Population Change of Counties and Incorporated Places in South Carolina, 1950-70, Clemson, S.C., January, 1972.
7. Clemson University, Dept. of Agricultural Economics and Rural Sociology, Preliminary County Data for Economic Study of Coastal Plains Area, Clemson, S.C., 1967.
8. Coastal Plains Regional Commission, Regional Development Plan, Draft Revision, November, 1970.
9. The Conference Board, "Consumer Attitudes and Buying Plans," in Consumer Market Indicators, May, 1975.
10. Edie, Lionel D., and Company, U. S. Travel Outlook Through 1982, May, 1972
11. Georgia Dept. of Natural Resources, Office of Planning and Research, Resources Planning Section, Activities in Georgia's Coastal Waters, Draft Copy, Atlanta, Ga., 1974.
12. Greater Myrtle Beach Chamber of Commerce, Myrtle Beach Grand Strand, 1975.
13. Greater Myrtle Beach Chamber of Commerce, Visitor Survey, September, 1974.
14. Greiner, J. E., Company, Inc., Air Transportation Market Demand in the Coastal Plains, Tampa, Fla., 1971.
15. Harper, Cotton and Little, Inc., Findings and Recommendations for State and Local Travel Investment Programs in the Coastal Plains Region, Charlotte, N.C., 1971.
16. Hartzog, Lader & Richards, South Carolina Beach Use Survey, Washington, D.C., August 1, 1975.

## MARKETING

### Unsigned Pamphlets (cont'd)

17. Kiawah Beach Company, Myrtle Beach Market Study, Charleston, S.C., March 3, 1975.
18. Leisure Systems, Inc., Recreational Development Opportunities of the Intracoastal Waterway in South Carolina, North Carolina, and Georgia, 1969.
19. Marketing Economics Institute, Marketing Economics Guide, 1974-75, 1974.
20. Midwest Research Institute, Compressed Work Weeks - Impact for L/R Products and Services, Kansas City, Mo., 1974.
21. Midwest Research Institute, 1974 Leisure Industry Program, November, 1974.
22. Midwest Research Institute, Opportunities in the Leisure Industry: Statistical Summary, 1972.
23. Midwest Research Institute, unpublished data, 1974.
24. Research Triangle Institute, 1973 North Carolina Travel Survey, Research Triangle Park, N.C., 1974.
25. Sales Management, 1974 Survey of Buying Power, July 8, 1974.
26. Sea Pines Company, Resort Guest Tracking System Quarterly Reports, June 1974, January 1975, and May 1975; Hilton Head Island, S.C.
27. Smith, Wilbur, and Associates, Travel Demands and Recommended Transportation Plan, Vol. I, Columbia, S.C., October, 1968.
28. Smith, Wilbur, and Associates, Travel Demands and Recommended Transportation Plan: Summary Report, Columbia, S.C., August, 1968.
29. South Carolina Dept. of Parks, Recreation and Tourism, Computer Inventory, Columbia, S.C., 1973.
30. South Carolina Dept. of Parks, Recreation and Tourism, Recreation Survey, 1974.
31. South Carolina Dept. of Parks, Recreation and Tourism, Recreation Survey, 1975.

# Bibliography

## Part Eight

### MARKETING

#### Unsigned Pamphlets (cont'd)

32. South Carolina Dept. of Parks, Recreation and Tourism, South Carolina Private Outdoor Recreation Systems Plan, Private Recreation Users Profile; 1975.
33. South Carolina Dept. of Parks, Recreation and Tourism, 1973 South Carolina Travel Study - Summary Report, 1974.
34. South Carolina Dept. of Parks, Recreation and Tourism, 1974 South Carolina Travel Study - Summary Report, 1975.
35. U. S. Dept. of Commerce, 1970 Census - General, Social and Economic Characteristics: South Carolina, Washington, D.C., March, 1972.
36. U. S. Dept. of Commerce, Current Population Reports, Series P-23, No. 47, "Illustrative Projections of Money, Income, Size, Distribution, for Families and Unrelated Individuals," U. S. Government Printing Office, 1974.
37. U. S. Dept. of Commerce, Bureau of the Census, Statistical Abstract of the United States, Washington, D.C., 1972.
38. U. S. Dept. of Interior, Bureau of Outdoor Recreation, Outdoor Recreation Action, Washington, D.C., Fall, 1975.
39. U. S. Dept. of Interior, Bureau of Outdoor Recreation, Recreation in the Coastal Zone, 1975.
40. U. S. Dept. of Interior, Bureau of Outdoor Recreation, 1965 Survey of Outdoor Recreation Activities, Washington, D.C., 1964.
41. U. S. Dept. of Interior, Bureau of Outdoor Recreation, 1970 Survey of Outdoor Recreation Activities, Preliminary Report, 1972.
42. U. S. Dept. of Interior, Bureau of Sport Fisheries and Wildlife, National Survey of Fishing and Hunting, Resource Publication No. 27; Washington, D.C., 1965.
43. U. S. Travel Data Center, 1972 National Travel Expenditure Study: Summary Report, Washington, D.C., September, 1973.
44. Urban Land Institute, Planning and Developing Waterfront Property, Tech. Bulletin 49; Washington, D.C., June, 1964.

MARKETING

Unsigned Pamphlets (cont'd)

45. Waccamaw Regional Planning and Development Council, "Resident Population Trends, Waccamaw Region, 1930-1970," in Population and Economy, April, 1972.

Signed Periodicals and News Stories

1. Barkan, A., "Problems in the Valuation of Real Estate," New York University Institute of Federal Taxation, 26, 1968, p. 351.
2. Bechtar, D. M., "Outdoor Recreation (expenditure)," Federal Reserve of Kansas City, November, 1970.
3. Bedell, Douglass, "Costly Playgrounds: Developers Drive Up Price of Land Picked for New National Parks," Wall Street Journal, 168, July 22, 1966.
4. David, E. J. L., "The Exploding Demand for Recreation Property," Land Economics, 45, May, 1969, pp. 206-17.
5. Dower, M., "Recreation, Tourism and the Farmer," Journal of Agricultural Economics, 24, September, 1973, pp. 454-77.
6. Knetsch, Jack C., "Economics of Including Recreation as a Purpose of Eastern Water Projects (address)," Journal of Farm Economics, 46, December, 1964, pp. 1148-57.
7. Kraws, R., "Economics of Leisure Today," Parks and Recreation, 6, August, 1971, pp. 62-66+.
8. Porter, R. W., "Financing Outdoor Recreation (excerpt from address)," Parks and Recreation, 4, November, 1969, pp. 23+.
9. Robinson, W. C., "The Simple Economics of Public Outdoor Recreation," Land Economics, 43, February, 1967, p. 71.
10. Yanggen, A., and John A. Kusler, Land Economics, 44, February, 1968, pp. 73-86.
11. Yorshis, S. H., "Appraising Ocean Front Property," Title News, 47, November, 1968, p. 8.

## ENVIRONMENT

### Books

1. Bascom, Willard, Waves and Beaches: The Dynamics of the Ocean Surface, Garden City, N.Y., Doubleday, 1964.
2. Boesch, Donald F., et al., Oil Spills and the Marine Environment, Energy Policy Project of the Ford Foundation; Ballinger Publishing Co., 1974.
3. Ducsik, Dennis, ed., Power, Pollution and Public Policy: Issues in Electric Power Production, Shoreline Recreation, and Air and Water Pollution Facing New England and the Nation, Cambridge, Mass., M.I.T. Press, 1971.
4. Hite, James C., and Eugene A. Laurent, Environmental Planning: An Economic Analysis: Applications for the Coastal Zone, New York, Praeger Press, 1972.
5. Reid, George K., Ecology of Inland Waters and Estuaries, New York, Van Nostrand Reinhold, 1961.
6. Shaler, Nathaniel, Beaches and Tidal Marshes of the Atlantic Coast, New York, American Book Co., 1895.

### Signed Pamphlets

1. Alexander, Harold E., Water Policy and Wildlife, reprinted from Proceedings of the Fourteenth Annual Conference, Southeastern Association of Game and Fish Commissioners, October 23-26; Columbia, S.C., Southeastern Association of Game and Fish Commissioners, 1960.
2. Armstrong, John M., and Thomas H. Suddath, eds., The Dimensions of Coastal Zone Management: Proceedings of Annual Meeting of the Coastal States Organization, Seattle, Washington, July 28-30, 1971, Ann Arbor, University of Michigan, Sea Grant Program, 1972.
3. Armstrong, John, Harold Bissell, Russell Davenport, Joel Goodman, Marc Hershman, Jens Sorenson, Lucy Sloan, and Daniel Wormhoudt, Coastal Zone Management: The Process of Program Development, Sandwich, Mass., Coastal Zone Management Institute, 1974.

## ENVIRONMENT

### Signed Pamphlets (cont'd)

4. Batsille, James H., Analysis and Interpretation of Littoral Environment Observation (LEO) and Profile Data Along the Western Panhandle Coast of Florida, Fort Belvoir, Va., U. S. Army Corps of Engineers, Coastal Engineering Research Center, March, 1975.
5. Bearden, Charles M., and Michael D. McKenzie, A Guide to Saltwater Sport Fishing in South Carolina, Charleston, S.C., South Carolina Wildlife and Marine Resources Dept., 1974.
6. Berg, Dennis W., and Morrison G. Essick, Case Study - Hunting Island Beach, S.C., in the Proceedings of Seminar on Planning and Engineering in the Coastal Zone; Charleston, S.C., Coastal Plains Center for Marine Development, 1972.
7. Bird, E. C. F., Coasts, Cambridge, Mass., M.I.T. Press, 1969.
8. Blumer, Max, Scientific Aspects of the Oil Spill Problem, in Environmental Affairs, Vol. I, No. 1, April, 1971.
9. Brenneman, R. L., Private Approaches to the Preservation of Open Land, Conservation and Research Foundation, 1967.
10. Brun, Per, and Madhov Marchar, Coastal Protection for Florida Development and Design, Gainesville, Fla., Florida Engineering and Industrial Experiment Station, 1963.
11. Bumpus, Dean F., and Louis M. Lauzier, Surface Circulation on the Continental Shelf Off Eastern North America Between Newfoundland and Florida, Serial Atlas of the Marine Environment, Folio 7, 1965.
12. Cheney, Philip B., The Development of a Procedure and Knowledge Requirements for Marine Resource Planning. Functional Step Two, Knowledge Requirements, Hartford, Conn., The Travelers Research Corporation, 1970.
13. Clark, John, Coastal Ecosystems: Ecological Considerations for Management of the Coastal Zone, Washington, D.C., The Conservation Foundation, 1974.
14. Cole, Bruce J., ed., Marine Recreation Conference: Planning for Shoreline and Water Uses, Kingston, R.I., University of Rhode Island.
15. Croke, E. J., et al., The Relationship Between Land Use and Environmental Quality, Publication PB-209642; Springfield, Va., U. S. Dept. of Commerce, National Technical Information Service, 1972.

### ENVIRONMENT

#### Signed Pamphlets (cont'd)

16. Cronin, L. Eugene, Gordon Gunter, and Sewell H. Hopkins, Effects of Engineering Activities on Coastal Ecology, U. S. Army Corps of Engineers, 1971.
17. Douglas, Peter, Coastal Resources Planning and Controlling Their Uses: The California Approach.
18. Erlich, Harry, and P. H. McGouhey, Economic Evaluation of Water, Jurisdictional Considerations in Water Resources Management, in Economic Evaluation of Water, Part 2, June, 1964.
19. Ferguson, L. G., Pintail Island Project, Columbia, S.C., South Carolina Institute of Archaeology and Anthropology, University of South Carolina, 1973.
20. Goodin, Julius A., Jr., Man-Made Lakes and Waterways Within Residential Developments, unpublished Masters Thesis; Atlanta, Ga., Georgia Institute of Technology, 1961.
21. Hargis, William J., and Beverly L. Laird, The Environmental, Resource-Use, and Management Needs of the Coastal Zone, Gloucester Point, Va., The Virginia Institute of Marine Science, 1971.
22. Haugen, Arnold O., and Arnold J. Sohn, Competitive Recreational Uses of Selected Iowa Lakes, Completion of Report of Project No. A-005-1A, Iowa State Water Resources Research Institute, June 30, 1968.
23. Hayes, Miles O., et al., Beach Erosion Inventory of Charleston County, South Carolina: A Preliminary Report, South Carolina Sea Grant Technical Report No. 4, 1975.
24. Hite, James C., James M. Stepp, W. W. Hall, E. A. Laurent, and W. J. Steele, Economic Evaluation of Zoning Alternatives in the Management of Estuarine Resources in South Carolina, Report No. 25; Clemson, S.C., Water Resources Research Institute, Clemson University, 1972.
25. Hubbard, Dennis K., and Robert J. Finley, Tidal Inlet Morphology and Hydrodynamics of Merrimack Inlet, Mass., and North Inlet, S.C., Columbia, S.C., University of South Carolina, Dept. of Geology, Coastal Research Division, 1973.

