RECREATION POTENTIALS OF THE ISLANDS AND MARSHES
ADJACENT TO THE INTRACOASTAL WATERWAY

by

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### TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABSTRACT</td>
<td>1</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>THE INTRACOASTAL WATERWAY</td>
<td>2</td>
</tr>
<tr>
<td>ROUTE OF THE WATERWAY</td>
<td>5</td>
</tr>
<tr>
<td>Barrier Islands and Marsh Formation</td>
<td>5</td>
</tr>
<tr>
<td>Atlantic Section</td>
<td>6</td>
</tr>
<tr>
<td>Gulf Section</td>
<td>10</td>
</tr>
<tr>
<td>RECREATION ATTRACTIONS</td>
<td>12</td>
</tr>
<tr>
<td>Biotic Resources</td>
<td>12</td>
</tr>
<tr>
<td>Historical Sites</td>
<td>15</td>
</tr>
<tr>
<td>Cultural Attractions</td>
<td>16</td>
</tr>
<tr>
<td>National Seashores</td>
<td>18</td>
</tr>
<tr>
<td>Educational Benefits</td>
<td>19</td>
</tr>
<tr>
<td>ADVERSE ECOLOGICAL EFFECTS OF THE WATERWAY</td>
<td>21</td>
</tr>
<tr>
<td>CONCLUSION</td>
<td>23</td>
</tr>
<tr>
<td>MAPS</td>
<td>25</td>
</tr>
<tr>
<td>FOOTNOTES</td>
<td>59</td>
</tr>
<tr>
<td>BIBLIOGRAPHY</td>
<td>62</td>
</tr>
</tbody>
</table>
## LIST OF MAPS

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The Intracoastal Waterway</td>
<td>25</td>
</tr>
<tr>
<td>2.</td>
<td>Massachusetts-Rhode Island</td>
<td>26</td>
</tr>
<tr>
<td>3.</td>
<td>Connecticut-Long Island</td>
<td>27</td>
</tr>
<tr>
<td>4.</td>
<td>New York</td>
<td>28</td>
</tr>
<tr>
<td>5.</td>
<td>Trenton, New Jersey-Philadelphia, Pennsylvania</td>
<td>29</td>
</tr>
<tr>
<td>6.</td>
<td>Chesapeake Bay</td>
<td>30</td>
</tr>
<tr>
<td>7.</td>
<td>New Jersey</td>
<td>31</td>
</tr>
<tr>
<td>8.</td>
<td>Virginia-North Carolina</td>
<td>32</td>
</tr>
<tr>
<td>10.</td>
<td>Pamlico Sound, North Carolina</td>
<td>34</td>
</tr>
<tr>
<td>11.</td>
<td>Wilmington, North Carolina</td>
<td>35</td>
</tr>
<tr>
<td>12.</td>
<td>Georgetown, South Carolina</td>
<td>36</td>
</tr>
<tr>
<td>13.</td>
<td>Charleston, South Carolina</td>
<td>37</td>
</tr>
<tr>
<td>14.</td>
<td>Sea Islands, Georgia</td>
<td>38</td>
</tr>
<tr>
<td>15.</td>
<td>Jacksonville-Cape Kennedy, Florida</td>
<td>39</td>
</tr>
<tr>
<td>16.</td>
<td>Palm Beach, Florida</td>
<td>40</td>
</tr>
<tr>
<td>17.</td>
<td>Miami Beach, Florida</td>
<td>41</td>
</tr>
<tr>
<td>18.</td>
<td>Florida Keys</td>
<td>42</td>
</tr>
<tr>
<td>19.</td>
<td>Fort Myers-Sarasota, Florida</td>
<td>43</td>
</tr>
<tr>
<td>20.</td>
<td>Sarasota-Anclote River, Florida</td>
<td>44</td>
</tr>
<tr>
<td>21.</td>
<td>Anclote River-Indian Bay, Florida</td>
<td>45</td>
</tr>
<tr>
<td>22.</td>
<td>Yankeetown-St. Marks, Florida</td>
<td>46</td>
</tr>
<tr>
<td>Figure</td>
<td>Description</td>
<td>Page</td>
</tr>
<tr>
<td>--------</td>
<td>-------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>23.</td>
<td>Apalachee Bay-Apalachicola Bay, Florida</td>
<td>47</td>
</tr>
<tr>
<td>24.</td>
<td>Panama City-Pensacola, Florida</td>
<td>48</td>
</tr>
<tr>
<td>25.</td>
<td>Alabama</td>
<td>49</td>
</tr>
<tr>
<td>26.</td>
<td>Mississippi-New Orleans, Louisiana</td>
<td>50</td>
</tr>
<tr>
<td>27.</td>
<td>New Orleans, Louisiana</td>
<td>51</td>
</tr>
<tr>
<td>28.</td>
<td>Mississippi River-Atchafalaya River, Louisiana</td>
<td>52</td>
</tr>
<tr>
<td>29.</td>
<td>Morgan City, Louisiana</td>
<td>53</td>
</tr>
<tr>
<td>30.</td>
<td>Port Arthur, Texas</td>
<td>54</td>
</tr>
<tr>
<td>31.</td>
<td>Galveston Bay, Texas</td>
<td>55</td>
</tr>
<tr>
<td>32.</td>
<td>Freeport, Texas</td>
<td>56</td>
</tr>
<tr>
<td>33.</td>
<td>Corpus Christi Bay, Texas</td>
<td>57</td>
</tr>
<tr>
<td>34.</td>
<td>Brownsville, Texas</td>
<td>58</td>
</tr>
</tbody>
</table>
ABSTRACT: Few Americans are aware of the tremendous recreation potentials along the banks of the Intracoastal Waterway, mainly because they are unaware of the existence and extent of the toll-free Waterway. This study attempts to categorize and locate some of the attractions that can be explored along the two thousand miles of islands and coastal marshes that line the channel of the Waterway from Massachusetts to the Mexican border.