## ENVIRONMENT

### Signed Pamphlets (cont'd)

26. Jackson, Reiner, Shoreline Recreation Planning: A Systems View, Waterloo, Ontario, University of Waterloo, Faculty of Environmental Studies, 1973.
27. Jagschilz, John, and Robert C. Wakefield, How to Build and Save Beaches, Kingston, R.I., University of Rhode Island, College of Resource Development, 1971.
28. Johnson, F. A., A Reconnaissance of the Winyah Bay Estuarine Zone, South Carolina, U. S. Dept. of Interior, Geological Survey, Water Resources Division, 1972.
29. Johnson, P. L., Wetlands Preservation, New York, Open Space Institute, 1969.
30. Ketchum, Bostwick H., ed., The Water's Edge: Critical Problems of the Coastal Zone, Cambridge, Mass., M.I.T. Press, 1972.
31. Ketchum, Bostwick H., and Bruce W. Tripp, A Summary of the Conclusions and Recommendations of the Coastal Zone Workshop Held in Woods Hole, Massachusetts from May 22 to June 3, 1972, Woods Hole, Mass., Woods Hole Oceanographic Institution.
32. Laird, Beverly L., et al., Documents Related to the Coastal Zone: An Annotated Bibliography, Gloucester Point, Va., The Virginia Institute of Marine Science, 1972.
33. LaRoe, Edward T., Statement on Relation of Coastal Zone Management to Offshore Petroleum, April, 1974.
34. Lipp, Morris N., Some Practical Facts About Beach Erosion in Florida, New York, American Society of Civil Engineers, Waterways Division, 1953.
35. McClenan, Cecil M., and D. Lee Harris, The Use of Aerial Photography in the Study of Wave Characteristics in the Coastal Zone, Fort Belvoir, Va., U. S. Army Corps of Engineers, January, 1975.
36. McKee, John J., ed., The Maine Coast: Prospects and Perspectives: A Symposium, October 20-22, 1966, Brunswick, Maine, Center for Resource Studies, Bowdoin College, 1967.
37. Neiheisel, James, Littoral Drift in Vicinity of Charleston Harbor, Proceedings of the American Society of Civil Engineers, Journal of the Waterways and Harbors Division, 1959.



# Bibliography

## Part Eight

### ENVIRONMENT

#### Signed Pamphlets (cont'd)

38. Nelson, Frank P., The Cooper River Environmental Study, South Carolina Water Resources Commission, 1974.
39. Plager, S., and F. Maloney, Controlling Water Front Development, Gainesville, Fla., University of Florida, Public Administrative Clearing Service, Studies in Public Administration, November 30, 1968.
40. Sargent, Frederick O., and W. H. Bingham, Lakeshore Land Use Controls, Burlington, Vt., Vermont Agricultural Experiment Station, 1969.
41. Shealy, M. H., Jr., et al., A Survey of Benthic Macrofauna of Fripp Inlet and Hunting Island, South Carolina, Prior to Beach Nourishment, South Carolina Marine Resources Center, Tech. Report No. 7, 1975.
42. Sorenson, Jens C., A Framework for Identification and Control of Resource Degredation and Conflict in the Multiple Use of the Coastal Zone, Berkeley, University of California, College of Environmental Design, Dept. of Landscape Architecture, 1971.
43. Talbert, O. Rhett, Jr., The Atlantic Loggerhead, Caretta caretta caretta, on Kiawah Island, S.C., 1975.
44. Thompson, John R., Ecological Effects of Offshore Dredging and Beach Nourishment: A Review, Misc. Paper No. 1-73; Fort Belvoir, Va., U. S. Army Corps of Engineers, Coastal Engineering Research Center, 1973.
45. Wagener, H. D., Notes on Beach Erosion in the Charleston Harbor Area, Columbia, S.C., South Carolina State Development Board, Division of Geology, 1970.
46. Wharton, Charles H., The Southern Swamp - A Multiple-Use Environment, Athens, Ga., Georgia State University, Bureau of Business and Economic Research, May, 1970.
47. Wilcox, Susan M., and Walter J. Mead, The Impact of Offshore Oil Production on Santa Barbara County, California, February, 1973.
48. Wilson, George T., Lake Zoning for Recreation: How to Improve Recreational Use of Lakes Through Regulations, Wheeling, W.Va., American Institute of Park Executives, Management Aids Bulletin No. 44, 1964.

ENVIRONMENT

Unsigned Pamphlets

1. California State Dept. of Conservation, Dept. of Fish and Game, Dept. of Emergency Services, Oil Spills Contingency Plan, Sacramento, August, 1972.
2. California State Dept. of Navigation and Ocean Development, California Comprehensive Ocean Area Plan, Sacramento, 1971.
3. Coastal Plains Center for Marine Development Services, An Index to Coastal Marine Observations Off the Carolinas and Georgia, Part II of an Environmental Inventory for the Coastal Plains and Adjacent Atlantic Waters of the Southeastern States; Wilmington, N.C., June, 1972.
4. Coastal Zone Resources Corporation, An Environmental Report on the Georgetown Harbor Project, Georgetown County, South Carolina, 1973.
5. Coastal Zone Resources Corporation, An Environmental Report on the Port Royal Project, Beaufort County, South Carolina, 1973.
6. Coastal Zone Resources Corporation, An Environmental Report on the Village Creek Project, Beaufort County, South Carolina, 1973.
7. Coastal Zone Resources Corporation, An Environmental Report on the Waccamaw River Project, North and South Carolina, 1973.
8. Connecticut State Dept. of Environmental Protection, Potential Environmental Effects of an Oil Refinery in Connecticut, November, 1974.
9. Council on Environmental Quality, OCS Oil and Gas - An Environmental Assessment, Washington, D.C., April, 1974.
10. Environmental Research Center, Inc., A Preliminary Report on the Environmental Inventory of Kiawah Island, S.C., Columbia, S.C., 1974.
11. Georgia Dept. of Natural Resources, Revised Dune Protection Ordinance, City of Savannah Beach, Atlanta, Ga., 1973.
12. Glynn County Beach and Dune Study Commission, Glynn County Beach and Dune Study, Brunswick, Ga., 1973.
13. Harvard University, Aspects of the Shoreline Pertaining to Recreation and Erosion, Cambridge, Mass., 1961.

# Bibliography

## Part Eight

### ENVIRONMENT

#### Unsigned Pamphlets (cont'd)

14. HHW Associates, Inc., Final Report of Scientific Studies for the Charleston Beach and Racquet Club, 1974.
15. Illinois Dept. of Public Works and Buildings, Division of Waterways, Interim Report for Erosion Control, Illinois Shore of Lake Michigan.
16. LBC & W Associates, Population and Economy, Waccamaw Region, S.C., 1972.
17. Little, Arthur D., Inc., Analysis of Environmental Impact of Port Development in Charleston Harbor, South Carolina, Volumes I, IIA and IIB, Cambridge, Mass., September, 1974.
18. Louisiana State University, Center for Wetland Resources, Wetlands: Resources for the Future, Baton Rouge, La., 1971.
19. National Academy of Sciences, Steering Committee on Coastal Wastes Management, Wastes Management Concepts for the Coastal Zone: Requirements for Research and Investigation, Washington, D.C., 1970.
20. National Climatic Center, AWS Climatic Brief, Myrtle Beach AFB, S.C., 1942-1967.
21. National Petroleum Council, U. S. Energy Outlook, A Summary Report of the National Petroleum Council, Washington, D.C., December, 1972.
22. Naval Weather Service Environment Detachment, Station Climatic Summary, Beaufort, S.C., 1957-1972, Asheville, N.C.
23. Naval Weather Service Environment Detachment, Station Climatic Summary, Charleston, S.C., 1945-1972, Asheville, N.C.
24. New Jersey Dept. of Conservation and Economic Development, Division of State and Regional Planning, New Jersey's Shore: An Inventory and Analysis of Land Use, Trenton, N.J., 1966.
25. North Carolina Land Policy Council, Office of State Planning, Criteria for the Identification of Areas of Environmental Concern, Raleigh, N.C. July, 1974.
26. Rhode Island Committee on the Coastal Zone, Potential Values and Problems in Using Water Supply Reservoirs and Watersheds for Recreational Purposes, Providence, R.I., Statewide Comprehensive Transportation and Land Use Planning Program, 1974.

## ENVIRONMENT

### Unsigned Pamphlets (cont'd)

27. South Carolina, Office of the Governor, Lowcountry: Resource Conservation and Development Project, Columbia, S.C., May 1, 1967.
28. South Carolina Pollution Control Authority, Stream Classifications for the State of South Carolina, 1972.
29. South Carolina Public Service Authority, Environmental Impact Statement - Pintail Island.
30. South Carolina Water Resources Commission, Port Royal Sound Environmental Study, The State Printing Company, 1972.
31. South Carolina Water Resources Commission, Wando River Environmental Quality Studies, An Interim Report, Columbia, S.C., April, 1973.
32. South Carolina Wildlife and Marine Resources Dept., Marine Resources Division, Guidelines for Evaluating Coastal Wetland Developments, January, 1974.
33. South Carolina Wildlife and Marine Resources Dept., List and Description of Coastal Areas Under Consideration as Unique Natural Areas or Critical Environmental Areas, March, 1975.
34. Texas Parks and Wildlife Dept., State of Texas Beach Cleaning and Maintenance Manual, 1970.
35. Trustees of Reservations, This Fragile Shore, Coone Beach, Ipswich, Mass.: A Program of Sand Dune Protection, Milton, Mass., 1972.
36. U. S. Army Corps of Engineers, New England Division, Beach Erosion Control Report on Cooperative Study of the Shore of Cape Cod between Cape Cod Canal and Rose Point, Provincetown, Mass., 1959.
37. U. S. Army Corps of Engineers, Garden City Beach: Detailed Project Report on Beach Erosion Control, 1972.
38. U. S. Army Corps of Engineers, Charleston District, Regional Inventory Report of Shoreline Erosion, draft report, 1975.
39. U. S. Army Corps of Engineers, Survey Report on Cooperative Beach Erosion Control Study at Hunting Island Beach, South Carolina, Charleston, S.C., 1963.

# Bibliography

## Part Eight

### ENVIRONMENT

#### Unsigned Pamphlets (cont'd)

40. U. S. Army Corps of Engineers, South Atlantic Division, Water Resources Development by the U. S. Army, Corps of Engineers in South Carolina, Atlanta, Ga., 1975.
41. U. S. Congress, 88th, 2nd Session, Hunting Island Beach, South Carolina, Washington, D.C., 1964.
42. U. S. Dept. of Commerce, NOAA, Office of Coastal Zone Management, Coastal Management Aspects of OCS Oil and Gas Developments, Rockville, Md., January, 1975.
43. U. S. Dept. of Commerce, Weather Bureau, Climatological Summary, Georgetown, S.C., 1925-1954.
44. U. S. Dept. of Interior, Bureau of Sport Fisheries and Wildlife, National Estuary Study, U. S. Government Printing Office, 1970.
45. U. S. Dept. of Interior, National Park Service, Great Lakes Shoreline Recreation Area Survey, Remaining Shoreline Opportunities in Minnesota, Wisconsin, Illinois, Indiana, Ohio, Michigan, Pennsylvania, and New York, Washington, D.C., 1960.
46. U. S. Environmental Protection Agency, Areawide Waste Treatment Management Planning, Washington, D.C., November, 1974.
47. U. S. Environmental Protection Agency, First Things First: A Strategy Against Water Pollution, Washington, D.C., September, 1974.
48. U. S. Environmental Protection Agency, Report on Areawide Designation and Planning, Washington, D.C., April, 1975.
49. U. S. Outdoor Recreation Resources Review Commission, Multiple Use of Land and Water Areas, Study Report No. 17, U. S. Government Printing Office, 1962.
50. U. S. Task Force on Environmental Health and Related Problems, A Strategy for a Livable Environment, U. S. Government Printing Office, June, 1967.
51. Washington State Dept. of Ecology, Final Guidelines, Shoreline Management Act of 1971, Olympia, Wash., 1972.

## Signed Periodicals

1. Abelson, P. H., "Natural Beauty and Conservation," Science, 147, March 12, 1965, p. 1295.
2. Behan, R. W., "Succotash System or Multiple Use: A Heartfelt Approach to Forest Land Management," Natural Resources Journal, 7, October, 1967, p. 473.
3. Blassingame, W., "Jack and the Dragline: Battle to Save North Florida's Marshes," Audubon, 75, May, 1973, pp. 52-59.
4. Brennan, William J., "Balancing Man's Demands of the Sea and Shore," NOAA Magazine, January, 1975.
5. Burton, Ian, and Robert W. Katos, "The Flood Plain and the Seashore: A Comparative Analysis of Hazard Zone Occupancy (U.S.)," Geographical Review, 54, July, 1964, pp. 366-85.
6. Caldwell, L. K., "Ecosystem as a Criterion for Public Land Policy," Natural Resources Journal, 10, April, 1970, p. 204.
7. Chandler, E. W., and J. W. Chandler, "Sand Dunes: Problem or Prize?" American Forest, 78, January, 1972, pp. 32-35.
8. Clement, R. C., "Marshes, Developers, and Taxes, a New Ethic for Our Estuaries," Audubon, 71, November, 1969, pp. 34-35.
9. Crane, D. A., and G. P. Wolfe, "Achieving Quality in Environment," Planning, Zoning, and Eminent Domain, 1971, p. 43.
10. Crutchfield, James H., "Valuation of Fishery Resources," Land Economics Journal, 37(2), May, 1962, pp. 145-54.
11. Dolan, R., "Barrier Dune System Along the Outer Banks of North Carolina: A Reappraisal," Science, 176, April 21, 1972, pp. 286-88.
12. Dolan, R., and B. Hayden, "Adjusting to Nature in our National Seashores," National Parks and Conservation Magazine, 48, June, 1974, pp. 9-14.
13. Einsohn, B., "Birth of a Beach," Motor Boating and Sailing, 128, July, 1971, pp. 56-57.
14. Frese, P. S., "Let's Keep Our Natural Beauty," Flower Grower, The Home Garden, 52, September, 1965, p. 15.

# Bibliography

## Part Eight

### ENVIRONMENT

#### Signed Periodicals (cont'd)

15. Gerber, William, "Coastal Conservation," Editorial Research Reports, February 25, 1970, p. 141.
16. Goodman, R. H., "Our Coastal Marshes: Are They to Become a Vanishing Resource," Recreation, 58, June, 1965, pp. 305-7.
17. Hanley, W., G. C. Matthiessen, and S. L. Udall, "Ebbtide of Our Salt Marshes," Recreation, 58, June, 1965, p. 271.
18. Harrington, A., and L. Regenstein, "Plight of Ocean Mammals," Environmental Affairs, 1, March, 1972, p. 792.
19. Hartley, W., and E. Hartley, "Can Land Be Developed Without Wrecking Nature," Science Digest, 71, January, 1972, pp. 73-78.
20. Hay, S., "Sea of Survival: Excerpt from 'In Defense of Nature'," Audubon, 71, May, 1969, pp. 40-51.
21. Inman, D. L., and B. M. Brush, "Coastal Challenge," reply with rejoinder, S. P. Poulou and J. R. Clayton, Jr., Science, 184, May 24, 1974, pp. 714-15.
22. Lindsay, S., "Complex Life of the Ocean's Edge: Ecosystems of Tidal Zones," Saturday Review, 55, April 15, 1972, pp. 30-33.
23. McLean, M. T., Jr., "Keeping the Outdoors for the Future," Parks and Recreation, 3, January, 1968, pp. 31-32.
24. Newman, M. E., "Shelters on a Scalloped Shore: Sea Ranch, California," Sports Illustrated, 24, March 28, 1966, pp. 46-52.
25. O'Mara, W. P., "California's Irreplaceable Coastline," Sea Frontiers, 19, July, 1973, pp. 211-18.
26. Palmer, J. D., "Biological Clocks of the Tidal Zone," Scientific American, 232, February, 1975, pp. 70-77+.
27. Phleger, F. B., and J. S. Bradshaw, "Sedimentary Environments in a Marine Marsh," Science, 154, December 23, 1966, pp. 1551-3.
28. Redford, P., "Vanishing Tidelands," Atlantic, 219, June, 1967, pp. 75-78.

## ENVIRONMENT

### Signed Periodicals (cont'd)

29. Reitze, A. W., Jr., and G. L. Reitze, "Preserving Land from Development," Environment, 15, November, 1973, pp. 41-42.
30. Roberts, J. M., "Wandering Sands," Americas, 22, August, 1970, pp. 9-14.
31. Schuberth, C. J., "Barrier Beaches of Eastern America," Natural History, 79, June, 1970, pp. 46-55.
32. Sekam, J., "Between the Tides," Conservationist, 27, August, 1972, p. 49.
33. Shepherd, J., "Disappearing Beauty of the Salt Marsh," Look, 34, April 21, 1970, pp. 24-31.
34. Singletary, R. L., "Tide Pools: Nature's Marine Aquaria," Sea Frontiers, 18, January, 1972, pp. 2-9.
35. Soucie, G., "We Can Still Save Salt Marshes of Georgia, Carolina," Smithsonian, 5, March, 1975, pp. 32-39.
36. Soucie, G., "Who Will Gird Our Beaches for the Energy Onslaught? The Coastal Imperative: A National Conference on Coastal Zone Management," Audubon, 76, May, 1974, pp. 96-97.
37. Tanner, W. F., "Our Moving Beaches," Americas, 23, October, 1971, pp. 2-8.
38. Teal, J., and M. Teal, "Ribbon of Green: Epic of a Salt Marsh, Its Birth, Life, and Death," Audubon, 7, November, 1969, pp. 4-8.
39. Thomsen, D. E., "As the Seashore Drifts," Science News, 101, June 17, 1972, p. 396.
40. Tippy, R., "Preservation Values in River Basin Planning," Natural Resources Journal, 8, April, 1968, p. 259.
41. Towell, W. E., "Parks Are For People: Balancing Park Use and Preservation of Resources," American Forest, 73, October, 1967, pp. 5+.
42. Tydings, J. D., "Coastal Erosion," Parks and Recreation, 3, February, 1968, pp. 18-19+.
43. Wharton, R., "They're Saving America's Priceless Seashore," Reader's Digest, 89, August, 1966, p. 181.



# Bibliography

## Part Eight

### ENVIRONMENT

#### Signed Periodicals (cont'd)

44. Wilson, J. E., "Protecting a Natural Beach," Conservationist, 24, April, 1970, pp. 28-31.
45. Wolff, A., "Saving Swamps," Science Digest, 77, February, 1975, p. 14.

#### Unsigned Periodicals

1. "Are Landmarks Part of the Environment," Hobbies, 75, May, 1970, p. 50.
2. "Battle for the Beaches, California," Senior Scholastic, 101, November 13, 1972, p. 7.
3. "Diseased Estuaries," New Republic, 160, March 1, 1969, p. 7.
4. "Drive to Save America's Shorelines," U. S. News and World Report, 73, July 31, 1972, pp. 38-40.
5. "Environmental Policy: New Directions in Federal Action: A Symposium," Public Administration Review, 28, July-August, 1968, p. 301.
6. "Dying Marshes," Audubon, 71, November, 1969, pp. 21-32.
7. "Erosion of Eden: Is Tourism Creating Its Own Pollution," Saturday Review, 53, June 6, 1970, p. 58.
8. "Growing Battle to Save America's Coastlines," U. S. News and World Report, 77, September 9, 1974, pp. 45-47.
9. "Is Scenic Protection Merely a Joke?" Audubon, 70, January, 1968, p. 4.
10. "Keeping the Wilderness Wild - How Will It Be Done," U. S. News and World Report, 57, August 24, 1964, p. 65.
11. "Martha's Vinyard: The Development of a Legislative Strategy for Preservation," Environmental Affairs, 3, 1974, pp. 396-431.
12. "Oregon Dunes National Recreation Area," National Parks and Conservation Magazine, 49, January, 1975, pp. 30-31.
13. "Plastic Seaweed Helps Build Up Beach Sand," Science News Letter, 88, August 21, 1966, p. 123.

## Part Eight

## Bibliography

### ENVIRONMENT

#### Unsigned Periodicals (cont'd)

14. "Sands Trace Erosion," Science News Letter, 89, February 12, 1966, p. 101.
15. "Symposium: Administration of Public Lands," Natural Resources Journal, 7, April, 1967, p. 149.
16. "Threatened Coastlines," Time, 98, August 30, 1971, p. 32.
17. "Threatened Marshes of Glynn: Georgia's Swamps," Life, 67, November 14, 1969, pp. 88-93.
18. "Where Waves Erode the Land," Geographical Magazine, 44, May, 1972, pp. 557-62.
19. "Wisconsin's Requirements for Shoreland and Flood Plain Protection," Natural Resources Journal, 10, April, 1970, pp. 327-35.

### ENVIRONMENT

#### Signed News Stories

1. Cook, F. J., "Case of the Disappearing Coastline," N.Y. Times Magazine, September 25, 1966, pp. 38-39.
2. Davenport, S. R., Jr., "Great Ripoff of Long Island's Beaches," N.Y. Times Magazine, July 30, 1972, pp. 8-9+.
3. Meade, Fred, "Deepwater Well Tested for NMB," Sun News, Myrtle Beach, S.C. May 17, 1974.
4. Meade, Fred, "NMB Environmental Unit Formed," Sun News, May 17, 1974.
5. Monk, John, "Wastewater Views Vary," Sun News, June 11, 1974.
6. Sweeney, Ken, "Area Water, Wastewater for Grand Strand Aired," Sun News, June 12, 1974.

# Bibliography

## Part Eight

### ENVIRONMENT

#### Unsigned News Stories

1. "Coast Development Safeguards Beefed," Sun News, Myrtle Beach, S.C., March 8, 1974.
2. "Surfside Sewer Nod Awaited," Sun News, February 21, 1974.

### LEGAL

#### Books

1. Doolittle, Fred C., Land Use Planning and Regulation on the California Coast: The State Role.
2. Douglas, William O., A Wilderness Bill of Rights, Little, 1965.
3. Hirshleifer, J., J. C. DeHaven and J. W. Milliman, Water Rights - U. S., Chicago, University of Chicago Press, 1960.
4. Ullman, Edward, Ronald R. Boyce, and Donald Volk, The Meramec Basin: Water and Economic Development, Vol. 1; St. Louis, Mo., Washington University Press, 1962.

#### Signed Pamphlets

1. Alexander, Lewis M., ed., The Law of the Sea: Offshore Boundaries and Zones, Proceedings of the First Annual Conference of the Law of the Sea Institute, June 27-July 1, 1966; Columbus, Ohio, State University Press 1967.
2. Angel, J., A Treatise on the Right of Property in Tidewaters, 2d ed. 1847.
3. Bailey, Gilbert E., and Paul S. Thayer, California's Disappearing Coast: A Legislative Challenge, No. 3; Berkeley, Institute of Government Studies University of California, 1971.

## LEGAL

### Signed Pamphlets (cont'd)

4. Berlin, Roisman and Kessler, Law in Action: The Trust Doctrine, in Law and the Environment, ed. by M. Baldwin and J. Page.
5. Beuscher, J. H., J. P. DeBraal, H. H. Ellis, and D. C. Howard, Water-Use Law and Administration in Wisconsin, Madison, Wisc., University of Wisconsin, Department of Law, 1970.
6. Bosselman, Fred, David Callies, and John Santa, Selected Legal Cases Dealing with Beach and Sand Dune Protection, from The Taking Issue - A Study of the Constitutional Limits of Governmental Authority to Regulate the Use of Privately Owned Land Without Paying Compensation to the Owners, U. S. Government Printing Office, 1973.
7. Buckland, W., A Textbook of Roman Law from Augustus to Justinian, 2d ed. 1937.
8. Campbell, William A., and Milton S. Heath, Legal Aspects of Designation of Areas of Environmental Concern Under the Coastal Area Management Act, Chapel Hill, N.C., Institute of Government, University of North Carolina, January 6, 1975.
9. Dewsnup, R., Public Access Rights in Waters and Shorelands, National Water Commission, Legal Study 8-B, 1971.
10. Eckhardt, The Texas Open Beaches Act, in The Beaches: Public Rights and Private Use, Galveston, Texas Law Institute of Coastal and Marine Resources, Conference Proceedings, January, 1972.
11. Forste, Robert H., Multiple-Use Problems of Water Law in New Hampshire, Proceedings of Water Rights Law Conference; Boston, Mass., New England Council of Water Center Directors, November 10, 1966.
12. Garretson, Albert, The Land-Sea Interface of the Coastal Zone of the United States: Legal Problems Arising Out of Multiple Use and Conflicts of Private and Public Rights and Interests, Springfield, Va., U. S. Dept. of Commerce, National Technical Information Service, Publication PB-179428, 1968.
13. Gould, J., A Treatise on the Law of Waters, 1900.
14. Henry, Harriet P., Coastal Zone Management in Maine: A Legal Perspective, Augusta, Maine, State Planning Office, Coastal Planning Group, 1973.

# Bibliography

## Part Eight

### LEGAL

#### Signed Pamphlets (cont'd)

15. Kalinske, A. J., The Law Relating to Access to Public Waters in New Hampshire, Proceedings of Water Rights Law Conference; Boston, Mass., New England Council of Water Center Directors, November 10, 1966.
16. Kendall, James H., Basic Concepts of Private Water Rights, Proceedings of Water Rights Law Conference; Boston, Mass., New England Council of Water Center Directors, November 10, 1966.
17. Loveland, R., Hall's Essay on the Rights of the Crown and Privileges of the Subject in the Sea Shore of the Realm, 1875.
18. Middleton, Philip, A Review of the Law Pertaining to the Private Ownership of South Carolina's Marshland, January, 1975.
19. Moore, S., A History of the Foreshore and the Law Relative Thereto, 3d ed. 1888.
20. Newman, The State's View of Public Rights to the Beaches, in The Beaches: Public Rights and Private Use, Galveston, Texas Law Institute of Coastal and Marine Resources, Conference Proceedings, January, 1972.
21. Packer, Paul E., and Harold F. Haupt, The Influence of Roads on Water Quality Characteristics, reprinted from the Proceedings of the Society of American Foresters, 1965, Washington, D.C., U. S. Forest Service, 1965.
22. Plimpton, O. A., Conservation Easements, Legal Analysis of Conservation Easements as a Method of Privately Conserving and Preserving Land; Washington, D.C., The Nature Conservancy.
23. Ratliff, Private Use and Public Rights, in The Beaches: Public Rights and Private Use, Galveston, Texas Law Institute of Coastal and Marine Resources, Conference Proceedings, January, 1972.
24. Sargent, F. O., Multiple Use and Water Law, Proceedings of Water Rights Law Conference; Boston, Mass., New England Council of Water Center Directors, November 10, 1966.
25. Schoenbaum, Thomas J., Public Rights and Coastal Zone Management, Raleigh, N.C., North Carolina State University/University of North Carolina Sea Grant Program, 1972.

## LEGAL

### Signed Pamphlets (cont'd)

26. Shalowitz, A., Shore and Sea Boundaries, Coast Guard Geodetic Survey Pub. No. 10-1, 1962.
27. Whyte, William H., Easements and Other Approaches, in Maine Coast Prospects and Perspectives: A Symposium, Brunswick, Maine, Center for Resource Studies, 1966.