INTRODUCTION

I can't help feeling that in this country the Waterway is taken for granted by those who know of it, yet if it were somewhere in Europe these same people would travel thousands of miles to cruise on it. Of course, only an infinitesimal percentage of people in the United States even know it exists.

- Slade Dale, Captain of the Coastal Queen

The Intracoastal Waterway and the two thousand miles of islands and marshes that line its banks from Massachusetts to the Mexican border provide potential recreation attractions for pleasure boaters, nature lovers, and history buffs that are unknown to the majority of Americans.
The purposes of this study are: 1) to examine the character and distribution of these attractions, and 2) to provide a useful categorization. A major value of the study is the section maps that show the route of the Waterway and the location of the various recreation attributes. Although some areas of recreation potential can be reached by land connections, the Intracoastal Waterway provides toll-free access to all, and provides the opportunity to view the total as a unique, linear, geographic entity.

THE INTRACOASTAL WATERWAY

The stimulus for the development of the Intracoastal Waterway was the stimulation of commerce among the coastal states. Development has been in a piecemeal fashion. The earliest local improvement was the digging of a canal from Ipswich Bay to Gloucester Bay, Massachusetts, in 1643. Numerous other projects were undertaken, including a survey made by George Washington for the Dismal Swamp Canal in Virginia in 1755 (see map, p. 32). The concept of an intracoastal waterway for the promotion of commerce among the states was suggested to the Senate of the United States in 1808 by Albert Gallatin, Secretary of the Treasury. In 1828, Congress began appropriating money for Federal construction of
projects on both Atlantic and Gulf coasts, and since that year, all improvements have been carried out by the Corps of Engineers, U.S. Army. The Corps of Engineers' job has been that of providing a protected coastal waterway route for commercial tows and other light-draft vessels not suited to navigating long stretches of open ocean so that safe passage can be made between all coastal points between Massachusetts and the Mexican border.\(^2\)

By improving and interconnecting the many natural coastal waterways, such a waterway is now available, except for a few gaps, from Boston, Massachusetts, to the Florida Keys, and along the Gulf coast from the Caloosahatchee River below Fort Myers, Florida, to Brownsville, Texas (see map, p. 25). The only open water reach of substantial distance along the Waterway is 177 miles in the Gulf of Mexico from the Anclote River north of Tarpon Springs, Florida, to the mouth of the St. Marks River in Apalachee Bay, Florida (see map, pp. 45, 46).

The authorized minimum dimensions of the Waterway are twelve feet in depth, and 125 feet in width. These dimensions have been obtained in all but a few locations. The major exception is from Florida Bay to Key West, where a Federal project has been authorized, but no work
has begun. Congress has also authorized the construction of a barge canal across northern Florida between the St. Johns River at Palatka and the Withlacoochee River at Yankeetown (see map, pp. 39, 46) as a connecting link between the Atlantic and Gulf Waterways.

The Waterway carries substantial tonnage by barge. The biggest tonnage consists of crude oil, gasoline, fuel oil, jet fuel, kerosene, and other petroleum products moving from Texas and Louisiana to refineries, distributors, and customers. Other bulk commodities moving in quantity include iron and steel, limestone, sand and gravel, timber products, grains, oyster shells, and fertilizer materials. Coal is transported from northern Alabama, industrial chemicals from Texas, Louisiana, and the Midwest, sulphur from Texas and Louisiana, and grain from the Midwest. Missiles and space vehicles are also moved to and from space installations along the Gulf coast.

The multi-purpose use of the Waterway has become increasingly evident only in recent years. The increase in personal disposable income and leisure time has made the transient Waterway traveler the substantial beneficiary of the non-reimbursable project.
ROUTE OF THE WATERWAY

Barrier Islands and Marsh Formation

The islands and marshes that line the route of the Waterway came into existence as the result of wave action and siltation. Along the southern Atlantic and Gulf coasts of the United States, the offshore barrier bars are unusually well-developed, and are not far from being continuous. In such a situation, the barrier beach first develops as a barrier bar when large waves meet a shelving, sandy floor, and spend their energy where they break, usually some distance offshore. The rush of the surf stirs the waste on the bottom, carries it forward a little way, and then drops it. By this process, a low ridge is raised from the bottom, is built at length above the water, and may be broadened by the addition of material deposited against its outer slope.