## LEGAL

### Unsigned Pamphlets

1. Beaufort County Joint Planning Commission, Subdivision Regulations, Beaufort County, S.C., 1974.
2. Clemson University Cooperative Extension Service, Zoning Law of South Carolina, Agricultural Economics Publication 362, June, 1973.
3. Council of State Governments, The Land Use Puzzle, Lexington, Ky., 1974.
4. Florida House of Representatives, The Constitutional and Legal Limits to the Regulation of Private Land, Seminar Proceedings, January, 1975.
5. Georgetown County Commissioners, Minutes of Meetings, April 1973 - March 1974, Georgetown County, S.C.
6. Georgetown County Planning Commission, Zoning Ordinance, Georgetown County, December, 1973.
7. Georgetown County Planning and Zoning Commission, Minutes of Meetings, January 1973 - April 1974.
8. Grand Strand Flood Commission, Minutes of Meetings, September 1971 - April 1974.
9. Grand Strand Water and Sewer Authority, Minutes of Meetings, September 1971 - April 1974.
10. Isle of Palms, City of, Draft of Proposed Zoning Ordinance, Isle of Palms, S.C., March, 1975.

## LEGAL

### Unsigned Pamphlets (cont'd)

11. Louisiana State University, Center for Wetland Resources, Louisiana Coastal Law, newsletter, Baton Rouge, La.
12. Marine Technology Society, Conference on Tools for Coastal Zone Management, Proceedings; Washington, D.C., February 14-15, 1972.
13. Massachusetts Special Legislative Commission on Marine Boundaries and Resources, 4th Report, 1970 - 9th Report, 1973.
14. Minnesota Outdoor Recreation Review Commission, Public Access in Minnesota, Report No. 3; St. Paul, Minn., 1965.
15. Myrtle Beach City Council, Minutes of Meetings, January 1973 - April 1974, Myrtle Beach, S.C.
16. Myrtle Beach Planning and Zoning Commission, Minutes of Meeting, April 1, 1974.
17. Myrtle Beach Planning and Zoning Commission, Zoning Ordinance of the City of Myrtle Beach, S.C., amended, codified, and reprinted June, 1974.
18. Myrtle Beach Zoning Board of Adjustment, Minutes of Meetings, January 1973 - April 1974.
19. New Hampshire State Planning Project, New Hampshire Public Water Bodies and Public Access Points (Part I), Concord, N.H., August, 1964.
20. New Hampshire State Planning Project, New Hampshire Public Water Bodies and Public Access Points (Part II), Concord, N.H., September, 1965.
21. North Carolina Marine Science Council, North Carolina's Coastal Resources, Raleigh, N.C., N.C. Dept. of Administration, Office of Marine Affairs, 1972.
22. North Myrtle Beach City Council, Minutes of Meetings, January 1973 - April 1974.
23. Oregon Coastal Conservation and Development Commission, Estuary Planning Guidelines, Florence, Ore., 1973.
24. Proposition 20, California Coastal Zone Conservation Act of 1972, November 7, 1972.

LEGAL

Unsigned Pamphlets (cont'd)

25. South Carolina General Assembly, 1971, Act No. 337, H.1396, "To create the Grand Strand Water and Sewer Authority..."
26. South Carolina General Assembly, 1973, Act No. 831, S.614, "To create the Horry County Planning Commission..."
27. South Carolina General Assembly, 1972, Act No. 1822, S.958, "To create the Waccamaw Neck Flood District..."
28. South Carolina General Assembly, 1972, Act No. 1857, H.2727, "To create the Grand Strand Flood District..."
29. South Carolina, Office of the Governor, Office of Planning, and Waccamaw Regional Planning and Development Council, Zoning Ordinance, Surfside Beach, S.C., October, 1973.
30. South Carolina, State Planning and Grants Office, Community Planning Division, Subdivision Regulations, Myrtle Beach, S.C., prepared for the Myrtle Beach Planning Commission, February, 1970.
31. South Carolina, State Planning and Grants Office, Community Affairs Section, Subdivision Regulations, North Myrtle Beach, S.C., prepared for the North Myrtle Beach Planning and Zoning Commission, June, 1971.
32. South Carolina, State Planning and Grants Office, Community Affairs Section, Zoning Ordinance, North Myrtle Beach, S.C., June, 1971.
33. South Carolina Wildlife and Marine Resources Dept., Marine Resources Division, An Application for a Program Development Grant to the Office of Coastal Environment, submitted on behalf of the South Carolina Coastal Zone Planning and Management Council, March 7, 1974.
34. Surfside Beach Board of Adjustment, Minutes, April 1972 - April 1974.
35. Surfside Beach City Council, Minutes, August 1972 - March 1974.
36. Texas Law Institute of Coastal and Marine Resources, The Beaches: Public Rights and Private Use, Conference Proceedings, Galveston, 1972.
37. Texas Law Institute of Coastal and Marine Resources, A Summary of Legislation Relating to the Coastal Zone, A Report Prepared for the Coastal Resources Management Program, Office of the Governor, Galveston, 1972.



# Bibliography

## Part Eight

### LEGAL

#### Unsigned Pamphlets (cont'd)

38. U. S. Army Corps of Engineers, Permits for Work in Navigable Waters, 1968 Regulations.
39. U. S. Commission on Marine Science, Engineering and Resources, Our Nation and the Sea: A Plan for National Action, U. S. Government Printing Office, 1969.
40. U. S. Congress, 89th, 2nd Session, Clean Water Restoration Act of 1966, Public Law 753, 1966.
41. U. S. Congress, 92nd, Coastal Zone Management Act of 1972, Public Law 92-583, October 27, 1972.
42. U. S. Congress, 91st, 2nd Session, Environmental Education Act, Public Law 516, 1970.
43. U. S. Congress, 90th, 2nd Session, Estuaries Inventory Study, Public Law 454, 1968.
44. U. S. Congress, 87th, 1st Session, Federal Water Pollution Control Act Amendments of 1961, Public Law 88, 1961.
45. U. S. Congress, 92nd, Federal Water Pollution Control Act Amendments of 1972, Public Law 92-500, October 18, 1972.
46. U. S. Congress, 89th, 1st Session, Federal Water Project Recreation Act, Public Law 72, 1965.
47. U. S. Congress, 87th, 2nd Session, Fish and Wildlife Conservation Areas, Public Law 714, 1962.
48. U. S. Congress, 87th, 1st Session, Flood Control - Improvement, Public Law 170, 1961.
49. U. S. Congress, 86th, 2nd Session, Flood Control - Land, Public Law 545, 1960.
50. U. S. Congress, 93rd, Flood Disaster Protection Act of 1973, Public Law 92-234, December 31, 1973.
51. U. S. Congress, 88th, 2nd Session, Land and Water Conservation Fund Act of 1965, Public Law 578, 1964.

## LEGAL

### Unsigned Pamphlets (cont'd)

52. U. S. Congress, 90th, 2nd Session, Land and Water Conservation Fund, Public Law 401, 1968.
53. U. S. Congress, 90th, 2nd Session, National Water Commission Act, Public Law 515, 1968.
54. U. S. Congress, 90th, 2nd Session, National Wildlife Refuge System - Disposition of Lands, Public Law 404, 1968.
55. U. S. Congress, 88th, 1st Session, Outdoor Recreation - Federal State Programs, Public Law 29, 1963.
56. U. S. Congress, 89th, 1st Session, Water Quality Act of 1965, Public Law 234, 1965.
57. U. S. Congress, 89th, 1st Session, Water Resources Planning Act, Public Law 80, 1965.
58. U. S. Congress, 90th, 2nd Session, Water Resources Planning Act - Administration, Public Law 547, 1968.
59. U. S. Congress, 88th, 2nd Session, Water Resources Research Act of 1964, Public Law 379, 1964.
60. U. S. Congress, 90th, 2nd Session, Wild and Scenic Rivers Act, Public Law 542, 1968.
61. U. S. Congress, 88th, 2nd Session, Wilderness Act, Public Law 577, 1964.
62. U. S. Dept. of Agriculture, Economic Research Service, Public Access to Public Domain Land: Two Case Studies of Landowner-Sportsman Conflict.
63. U. S. Dept. of Interior, Bureau of Land Management, Draft Environmental Statement, Vol. 1 of 2, 1974.
64. U. S. Dept. of Interior, Guidelines for Evaluating Wild, Scenic and Recreational River Areas for Possible Inclusion in the National Wild and Scenic Rivers System, Washington, D.C., 1970.
65. U. S. Outdoor Recreation Resources Review Commission, Outdoor Recreation for America, 1962.

# Bibliography

## Part Eight

### LEGAL

#### Unsigned Pamphlets (cont'd)

66. U. S. President, Marine Science Affairs, The Report to Congress on Marine Resources and Engineering Development, U. S. Government Printing Office, 1967-1971.
67. U. S. Senate, Committee on Interior and Insular Affairs, Federal Water Project Recreation Act, Report 149, U. S. Government Printing Office, 1965.
68. U. S. Senate, Committee on Interior and Insular Affairs, Papers on National Land Use Policy Issues, prepared by Massachusetts Institute of Technology, Woods Hole Oceanographic Institution, and Boston University, 1971.
69. U. S. Senate, Committee on Public Works, Subcommittee on Flood Control, River and Harbor Flood Control and Beach Erosion Projects in the State of Hawaii, November 18-23, 1968.
70. University of Oregon, The Law Center, The Future Management of the Oregon Coast, Publication ORESU-W-74-001; Corvallis, Ore., Oregon State University, Sea Grant Program, 1974.
71. Waccamaw Neck Flood Commission, Minutes of Meetings, April 1972 - May 1973.
72. Waccamaw Regional Planning and Development Commission, Positive Action Program for the Waccamaw Regional Planning and Development Commission, Publication No. WCCMA-EDA-72-02, prepared for the Economic Development Administration, 1971.
73. Waccamaw Regional Planning and Development Council, Zoning Ordinance, Georgetown County, S.C., prepared for Georgetown County Planning Commission, adopted by County Commissioners, November 16, 1973.
74. Waccamaw Regional Planning Commission, Proposed Horry County Zoning Ordinance.
75. Washington State Legislature, State Financing for Watercraft Related Outdoor Recreation Facilities, Report to Washington State Legislature No. 72-5; Olympia, Wash., 1973.

## LEGAL

### Signed Periodicals

1. Agnello, "Non-resident Restrictions in Municipally Owned Beaches: Approaches to the Problem," Columbia Journal of Law & Social Problems, 10, 1974, pp. 177-227.
2. Armstrong, "Gion v. City of Santa Cruz - Now You Own It, Now You Don't (or the Case of the Reluctant Philanthropist)," Los Angeles Bar Bulletin, 45, 1970, p. 529.
3. Ausnes, "Land Use Controls in Coastal Areas," California Western Law Review, 9, 1973, p. 391.
4. Barker, R. I., "Private Right Versus Public Interest," New Zealand Law Journal, June, 1967, p. 251.
5. Bawe, W. J., "Regional Planning vs. Decentralized Land Use Controls - Zoning for the Megalopolis," DePaul Law Review, 18, Autumn, 1968, p. 144.
6. Beck, R. E., "Governmental Refilling of Lakes and Ponds and the Artificial Maintenance of Water Levels: Must Just Compensation Be Paid to Abutting Landowners?" Texas Law Review, 46, December, 1967, p. 180.
7. Bennett, E. F., "Public Land Policy: Reconciliation of Public Use and Private Development," Rocky Mountain Mineral Law Institute, 11, 1966, p. 311.
8. Berger, "Gion v. City of Santa Cruz: A License to Steal?" California State Bar Journal, 49, 1974, p. 24.
9. Berger, "Nice Guys Finish Last - At Least They Lose Their Property: Gion v. City of Santa Cruz," California Western Law Review, 8, 1971, p. 7.
10. Beuchert, E. W., "State Regulation of Channel Encroachments," Natural Resources Journal, 4, January, 1965, p. 486.
11. Beuscher, J. H., "Current Trends in Wisconsin's Water Law," Wisconsin Bar Bulletin, April, 1967, p. 19.
12. Bicknell, B.A., "Restrictions on Rights of Way," New Law Journal, 116, October, 1966, p. 1451.
13. Bird, R. M., "Tax Subsidy Policies for Regional Development," National Tax Journal, 19, June, 1966, p. 113.

# Bibliography

## Part Eight

### LEGAL

#### Signed Periodicals (cont'd)

14. Black, "Constitutionality of the Eckhardt Open Beaches Bill," Columbia Law Review, 74, 1974, p. 439.
15. Breeden, R.C., "Coastal Controls in California - Wave of the Future", Harvard Journal of Legislation, 11, April, 1974, pp. 463-508.
16. Brion, D.J., "Virginia Natural Resources Law and the New Virginia Wetlands Act", Washington & Lee Law Review, 30, Spring, 1970, p. 19.
17. Broesche, T.C., "Land Use Regulation for the Protection of Public Parks and Recreation Areas", Texas Law Review, 45, November, 1966, p. 96.
18. Bryden, R.M., "Zoning: Frigid, Flexible or Fluid", Journal of Urban Law, 44, Winter, 1966, p. 287.
19. Buchanan, G.S., "Texas Navigation Districts and Regional Planning in the Texas Gulf Coast Area", Houston Law Review, 10, March, 1973, p. 533.
20. Burka, "Shoreline Erosion: Implications for Public Rights and Private Ownership", Coastal Zone Management, 1, 1974, p. 175.
21. Caldwell, "Rights of Ownership or Rights of Use? The Need for a New Conceptual Basis for Land Use Policy", William & Mary Law Review, 15, 1974, p. 759.
22. Chapman, V.J., "Coastal Land Management Act in New Zealand", Coastal Zone Management Journal, 1, November 3, 1974, pp. 333-45.
23. Chenoweth, D.R., "Defense for a Shoreline", Water Spectrum, 6, November 3, 1974, pp. 41-46.
24. Clark, R.E., "Groundwater Management: Law and Legal Response", Arizona Law Review, 6, Spring, 1965, p. 178.
25. Clineberg, W.A., and J.E. Krahmer, "Law Pertaining to Estuarine Lands in South Carolina", South Carolina Law Review, 23, 1971, p. 7.
26. Clyde, E.W., "Mineral Rights Versus Water Rights", Natural Resources Law, 2, November, 1969, p. 299.

## LEGAL

### Signed Periodicals (cont'd)

27. Cohen, "The Constitution, The Public Trust Doctrine and The Environment", Utah Law Review, 1970, p. 388.
28. Corker, C.E., "Thou Shalt Not Fill Public Waters Without Public Permission - Washington's Lake Chelan Decision (Wilbour v. Gallagher)", Washington Law Review, 45, 1970, p. 65.
29. Corker, "Where Does the Beach Begin and to what Extent Is This a Federal Question", Washington Law Review, 42, 1966, p. 33.
30. Costonis, J.J., "Development Rights Transfer: An Exploratory Essay", Yale Law Journal, 83, November, 1973, pp. 75-128.
31. Courdert, "Riparian Rights: A Perversion of Stave Decisis", Columbia Law Review, 9, 1909, p. 217.
32. Crooks, G., "Washington Shoreline Management Act of 1971", Washington Law Review, 49, February, 1974, pp. 423-62.
33. Curtin, P.J., Jr., "Preservation of Open Space in California: Associated Home Builders v. City of Walnut Creek", Los Angeles Bar Bulletin, 47, January, 1972, p. 108.
34. Curtin, "Requiring Dedication of Land by Developers", Planning, Zoning, and Eminent Domain Institute, 1974, p. 57.
35. Dau, R.W., "Problems in Condemnation of Property Devoted to Public Use", Texas Law Review, 44, October, 1966, p. 1517.
36. David, "The New York Law of the Foreshore at the Beginning of the 18th Century", Cornell Law Quarterly, 11, 1926, p. 209.
37. Degran, D.A., "Public Rights in Ocean Beaches: A Theory of Prescription", Syracuse Law Review, 24, Summer, 1973, pp. 935-66.
38. Deloqu, O.E., "Land Use Control Principles Applied to Offshore Coastal Waters", Kentucky Law Journal, 59, Spring, 1971, p. 606.
39. Dinkins, "Texas Seashore Boundary Law: The Effect of Natural and Artificial Modifications", Houston Law Review, 10, 1972, p. 43.

# Bibliography

## Part Eight

### LEGAL

#### Signed Periodicals (cont'd)

40. Dominy, F.E., "Federal and State Cooperation in the Development of the Water Resources of California", American Water Works Association Journal, 55, April, 1963, pp. 461-66.
41. Due, M.J.C., "Access over Public Lands", Rocky Mountain Mineral Law Institute, 17, 1972, p. 171.
42. Dunham, A., "Promises Respecting the Use of Land", Journal of Law and Economics, 8, October, 1965, p. 133.
43. Eckhart, "A Rational Policy on Public Use of Beaches", Syracuse Law Review, 24, 1973, p. 967.
44. Eckhart, R.C., "Open Beaches: Bill in Congress Based on Texas Law", Parks and Recreation, 51, August, 1970, pp. 21-3+.
45. Eckert, R.J., "Acquisition of Development Rights: A Modern Land-Use Tool", University of Miami Law Review, 23, Winter-Spring, 1969, p. 347.
46. Eikel, M.A. and W.S. Williams, "Public Trust Doctrine and the California Coastline", Urban Lawyer, 6, Summer, 1974, pp. 519-71.
47. Ellis, Harold H., "Water Law in Eastern United States", Journal of Soil and Water Conservation, 18, 1963, pp. 19-27.
48. Emory, B., "Protecting a Heritage: Maine Coast Heritage Trust Conservation Easement Program", Yachting, 133, April, 1973, p. 88.
49. Eveleth, P.A., "An Appraisal of Techniques to Preserve Open Space", Villanova Law Review, 9, 1964, p. 559.
50. Eveleth, P.A., "New Techniques to Preserve Areas of Scenic Attraction in the Established Rural-Residential Communities - the Lake George Approach", Syracuse Law Review, 18, Fall, 1966, p. 37.
51. Fell, A.T., "Amortization of Non-Conforming Uses", Maryland Law Review, 24, Summer, 1964, p. 323.
52. Finnell, G.L., Jr., "Saving Paradise: The Florida Environmental Land and Water Management Act of 1972", Urban Law Annual, 173, 1973, p. 103.

## LEGAL

### Signed Periodicals (cont'd)

53. Forer, "Preservation of America's Park Lands: The Inadequacy of Present Law", New York University Law Review, 41, 1966, p. 1093.
54. Foster, W.F., "New Zealand's Coastal Jurisdiction", California Western International Law Journal.
55. Fraser, "Title to Soil Under Public Waters - A Question of Fact", Minnesota Law Review, 2, 1918, p. 313.
56. Gallagher, Jure, and Agnew, "Implied Dedication: The Imaginary Waves of Gion-Dietz", Southwestern University Law Review, 5, 1973, p. 48.
57. Garner, J.F., "Restrictive Covenants and Easements", Solicitors' Journal, 110, November 18, 1966, p. 860.
58. Gaudet, Joseph B., "Water Recreation-Public Use of Private Waters", California Law Review, March, 1964, pp. 171-84.
59. Gay, "High Water Mark: Boundary Between Public and Private Lands", University of Florida Law Review, 18, 1966, p. 553.
60. Gibson, W.L., Jr., "Zoning and Land Use in Rural Virginia", University of Virginia News Letter, 42, April 15, 1966, pp. 29-32.
61. Gifford, K.D., "Islands Trust: Leading Edges in Land Use Laws", Harvard Journal of Legislation, 11, April, 1974, pp. 417-61.
62. Gilmour, Robert S., "Private Interests and Public Lands", Current History, 59, July, 1970, pp. 36-42+.
63. Glenn, "The Coastal Area Management Act in the Courts: A Preliminary Analysis", North Carolina Law Review, 53, 1974, p. 303.
64. Greene, W.A., "Positive Covenants Affecting Land", Law Journal, 115, September 10, 1965, p. 605.
65. Gregg, F., "Wilderness and the Land and Water Conservation Fund Act: Outdoor Enjoyment", Living Wilderness, 29, Summer, 1965, pp. 25-8.
66. Gremillion, J.P., "Current View of the Tidelands Dispute", Institute on Mineral Law, 12, 1965, p. 17.



# Bibliography

## Part Eight

### LEGAL

#### Signed Periodicals (cont'd)

67. Gross, A.D., "Condemnation of Water Rights for Preferred Uses - A Replacement for Prior Appropriation?", Willamette Law Journal, 3, Fall, 1965, p. 263.
68. Haari, C.M. (Foreword), "Land-Use Symposium", Iowa Law Review, 50, Winter, 1965, p. 243.
69. Hagman, D.G., "Single Tax and Land-Use Planning: Henry George Updated", UCLA Law Review, 12, March, 1965, p. 762.
70. Harmsberger, R.S., "Eminent Domain and Water Law", Nebraska Law Review, 48, January, 1969, p. 325.
71. Heard, J.G., "Tax Aspects of Tidelands Operations", Oil and Gas Law and Taxation Institute, 15, 1964, p. 577.
72. Heath, M.S., Jr., "Estuarine Conservation Legislation in the States", Land and Water Law Review, 4, 1970, p. 351.
73. Hershman, M., "Lender Looks at Land Use Controls: The Wonder World of Fixed and Floating Zones, Subdivision Regulations and Master Plans", Practical Lawyer, 12, December, 1966, p. 11, and 13, January, 1967, p. 51.
74. Heyman and Gilhool, "The Constitutionality of Imposing Increased Community Costs on New Suburban Residents Through Subdivision Exactions", Yale Law Journal, 73, June, 1964, p. 1119.
75. Heyman, I.M. and R.H. Twiss, "Environmental Management of the Public Lands", California Law Review, 58, November, 1970, pp. 1364-1411.
76. Hillhouse, W.A., "Water Rights", Annual Survey of American Law, Winter, 1974, pp. 255-64.
77. Hirsch, W.Z. and D.C. Shapiro, "Some Economic Implications of City Planning", UCLA Law Review, 14, August, 1967, p. 1312.
78. Hocht, L.S., "Benefits to the Property Owner as Affecting Assessments for Improvements to Real Estate", Pennsylvania Bar Association Quarterly, 36, June, 1965, p. 399.

## LEGAL

### Signed Periodicals (cont'd)

79. Horebeck, John Miles, "Titles to Marshlands in South Carolina", South Carolina Law Quarterly, 14, 1962, p. 288.
80. Hubbard, K.D., "Ah Wilderness! (but what about access and prospecting?)", Rocky Mountain Mineral Law Institute, 15, 1969, p. 585.
81. Hustace, C., "Free Outdoor Recreational Areas for Missouri - A Law Limiting Landowners' Liability", Missouri Bar Journal, 28, August, 1969, p. 423.
82. Jackson, H.A. and A. Baum, "Regional Planning: The Coastal Zone Initiative Analyzed in Light of the BCDC Experience", California State Bar Journal, 47, September-October, 1972, p. 426.
83. Jackson, P., "Equitable Easements", Conveyancer & Property Lawyer, 33, March-April, 1969, p. 135.
84. Jackson, P., "Reviewing our Public Land Policies", Current, 127, March, 1971, pp. 24-8.
85. Jackson, R., "Recreation Zoning and Lake Planning", Town Planning Review, 43, March, 1972, pp. 41-55.
86. Jackson, R., "Zoning to Regulate On-Water Recreation", Land Economist, 47, November, 1971, pp. 382-8.
87. Jacobson, "Expropriation by Forced Dedication: The Problem of Uncompensated Public Takings of Private Lands", Journal of Beverly Hills Bar Association, 6, January-February, 1972, p. 10.
88. Janney, "Recreational Beaches: The Right to a Scarce Resource", Maryland Law Forum, 3, 1973, p. 121.
89. Johnson, Ralph W. and Russel A. Austin, "Recreational Rights and Titles to Beds on Western Lakes and Streams", Natural Resources, 7, January, 1967, pp. 1-52.
90. Johnson, R.W. and G.P. Morry, "Filling and Building on Small Lakes - Time for Judicial and Legislative Controls", Washington Law Review.
91. Johnston, "Constitutionality of Subdivision Control Exactions: The Quest for a Rationale", Cornell Law Quarterly, 52, 1967, p. 871.

# Bibliography

## Part Eight

### LEGAL

#### Signed Periodicals (cont'd)

92. Johnston, J.D., Jr., "Developments in Land Use Control", Notre Dame Lawyer, 45, Spring, 1970, p. 399.
93. Jones, R.P., "Tax Problems of Real Estate Developers - From Acquisition through Disposition", Journal of Taxation, 24, January, 1966, p. 32.
94. Jordahl, Harold C., Jr., "Conservation and Scenic Easements, As Experience Resume", Land Economics, 39, November, 1963, p. 343.
95. Joseph, C., "Betterment Levy and Residential Development", New Law Journal, 116, June 9, 1966, p. 911.
96. Joseph, C., "Informal Approach to Planning", Law Society's Gazette, 63, pp. 429-95.
97. Joseph, C., "Town and Country Planning Act. 1968", Law Society's Gazette, 66, January-February, 1969, p. 32.
98. King, B.E., "Condemnation Quandary: Public Use and Necessity - The Impact of Decisions in Recent Years", Los Angeles Bar Bulletin, 41, July, 1966, p. 405.
99. Knibb, "National Recreation Areas: Evolving Legislative Answer to Land Use Conflicts", Lincoln Law Review, 6, 1970, p. 1.
100. Knight, H.G., "Proposed Systems of Coastal Zones Management: An Interim Analysis", Natural Resources Lawyer, 3, November, 1970, p. 599.
101. Knox, Andrew, "Coastal Zoning Laws", Ripon Forum, 9, December, 1973, pp. 6-7.
102. Kratovil, R., "Easements and Leases", Title News, 45, April, 1966, p. 2.
103. Kratovil, R., "Some New Developments and Trends in Real Property Law", Title News, 43, August, 1964, p. 2.
104. Kreuger, R.B., "Recreationally-Oriented Land Development", Real Property, Probate and Trust Journal, 3, Fall, 1962, p. 353.

## LEGAL

### Signed Periodicals (cont'd)

105. Kusler, "Open Space Zoning: Valid Regulation or Invalid Taking", Minnesota Law Review, 57, 1972, p. 1.
106. Land, Alan E., "Toward Optimal Land Use: Property Tax Policy and Land Use Planning", California Law Review, 55, August, 1967, pp. 856-97.
107. Landstrom, K.S., "Citizen Participation in Public Land Decisions", St. Louis University Law Journal, 9, Spring, 1965, p. 372.
108. Lauer, T.E., "Reflections on Riparianism", Missouri Law Review, 35, Winter, 1970, p. 1.
109. Lawton, P., "New System for Taxing Property", Solicitor's Journal, 109, January-February, 1966, pp. 3, 20, 42, 62, 84, 100.
110. Ledbetter, W.H., Jr., "Subdivision Control in South Carolina", South Carolina Law Review, 24, 1972, p. 155.
111. Leighty, "The Source and Scope of Public and Private Rights in Navigable Waters", Land & Water Law Review, 5, 1970, p. 391.
112. Levin, "Environmental Quality and Public Land Acquisition", Zoning and Eminent Domain Institute, 1971, p. 155.
113. Levin, D.R., "New Directions in Land Acquisition and Land Use", Wisconsin Law Review, 1969, 1969, p. 848.
114. Lewis, "Capsule History and the Present Status of the Tidelands Controversy", Natural Resources Law, 3, 1970, p. 620.
115. Limerick, G.F., "Effects of Zoning on Valuation in Eminent Domain", Illinois Bar Journal, 53, July, 1965, p. 956.
116. Long, C.C., "Surface Waters and the Civil Law Rule", Emory Law Journal, 23, Fall, 1974, pp. 1015-46.
117. Lundberg, W., "Restrictive Covenants and Land Use Control: Private Zoning", Montana Law Review, 34, Summer, 1973, p. 197.
118. Lyall, F., "Recreation, Land Ownership and the Countryside", Juridical Review, 1970, December, 1970, p. 203.

# Bibliography

## Part Eight

### LEGAL

#### Signed Periodicals (cont'd)

119. Lynch, J.J.D., Jr., "Riparian Title in Pennsylvania", Pennsylvania Bar Association Quarterly, 41, January, 1970, p. 224.
120. MacDonald, "Shoreland Zoning in Maine", Coastal Zone Management Journal, 1, 1973, pp. 109-14.
121. Maloney and Ausness, "The Use and Legal Significance of the Mean High Water Line in Coastal Boundary Mapping", North Carolina Law Review, 53, 1974, p. 185.
122. Mandelker and Sherry, "The National Coastal Zone Management Act of 1972", Urban Law Annual, 7, 1974, p. 119.
123. McAuliffe, J.W., and F.S. Sengstock, "What is the price of eminent domain? An introduction to the problems of valuation in eminent domain proceedings.", Journal of Urban Law, 44, Winter, 1966, p. 185.
124. McKnight, "Title to Land in the Coastal zone", California State Bar Journal, 47, 1972, p. 408.
125. McLennan, "Public Patrimony: An Appraisal of Legislation and Common Law Protecting Recreational Values in Oregon's State-Owned Lands and Waters", Environmental Law, 4, 1974, p. 317.
126. Merling, T.R., "Conflict of Planning Legislation with Private Interests: Litigation Likely to Arise from the Implementation of a Planning Scheme", University of Western Australia Law Review, 9, December, 1970, p. 303.
127. Michelman, F.I., "Property, Utility and Fairness: Comments on the Ethical Foundations of 'Just Compensation' Law", Harvard Law Review, 80, April, 1967, p. 1165.
128. Milner, J.B., "Introduction to Subdivision Control Legislation", Canadian Bar Review, 43, p. 49.
129. Milner, J.B., "Lawyer's Role in Land-Use Planning", Alberta Law Review, 5, 1967, p. 119.
130. Mix, A.Q., "Restricted Use Assessment in California: Can It Fulfill its Objectives?", Santa Clara Lawyer, 11, Spring, 1971, p. 259.

## LEGAL

### Signed Periodicals (cont'd)

131. Mondelker, D.R., "National Coastal Zone Management Act of 1972", Urban Law Annual, 7, 1974, pp. 119-37.
132. Montgomery, "The Public Trust Doctrine in Public Land Law: Its Application in the Judicial Review of Land Classification Decisions", Willamette Law Journal, 8, 1972, p. 135.
133. Moore, "The Acquisition and Preservation of Open Lands", Washington and Lee Law Review, 1966, p. 274.
134. Morrison, F.A., "Land Use Planning and the Natural Resources Industry", Rocky Mountain Mineral Law Institute, 18, 1973, pp. 135-47.
135. Moses, R.J., "Water as a Tool for Recreational Land Use Planning", Syracuse Law Review, 24, Summer, 1973, pp. 1047-56.
136. Nelson, "State Disposition of Submerged Lands Versus Public Rights in Navigable Waters", Natural Resources Law, 3, 1970, p. 491.
137. Nenck, E., Jr., "Coastal Waters and the Nation: Address", Vital Speeches, 35, March 15, 1969, pp. 349-52.
138. Newson, M.D., "Zoning for Beauty", New England Law Review, 5, Fall, 1969, p. 1.
139. Nicoson, William J., "Land Use Controls: In Search of the Public Interest", Urban Land, 31, February, 1972, pp. 11-15.
140. Parsons, "Public and Private Rights in the Foreshore", Columbia Law Review, 22, 1922, p. 706.
141. Pearl, Milton A., "Historical View of Public Land Disposal and the American Land Use Pattern", California Western Law Review, 4, Spring, 1968, pp. 45-75.
142. Pearl, M.A., "Public Land Policy: A Time for Review", State Government, 39, pp. 138-46.
143. Plater, Z.J.B., "Takings Issue in a Natural Setting: Floodlines and the Police Power", Texas Law Review, 52, January, 1974, pp. 201-56.

# Bibliography

## Part Eight

### LEGAL

#### Signed Periodicals (cont'd)

144. Platt, G.M., "Valid Spot Zoning: A Creative Tool for Flexibility of Land Use", Oregon Law Review, 48, April, 1969, p. 245.
145. Poole, R.E., "Restrictive Covenants", New Law Journal, 117, June 19, 1969, p. 583.
146. Porro, A.A., Jr., and L.S. Toleky, "Marshland Title Dilemma: A Tidal Phenomenon", Seton Hall Law Review, 3, Spring, 1972, p. 323.
147. Porro, "Invisible Boundary--Private and Sovereign Marshland Interests", Natural Resources Law, 3, 1970, p. 512.
148. Reilly, W.K., "New Directions in Federal Land Use Regulation", Urban Law Annual, 1973, p. 29.
149. Reis, "Policy and Planning for Recreational Use of Inland Water", Temple Law Quarterly, 40, 1967, p. 155.
150. Reps, "The Zoning of Undeveloped Areas", Syracuse Law Review, 3, 1952, p. 292.
151. Rice, "Estuarine Land of North Carolina: Legal Aspect of Ownership, Use and Control", North Carolina Law Review, 46, 1968, p. 779.
152. Riggs, "The Alienability of the State's Title to the Foreshore", Columbia Law Review, 12, 1912, p. 395.
153. Roberts, "The Luttet Case: Locating the Boundary of the Seashore", Baylor Law Review, 12, 1960, p. 141.
154. Ryekman, W.E., Jr., "The Use of Property is Invalid as a Taking Without Compensation", Natural Resources Journal, 6, January, 1966, p. 8.
155. Samuels, A., Public Law, 1969, Spring, 1969, p. 19.
156. Sax, "Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention", Michigan Law Review, 68, 1970, p. 473.
157. Schoenbaum, "The Management of Land and Water Use in the Coastal Zone: A New Law is Enacted in North Carolina", North Carolina Law Review, 53, 1974, p. 275.

## LEGAL

### Signed Periodicals (cont'd)

158. Schoenbaum, T.J., "Public Rights and Coastal Zone Management", North Carolina Law Review, 51, November, 1972, p. 1.
159. Schroeder, M.R., "Public Regulation of Private Land Use in Arizona: An Analysis of its Scope and Potential", Law and the Social Order, 1973, pp. 747-814.
160. Searles, S.Z., "Aesthetics and the Law", New York State Bar Journal, 41, April, 1969, p. 210.
161. Searles, S.Z., "Highest and Best Use: The Keystone of Valuation in Eminent Domain", New York State Bar Journal, 45, January, 1973, p. 36.
162. Shavelson, "Gion v. City of Santa Cruz - Where Do We Go From Here?", California State Bar Journal, 47, 1972, p. 415.
163. Silverstone, S., "Open Space Preservation Through Conservation Easements", Osgoode Hall Law Journal, 12, May, 1974, pp. 105-24.
164. Simonton, "Ways by Necessity", Columbia Law Review, 25, 1925, p. 571.
165. Stoebuck, W.B., "Condemnation of Riparian Rights: A Species of Taking Without Touching", Louisiana Law Review, 30, April, 1970, p. 394.
166. Stone, Albert W., "Legal Background on Recreational Use of Montana Waters", Montana Law Review, 32, Winter, 1971, p. 1.
167. Stone, Albert W., "Recreational Use of Montana Waters: A Legal Background", Montana Business Quarterly, 7, Winter, 1971, pp. 38-48.
168. Strauss, P.C., "New York Wild, Scenic and Recreational River System Act", Urban Law Annual, 1973, p. 137.
169. Sussna, S., "New Tools for Open Space Preservation", Urban Lawyer, 2, Winter, 1970, p. 87.
170. Tarlock, A.D., "Preservation of Scenic Rivers", Kentucky Law Journal, 55, Summer, 1967, p. 745.
171. Tarlock, A.D. and R. Tippy, "Wild and Scenic Rivers Act of 1968", Cornell Law Review, 55, May, 1970, p. 707.



# Bibliography

## Part Eight

### LEGAL

#### Signed Periodicals (cont'd)

172. Taylor, "The Seashore and the People", Cornell Law Quarterly, 10, 1925, p. 303.
173. Taylor, P.S., "Water, Land and Environment, Imperial Valley: Law Caught in the Winds of Politics", Natural Resources Journal, 13, January, 1973, p. 1.
174. Teclaff, L.A., "Coastal Zone - Control Over Encroachments to the Tide-waters", Journal of Maritime Law, 1, January, 1970, p. 241.
175. Teclaff and Teclaff, "Saving the Land-Water Edge from Recreation, for Recreation", Arizona Law Review, 14, 1972, p. 39.
176. Tilden, R.J., "Public Inducements for Industrial Location: A Lesson from Massachusetts", Maine Law Review, 18, 1966, p. 1.
177. Tiley, J., "Easements, Options and Perpetuities", Solicitors' Journal, 110, 1966, pp. 694, 720.
178. Tillinghast, "Tide-Flowed Lands and Riparian Rights in the United States", Harvard Law Review, 18, 1905, p. 341.
179. Tindall, F.P., "The Care of a Coastline (East Lothian County, Scotland)" and "Strategic Planning for the Coast: The Example of Cornwall", Town Planning Institute Journal, 53, November, 1967, pp. 387-97.
180. Town, M.A. and W.W.L. Yuen, "Public Access to Beaches in Hawaii: A Social Necessity", Hawaii Bar Journal, 10, Spring, 1973, p. 5.
181. Vaughn, G.F., "In Search of Standards for Preserving Open Space", Public Administration Review, 24, December, 1969, p. 259.
182. Vines, William R., "Florida Beach Resources Management Needs", Florida Planning & Development, 18, June, 1967, pp. 1+.
183. Waite, G.G., "Beneficial Use of Water in a Riparian Jurisdiction", Wisconsin Law Review, 1969, p. 864.
184. Waite, G.G., "The Dilemma of Water Recreation and a Suggested Solution", Wisconsin Law Review, 1958, p. 542.

## LEGAL

### Signed Periodicals (cont'd)

185. Waite, G.G., "Public Rights in Maine Waters", Maine Law Review, 1965, reprint.
186. Waite, "Public Rights to Use and Have Access to Navigable Waters", Wisconsin Law Review, 1958, p. 335.
187. Walnut, A. and S. Sussna, "Dune Protection Ordinance", American City, 80, October, 1965, pp. 105-6.
188. Wershaw, J.S., "Ad Valorem Taxes in Florida - Whither Now?", University of Florida Law Review, 18, Summer, 1965, p. 9.
189. Wharam, Alan, "The Seashore", Journal of Planning and Environmental Law, December, 1974, pp. 705-13.
190. Wiel, "Natural Communism: Air, Water, Oil, Sea, and Seashore", Harvard Law Review, 1934, p. 425.
191. Williams, N., Jr., "Three Systems of Land Use Control", Rutgers Law Review, 25, Fall, 1970, p. 80.
192. Winters, J.M., "Environmentally Sensitive Land Use Regulation in California", San Diego Law Review, 10, June, 1973, pp. 693-756.
193. Wolff, A., "We Shall Fight Them on the Beaches: Controversy Over Free Public Access", Harper's Magazine, 247, August, 1973, pp. 55-8.
194. Yiannopoulos, "Public Use of the Banks of Navigable Rivers in Louisiana", Louisiana Law Review, 31, 1971, p. 563.
195. Zipser, H.A., "Zoning Classification and Eminent Domain", Urban Lawyer, 1, Spring, 1969, p. 89.

# Bibliography

## Part Eight

### LEGAL

#### Unsigned Periodicals

1. "Access to Public Lands Across Intervening Private Lands", Land & Water Law Review, 8, 1973, p. 149.
2. "Access to Public Municipal Beaches: The Formulation of a Comprehensive Legal Approach", Suffolk University Law Review, 7, 1973, p. 936.
3. "Acquisitions of Easements by the Public Through Use", San Diego Law Review, 16, Winter, 1971, p. 150.
4. "Act to Provide Compensation for Loss of Good Will Resulting From Eminent Domain Proceedings", Harvard Journal on Legislation, 3, May, 1966, p. 445.
5. "Ad Valorem Taxes - Omitted Property and Improvement Assessments", Natural Resources Journal, 6, January, 1966, p. 105.
6. "Aesthetic Considerations in Land Use Planning", Albany Law Review, 35, 1970, p. 126.
7. "Aesthetics vs. Free Enterprise: A Symposium", Practical Lawyer, 15, February, 1969, p. 17.
8. "Aesthetic Zoning: A Current Evaluation of the Law", University of Florida Law Review, 13, Winter, 1966, p. 430.
9. "Aluvion, Islands and Sand Bars", Tulane Law Review, 47, February, 1973, p. 367.
10. "Area of Critical State Concern: Its Potential for Effective Regulation", University of Florida Law Review, 26, Summer, 1974, p. 858.
11. "Are Water Rights Marketable in Wisconsin?", Wisconsin Law Review, 1966, p. 942.
12. "Battle of the Beaches: Question of Territorial Rights", Newsweek, 80, August 14, 1972, p. 70.
13. "Bibliography of Materials on the Law of Zoning", Tulsa Law Journal, 4, January, 1967, p. 118.
14. "Bibliography of Recent Books and Periodicals", Natural Resources Lawyer, 3, May, 1970, p. 357.

LEGAL

Unsigned Periodicals (cont'd)

15. "Big Squeeze: California's Comprehensive Shoreline Regulation", Architectural Forum, 138, May, 1969, p. 16.
16. "California Beach Access: The Mexican Law and the Public Trust", Ecology Law Quarterly, 2, 1972, p. 571.
17. "Californians Need Beaches - Maybe Yours!", San Diego Law Review, 7, July, 1970, p. 605.
18. "California Surface Water Law", Hastings Law Journal, 17, May, 1966, p. 826.
19. "California's Tidelands Trust for Modifiable Public Purposes", Loyola University Law Review (LA), 6, September, 1973, p. 485.
20. "California's Tideland Trust: Shoring It Up", Hastings Law Journal, 22, February, 1971, p. 759.
21. "Coastal Area Management Act in the Courts: A Preliminary Analysis", North Carolina Law Review, 53, December, 1974, p. 303.
22. "Coastal Commissions: What Have They Done?", California Journal, 4, November, 1973, p. 377.
23. "Coastal Controls in California: Wave of the Future?", Harvard Journal of Legislation, 11, 1974, p. 463.
24. "Coastal Land Use Development: A Proposal for Cumulative Area-Wide Zoning", North Carolina Law Review, 49, 1971, p. 866.
25. "Coastal Wetlands in New England", Boston University Law Review, 52, 1972, p. 724.
26. "Coastal Zone Management--The Tidelands: Legislative Apathy vs. Judicial Concern", San Diego Law Review, 8, 1971, p. 695.
27. "Coastal Zoning", The Vanderbilt International, 4, Spring, 1971, p. 127.
28. "Coastline Crisis", Pacific Law Journal, 2, January, 1971, p. 226.

# Bibliography

## Part Eight

### LEGAL

#### Unsigned Periodicals (cont'd)

29. "Common Law Doctrine of Implied Dedication and Its Effect on the California Coastline Property Owner: Gion v. City of Santa Cruz", Loyola University (LA) Law Review, 2, 1971, p. 438.
30. "Compensation for the Right of Access to Navigable Waters", Washington and Lee Law Review, 26, Spring, 1967, p. 136.
31. "Comprehensive Planning: Only as Certain as Your Survival", Hawaii Bar Journal, 8, April, 1971, p. 15.
32. "Constitutional Revision--Water Rights", National Resources Journal, 9, July, 1969, p. 471.
33. "Constitutional Sanctity of a Property Interest in a Riparian Right", Washington University Law Quarterly, Summer, 1969, p. 327.
34. "Conveyances of Sovereign Lands Under Public Trust Doctrine: When Are They in the Public Interest?", University of Florida Law Review, 24, 1972, p. 285.
35. "County Regulation of Land Use and Development", Natural Resources Journal, 9, April, 1969, p. 266.
36. "Debate Over Delaware's Tough Coastal Use Law", Business Week, March 2, 1974, p. 71.
37. "Decision Making Process for the California Coastal Zone", Southern California Law Review, 46, March, 1973, p. 513.
38. "Deeds: Covenants and Conditions", Baylor Law Review, 16, Spring, 1964, p. 147.
39. "Dilemma of Preserving Open Space: How to Make Californians an Offer They Can't Refuse", Santa Clara Lawyer, 13, Winter, 1972, p. 284.
40. "Does Public User Give Rise to a Prescriptive Easement or Is It Merely Evidence of Dedication", Texas Law Review, 6, 1928, p. 365.
41. "Draft of Model Eminent Domain Code", Real Property, Probate and Trust Journal, 2, Fall, 1967, p. 365.

## LEGAL

### Unsigned Periodicals (cont'd)

42. "Easement: Tool or Trap for the Land-Use Planner?", New York University Law Review, 21, November, 1967, p. 42.
43. "Easements: Judicial and Legislative Protection of the Public's Rights in Florida's Beaches", University of Florida Law Review, 25, 1973, p. 586.
44. "Easements of Necessity to Reach Public Lands", Wyoming Law Journal, 13, 1958, p. 51.
45. "Easements to Preserve Open Space Land", Ecology Law Quarterly, 1, Fall, 1971, p. 728.
46. "Ecological and Legal Aspects of Flood-Plain Zoning", Kansas Law Review, 20, Winter, 1972, p. 268.
47. "Elimination of Non-Conforming Uses: Alternatives and Adjuncts to Amortization", UCLA Law Review, 14, November, 1966, p. 354.
48. "Eminent Domain and the Environment", Cornell Law Review, 56, April, 1971, p. 651.
49. "Eminent Domain - Ecological Considerations and the Control of Land", Suffolk University Law Review, 5, Spring, 1971, p. 1079.
50. "Eminent Domain - The Meaning of the Term 'Public Use' - Its Effect on Excess Condemnation", Mercer Law Review, 18, Fall, 1966, p. 274.
51. "Eminent Domain: Providing Highest and Best Use of Undeveloped Land in Utah", Utah Law Review, Winter 1973, p. 705.
52. "Enforcing the Coastal Act - Citizens' Suits and Attorneys' Fees", California State Bar Journal, 49, May-June, 1974, p. 236.
53. "English Doctrine of Custom in Oregon Property Law: State ex. rel. Thornton v. Hay", Environmental Law, 4, 1974, p. 383.
54. "Environment Control: A Symposium", Denver Law Journal, 45, Spring, 1968, p. 145.
55. "Environmental Control: Guide or Roadblock to Land Development: A Symposium", Villanova Law Review, 19, May, 1974, p. 703.

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# Bibliography

## Part Eight

### LEGAL

#### Unsigned Periodicals (cont'd)

56. "Environmental Land Use Control: Common Law and Statutory Approaches", University of Miami Law Review, 28, Fall, 1973, p. 135.
57. "Environmental Law - Expanding the Definition of Public Trust Uses", North Carolina Law Review, 51, 1972, p. 316.
58. "Environmental Law - Wetland Fill Restrictions Do Not Constitute A Compensable 'Taking' Within the Meaning of the 5th Amendment", Seton Hall Law Review, 4, Spring, 1973, p. 662.
59. "Fishing and Recreational Rights in Iowa Lakes and Streams", Iowa Law Review, 53, June, 1968, p. 1322.
60. "Floodplain Zoning in California Open Space by Another Name: Policy and Practicality", San Diego Law Review, 70, 1973, p. 381.
61. "Florida Constitution and Legislative Clarification for Tax Assessment Purposes", University of Florida Law Review, 17, Spring, 1965, p. 609.
62. "Florida's Sovereignty Submerged Lands: What Are They, Who Owns Them and Where Is the Boundary?", Florida State Law Review, 1, 1973, p. 596.
63. "Fluctuating Shorelines and Tidal Boundaries: An Unresolved Problem", San Diego Law Review, 6, 1969, p. 447.
64. "Forced Dedications in California", Hastings Law Journal, 20, January, 1969, p. 755.
65. "Forest Taxation in Maine: A Proposal", Maine Law Review, 21, 1969, p. 109.
66. "Government Control of Land: Protecting the I-know-it-when-I-see-it Interest", Northwestern University Law Review, 62, July-August, 1967, p. 428.
67. "Hawaiian Beach Access: A Customary Right", Hastings Law Journal, 2, 1975, p. 823.
68. "Implied Dedication: A Threat to the Owners of California's Shoreline", Santa Clara Lawyer, 11, Spring, 1971, p. 327.

## LEGAL

### Unsigned Periodicals (cont'd)

69. "Improved Policy Making for the Multiple Use of Public Lands", University of Michigan Journal of Law Reform, 5, Spring, 1972, p. 485.
70. "Lake Tahoe: The Future of a National Asset - Land Use, Water and Pollution", California Law Review, 52, August, 1969, p. 563.
71. "Land Planning and the Law: Emerging Policies and Techniques - A Symposium", UCLA Law Review, 12, March, 1965, p. 707.
72. "Land Subdivision Regulation: Its Effects and Constitutionality", St. John's Law Review, 41, January, 1967, p. 374.
73. "Land Use, Aesthetics and the State Legislature", Wayne Law Review, 19, November, 1972, p. 73.
74. "Land Use - Mandatory Dedication for Park and Recreational Facilities", Arkansas Law Review, 26, 1972, p. 415.
75. "Land Use Regulation for Protection of Public Parks and Recreational Areas", Texas Law Review, 45, 1966, p. 45.
76. "Land Use - Wetlands Regulation", Arkansas Law Review, 27, Fall, 1973, p. 527.
77. "Large Lot Zoning", Yale Law Journal, 78, July, 1969, p. 1418.
78. "Legal Methods of Historic Preservation", Buffalo Law Review, 19, Spring, 1970, p. 611.
79. "Legislation Concerning Public Access to Private Roads - From the Point of View of a Forest Company", University of British Columbia Law Review, 3, March, 1967, p. 275.
80. "Legislation - The Delaware Coastal Zone Act", Buffalo Law Review, 21, Winter, 1972, p. 481.
81. "Legislation to Preserve and Control Open Space Land", Harvard Journal of Legislation, 6, November, 1968, p. 57.
82. "Man's Activities in Watershed Areas - A Need for Planning", Environmental Law, 4, Winter, 1974, p. 229.



# Bibliography

## Part Eight

### LEGAL

#### Unsigned Periodicals (cont'd)

83. "Maryland's Wetlands: The Legal Quagmire", Maryland Law Review, 30, 1970, p. 250.
84. "Michigan's Citizen Participation Statute", Urban Law Annual, 1970, p. 231.
85. "Mississippi Public Trust Doctrine: Public and Private Rights in the Coastal Zone", Mississippi Law Journal, 46, Winter, 1975, p. 84.
86. "Modification of the Riparian Theory and Due Process in Missouri," Missouri Law Review, 34, Fall, 1970, p. 562.
87. "Municipal Enforcement of Private Restrictive Covenants: An Innovation in Land-Use Control", Texas Law Review, 44, March, 1966, p. 741.
88. "New Fish and Game Law May Help Save our Tidepools; Watching Tidepools", Sunset, 144, March, 1970, pp. 3-4.
89. "Non-Resident Beach Fees: Do the Beaches Belong to the People", The Municipal Attorney, 13, 1972, p. 236.
90. "On the Legal Aspects of North Carolina Coastal Problems: A Symposium", North Carolina Law Review, 49, August, 1971, p. 866.
91. "Open Space Legislation: Suggestions for a Model Act", Georgia Law Review, 2, Winter, 1969, p. 294.
92. "Ordinance Providing a Residency-Differentiated Fee Schedule for Use of a Municipal Beach is Invalid as a Violation of the Public Trust Doctrine", University of Cincinnati Law Review, 42, 1973, p. 554.
93. "Outdoor Recreation: Land Acquisition", American County Government, March, 1968.
94. "Park Planning and the Acquisition of Open Space: A Case Study," University of Chicago Law Review, 36, Spring, 1969, p. 642.
95. "Permissible Uses of New York's Forest Preserve Under 'Forever Wild'", Syracuse Law Review, 19, 1968, p. 969.

## LEGAL

### Unsigned Periodicals (cont'd)

96. "Place of Aesthetics in Zoning", DePauw Law Review, 14, Autumn-Winter, 1964, p. 104.
97. "Preservation of Indiana's Scenic Areas: A Method", Indiana Law Journal, 40, Spring, 1965, p. 402.
98. "Preservation of Park Lands", Baylor Law Review, 24, 1972, p. 170. °
99. "Preserving Rural Land Resources: The California West Side", Ecology Law quarterly, 1, Spring, 1971, p. 330.
100. "Problem on the Fringe: Conflict in Urban-Rural Transition Areas", Ohio State Law Journal, 31, Winter, 1970, p. 125.
101. "Progress and Problems in Wisconsin's Scenic and Conservation Easement Program", Wisconsin Law Review, Spring, 1965, p. 352.
102. "Property Taxation of Agricultural and Open Space Land", Harvard Journal of Legislation, 8, November, 1970, p. 158.
103. "Property - Wharfing Out - Riparian Owner Permitted to Use Filled-In Swamp as a Wharf to Reach Navigable Waters", San Diego Law Review, 7, July, 1970, p. 684.
104. "Proposals for State-wide Planning in North Carolina", Wake Forest Law Review, 8, June, 1972, p. 407.
105. "Public Access to Beaches: Common Law Doctrines and Constitutional Challenges", New York University Law Review, 48, May, 1973, p. 369.
106. "Public Access to Beaches", Stanford Law Review, 22, February, 1970, p. 564.
107. "Public Lands - The Public Trust Doctrine Includes a Right to Equality of Access to Municipal Beach Areas", Loyola University Law Journal, 4, 1973, p. 603.
108. "Public or Private Ownership of Beaches: An Alternative to Implied Dedication", UCLA Law Review, 18, 1971, p. 794.
109. "Public Ownership of Land Through Dedication", Harvard Law Review, 75, 1962, p. 1406.

# Bibliography

## Part Eight

### LEGAL

#### Unsigned Periodicals (cont'd)

110. "Public Recreation on Non-Navigable Lakes and the Doctrine of Reasonable Use", Iowa Law Review, 55, 1970, p. 1064.
111. "Public Rights and the Nation's Shoreline", ELR, 2, 1972, p. 10184.
112. "Public Rights in Public Lands", Montana Law Review, 32, Winter, 1971, p. 147.
113. "The Public Trust in Public Waterways", Urban Law Annual, 7, 1974, p. 219.
114. "Public Trust in Tidal Areas: A Sometime Submerged Traditional Doctrine", Yale Law Journal, 79, March, 1970, p. 762.
115. "Real Property", University of Miami Law Review, 28, 1973, p. 1.
116. "Real Property - Doctrine of Customary Rights - Customary Public Use of Privately Owned Beach Precludes Activity of Owner Inconsistent with Public Interest", Florida State University Law Review, 2, Fall, 1974, p. 806.
117. "Real Property Easements - Prescriptive Acquisition in North Carolina", North Carolina Law Review, 45, December, 1966, p. 284.
118. "Real Property: Easements by Prescription in Oklahoma", Oklahoma Law Review, 24, 1971, p. 266.
119. "Reconciling Competing Public Claims on Land", Columbia Law Review, 68, 1968, p. 155.
120. "Recreational Planning: A Symposium", Kentucky Law Journal, 55, Summer, 1967, p. 745.
121. "Regulation and Ownership of the Marshlands: The Georgia Marshlands Act", Georgia Law Review, 5, 1971, p. 563.
122. "Requirement of a Public Use for Expenditure of Public Funds: A Reappraisal of the Narrow Doctrine", University of Pittsburgh Law Review, 28, December, 1966, p. 329.
123. "Restrictive Covenants and Zoning Regulations", Tennessee Law Review, 31, Spring, 1964, p. 353.

LEGAL

Unsigned Periodicals (cont'd)

124. "Riparian Rights Doctrine in South Carolina", South Carolina Law Review, 21, 1969, p. 757.
125. "Riparian Water Law - Lakeshore Development", Wisconsin Law Review, Winter, 1966, p. 172.
126. "Sand for the People: Oregon Decision on Public Use of Beachland", Nation, 210, February 23, 1970, p. 196.
127. "Saving the Coast: The California Coastal Zone Conservation Act of 1972", Golden Gate Law Review, 4, Spring, 1974, p. 307.
128. "Saving San Francisco Bay: A Case Study in Environmental Legislation", Stanford Law Review, 23, January, 1971, p. 349.
129. "Saving the Seashore: Management Planning for the Coastal Zone", Hastings Law Journal, 25, 1973, p. 191.
130. "Site Value Taxation: Economic Incentives and Land Use Planning", Harvard Journal of Legislation, 9, November, 1971, p. 115.
131. "State Citizen Rights Respecting Great Water Resource Allocation: From Rome to New Jersey", Rutgers Law Review, 25, 1971, p. 571.
132. "State and Local Wetlands Regulation: The Problem of Taking Without Just Compensation", Virginia Law Review, 58, May, 1972, p. 876.
133. "Subdivision Control Requirement for Park Land", Syracuse Law Review, 12, 1961, p. 224.
134. "Supreme Court of California, 1969-1970", California Law Review, 59, 1971, p. 30.
135. "Symposium: California's Coastline", California State Bar Journal, 47, September-October, 1972, p. 402.
136. "Symposium: Eminent Domain", Hastings Law Journal, 20, January, 1969, p. 431.
137. "Symposium on Recreational Land Use", Syracuse Law Review, 24, Summer, 1973, pp. 927-1066.

# Bibliography

## Part Eight

### LEGAL

#### Unsigned Periodicals (cont'd)

138. "Symposium: The Ownership, Administration and Disposal of the Public Lands", Arizona Law Review, 8, Fall, 1966, p. 4.
139. "Symposium: Planned Unit Development", University of Pennsylvania Law Review, 114, November, 1965, p. 3.
140. "Symposium: Presenting An Analysis of the Public Land Law Review Commission Report", Land and Water Law Review, 12, Winter, 1970, p. 733.
141. "Techniques for Preserving Open Space", Harvard Law Review, 75, 1962, p. 1622.
142. "Testing the New Land Use Laws: California's Coastal Zoning Rules", Business Week, July 7, 1973, p. 84.
143. "This Land is My Land: The Doctrine of Implied Dedication and Its Application to California Beaches", Southern California Law Review, 44, 1971, p. 1092.
144. "Tideland Ownership - Time for Reform", University of Cincinnati Law Review, 36, 1967, p. 121.
145. "Tideland Trust: Economic Currents in a Traditional Legal Doctrine", UCLA Law Review, 21, February, 1974, p. 826.
146. "Toward Optimal Land Use: Property Tax Policy and Land Use Planning", California Law Review, 55, August, 1967, p. 856.
147. "Utah Statute Construed to Permit Dedication of Land Solely on the Basis of Public Use", Utah Law Review, December, 1966, p. 735.
148. "Validity Roles Concerning Public Zoning and Private Covenants: A Comparison and Critique", Southern California Law Review, 39, 1966, p. 409.
149. "Vanishing Wildlife and Federal Protection Efforts", Ecology Law Quarterly, 1, Summer, 1971, p. 520.
150. "Variations in Land Use Controls", Real Property, Probate and Trust Journal, 1, Winter, 1966, p. 431.

## LEGAL

### Unsigned Periodicals (cont'd)

151. "Water Appropriation for Recreation", Land and Water Law Review, 1, 1966, p. 209.
152. "Water Law - Artificial Versus Natural Fluctuation of Water Level of Navigable Lake - Rights of the Public Held Same in Both Situations", Land and Water Law Review, 5, 1970, p. 517.
153. "Water Law - Public Trust Doctrine Bars Discriminatory Fees to Non-Residents for Use of Municipal Beaches", Rutgers Law Review, 26, 1972, p. 179.
154. "Water Recreation - Public Use of 'Private Waters'", California Law Review, 52, 1964, p. 171.
155. "Waters and Watercourses - Public Trust Doctrine - An Ordinance Providing a Residency Differentiated Fee Schedule for Use of a Municipal Beach is Invalid as a Violation of the Public Trust Doctrine", University of Cincinnati Law Review, 42, 1973, p. 554.
156. "Waters and Watercourses - Right of Public Passage Along Great Lakes Beaches", Michigan Law Review, 31, 1933, p. 1134.
157. "Wetlands Statutes: Regulation or Taking?", Connecticut Law Review, 5, Summer, 1972, p. 64.
158. "Who Owns the Beaches?", Time, 94, August 29, 1969, p. 43.
159. "Within the Meaning of the 5th Amendment", Seton Hall Law Review, 4, Spring, 1970, p. 662.
160. "Zoning the Flood Plains of Ohio", University of Toledo Law Review, Summer, 1969, p. 655.
161. "Zoning for Industrial Waterfronts", Florida Planning and Development, 17, March, 1966, p. 1.

# Bibliography

## Part Eight

### LEGAL

#### Signed News Articles

1. Meade, Fred, "NMB Vote May Settle Argument", Sun News, Myrtle Beach, South Carolina, May 22, 1974.
2. Meade, Fred, "Easements No Laughing Matter", Sun News, Myrtle Beach, South Carolina, June 13, 1974.
3. Monk, John, "Council Refuses Bryan Rezoning", Sun News, Myrtle Beach, South Carolina, June 19, 1974.

### LEGAL

#### Unsigned News Articles

1. "Bryan Drive Hearing Set", Sun News, Myrtle Beach, South Carolina, February 4, 1974.
2. "Court Nixes Condominium", Sun News, Myrtle Beach, South Carolina, January 29, 1974.
3. "Do The Beaches Belong to the People?", New York Times, July 30, 1972.
4. "Dredging Permit Rulings Revised", Sun News, Myrtle Beach, South Carolina, April 13, 1974.
5. "NMB Land Decision Postponed", Sun News, Myrtle Beach, South Carolina, April 2, 1974.
6. "Ramsey Acres Topic Annexation", Sun News, Myrtle Beach, South Carolina, February 22, 1974.
7. "Suit Threatened on Connecticut Beach Restrictions", New York Times, October 1, 1972.
8. "Supreme Court Hears Dispute", Sun News, Myrtle Beach, South Carolina, February 12, 1974.

## Part Eight

## Bibliography

### LEGAL

#### Legal Cases

1. Adams v. Elliott, 128 Fla. 79, 174 So. 731 (1937).
2. Allen v. Allen, 19 R.I. 114, 32 A.166 (1895).
3. In re Ashford, 40 Hawaii 314, 440 P.2d 7C (1968).
4. Barclay v. Howell's Lessee, 31 U.S. 498 (1832).
5. Barnes v. Midland R.R. Co., 193 N. 378 (1903).
6. Bloom v. State Water Resources Commission, 157 Conn. 528, 254 A.2d 884 (1969).
7. Board of Trustees of International Improvement Trust Fund v. Madeira Beach Nominee, Inc., 272 So.2d 209 (Ct. App. Fla., 1973).
8. Borax Consolidated, Ltd. v. City of Los Angeles, 296 U.S. 10 (1935).
9. Borough of Neptune City v. Borough of Avon-by-the-Sea, 61 N.J. 296 294 A.2d 47 (1972).
10. Brindley V. Borough of Lavallette, 33 N.J. Super. 344, 110 A.2d 157 (L. Div. 1954).
11. Carolina Beach Fishing Pier, Inc. v. Town of Carlina Beach, 277 N.C. 297, 177 S.E.2d 513 (1970).
12. City of Daytona Beach v. Tona-Rama, Inc., 294 So.2d 73 (1974).
13. City of Hermosa Beach v. Superior Court, 231 Cal. App. 2d 294, 41 Cal. Rptr. 796 (1964).
14. City of Long Beach v. Mansell, 3 Cal. 3d. 462, 476 Pwd 423 (1970).
15. City of Manhattan Beach v. Cortelyou, 10 Cal. 2d 653, 76 P2d 483 (1938).
16. Collins v. Gerhardt, 237 Mich. 38, 211 N.W. 114 (1927).
17. County of Hawaii v. Sotomura, 55 Ha. 176, 517 P.2d 57 (1973).
18. Coxe v. State, 144 N.J. 396 (1895).
19. Delaplane v. Crenshaw, 56 Va., (15 Gratt.) 457 (1860).



# Bibliography

## Part Eight

### LEGAL

#### Legal Cases (cont'd)

20. Dincans v. Keenan, 192 S.W. 603 (Tex. Ct. Civ. App. 1917).
21. Elmer v. Rodgers, 106 N.H. 512, 214 A.2d 750 (1965).
22. Galveston East Beach, Inc. v. State of Texas.
23. F.A. Hihn v. City of Santa Cruz, 170 Cal. 436 (1915).
24. Gerwitz v. City of Long Beach, 69 Misc. 2d 763, 330 N.Y.S. 2d 495 (Sup. Ct. 1972), Aff'd mem., 358 N.Y.S. 2d 957 (App. Div. 1974).
25. Gion v. City of Santa Cruz, Dietz v. King, 2 Cal.3d 29, 465 P.2d to, 84 Cal. Rptr. 162 (1970) (En Banc).
26. Graham v. Walker, 78 Conn. 130, 61 A. 98 (1905).
27. Hughes v. State, 67 Wa. 2d 799, 410 P.2d 20 (1966), rev'd sub nom., Hughes v. Washington, 389 U.S. 290 (1967).
28. Hughes v. Washington, 389 U.S. 290 (1967).
29. Illinois Central R.R. v. Illinois, 146 U.S. 387 (1892).
30. Johnson v. May, 189 App. Div. 196, 178 N.Y.S. 742 (1919).
31. Just v. Marinette Co., 56 Wis. 2d 7, 201 N.W. wd 761 (1962).
32. King v. Oahu Ry. & Land Co., 11 Ha. 717 (1899).
33. Marks v. Whitney, 6 Cal. 3d 251, 491 P.2d 374 (1971).
34. McCarthy v. City of Manhattan Beach, 41 Cal. 2d 879, 264 P.2d 932 (1953), cert. denied, 348 U.S. 817 (1954).
35. Martin v. Waddell, 41 U.S. 367 (1842).
36. Money v. Wood, 152 Miss. 17, 118 So. 357 (1928).
37. Nekoosa Edwards Paper Co. v. RR Commission, 201 Wis. 40, 228, N.W. 144, 229 N.W. 631 (1930).
38. Nudd v. Hobbs, 17 N.H. 524 (1845).

## LEGAL

### Legal Cases (cont'd)

39. People v. William Kent Estate, 242 Cal. App. 2d 156 (1st Dist. Ct.App. 1966).
40. Oregon v. Fultz, 491 P.2d 1171 (1971).
41. Perley v. Langley, 7 N.H. 233 (1834).
42. Pollard's Lessee v. Hagan, 44 U.S. 212 (1845).
43. Seaway Co. v. Attorney General, 375 S.W.2d 923 (Tex. Civ. App. 1964).
44. Shepard's Point Land Co. v. Atlantic Hotel, 132 N.S. 335, 44 S.E. 39 (1903).
45. Shively v. Bowlby, 152 U.S. 1 (1894).
46. Spiegle v. Borough of Beach Haven, 116 N.J. Super. 148, 281 A.2d 377 (1971).
47. Spiegle v. Borough of Beach Haven, 46 N.J. 479, 281 A.2d 129 cert. denied 385 U.S. 831 (1966).
48. State v. Bauman, No. 28831 (Ct. App. Ore. Jan. 21, 1974, Ore. S.Ct. review denied April 1, 1974), 4 E.L.R. 20311.
49. State ex rel. Thompson v. Parker, 132 Ark. 315, 200 S.W. 101r (1918).
50. VanRymbek v. Patapsco Indus. Park, 251 MD. 470, 276 A.2d 61 (1971).
51. State ex rel. Thornton v. Hay, 254 Or. 584, 462 P.2d 671 (1969).
52. Trustees of Brookhaven v. Smith, 188 N.Y. 74 (1907).
53. Tucci v. Salzhauer, 69 Misc. 2d 225, 329 N.Y.S. 2d 825 (Sup. Ct. 1972), aff'd mem., 33 N.Y. 2d 854, 352 N.Y.S. 2d 198 (1973).
54. White v. Hughes, 139 Fla. 54 190 So. 446 (1939).