The quiet water on the land side is known as a lagoon. These receive fresh water and mud from the land. Gradually, a lagoon becomes filled to the level of high tide, and a tidal marsh or salt marsh replaces the open water of the lagoon. In time, a lagoon becomes silted up and becomes land. In many places, the Waterway is the only separation between the barrier beaches and marshes and the mainland. In
areas where the bottom of the Waterway is prone to silt and shift, the Corps of Engineers is continually measuring the depth and the course of the channel, and supervising dredging to maintain the channel at established depths.

**Atlantic Section**

The Atlantic section of the Waterway (see map, pp. 26-42) has its northernmost terminus at the Annisquam River and Blynman Canal in Massachusetts about twenty-three miles northeast of Boston. This Canal extends across the base of Cape Ann from Ipswich Bay on the north to Gloucester Harbor on the south. From Gloucester Harbor, the route traverses the open waters of Massachusetts Bay to Boston. Southeast of Boston Bay, the route crosses Massachusetts Bay to the Atlantic Ocean, and then Cape Cod Bay to the Cape Cod Canal. Southward from the Canal, the Waterway enters the head of Buzzards Bay, the open waters of the Atlantic Ocean, and then into Block Island Sound off the Rhode Island coast. From Block Island Sound, two routes are available. The one generally used passes through Long Island Sound, the East River, Upper and Lower New York Bays, and thence into the Atlantic Ocean along the New Jersey shore. Long Island, lying off and nearly the length
of the Connecticut coast, provides the main protection for the passageway. The alternate route is provided by the Long Island Intracoastal Waterway, which leaves the main route in Block Island Sound, passes through Gardiners Bay, Shelter Island Sound, and Little and Great Peconic Bays, crosses the protected shallow bays along the south shore of the Long Island to East Rockaway Inlet, and then crosses open waters to rejoin the main route in the open ocean off Sandy Hook south to Manasquan Inlet.

From Manasquan Inlet, New Jersey, south, the route follows the New Jersey Intracoastal Waterway, and then through the Cape May Canal into Delaware Bay. One route passes through Delaware Bay and River to Reedy Point, Delaware, about forty miles below Philadelphia, where the route enters the Chesapeake and Delaware Canal. From Trenton, New Jersey, the Waterway extends south through the Delaware River to the Chesapeake and Delaware Canal. The route then traverses the waters of Chesapeake Bay, crossing over the underwater Chesapeake Bay-Bridge Tunnel, to Hampton Roads, Virginia. The alternate route extends along the Delaware coast south from Cape Henlopen, southwest of Cape May, New Jersey, past the Delaware-Maryland
border, past Assateaque Island National Seashore, until the two waterways join at the southern end of Chesapeake Bay near Hampton Roads, Virginia.

From Hampton Roads, Virginia, the Waterway continues generally southerly through Hampton Roads, Elizabeth River, and the Southern Branch of Elizabeth River, these waters successively serving the ports of Hampton, Newport News, Norfolk, and Portsmouth. From the Southern Branch, two routes extend south, these being the Albemarle and Chesapeake Canal Route and the Dismal Swamp Canal Route. They follow the natural waterways and land cuts into Albemarle Sound, where they intersect southeast of Wade Point Lighthouse at the mouth of the Pasquotank River. From that intersection, the first route continues southward via Alligator River and a land cut into Pungo River, across Pamlico River and Pamlico Sound at the mouth of Neuse River, and then onward to Beaufort, North Carolina. The second route continues southerly by a more easterly route through Croatan Sound and Pamlico Sound, and the mouth of Neuse River, where it rejoins the other route.

From Beaufort, North Carolina, the Waterway follows the sounds, streams, and marine marshes along the coast, enters Cape Fear River below Wilmington, and follows that river downstream to Southport. From
Southport, the route extends to a point south of Little River, South Carolina. At Little River, where the Waterway connects by a land cut with Waccamaw River at Enterprise, it follows that river downstream to Winyah Bay. Leaving Winyah Bay via the Estherville-Minin Canal, the Waterway passes directly by Charleston, Beaufort, and Parris Island, South Carolina.

The Waterway crosses the Savannah River below Savannah, Georgia, and enters the St. Johns River below Jacksonville, Florida. Georgia, like the other coastal states, has what amounts to two coasts: an outer one made up of eight large islands known at the Sea Islands (see map, p. 36)—Cumberland, Jekyll, St. Simons, Sapelo, St. Catherines, Ossabaw, Skidaway, and Tybee, and an inner coast which is the mainland itself. The Waterway enters the St. Johns River south of Jacksonville, Florida, and follows that river upstream to the mouth of the Oklawaha River. It then flows southerly, paralleling the barrier beaches of the east coast of Florida until it reaches Miami on Biscayne Bay. From Miami to Key West, the project has not yet been completed to its authorized dimensions. The authorized Cross-Florida Barge Canal will, when completed, carry the route across the state from Palatka to Yankeetown (see map, pp. 39, 46) to connect the Gulf and Atlantic sections.
Gulf Section

The Gulf section of the Waterway (see map, pp. 43-58) begins at Fort Myers on the west coast of Florida. The Waterway extends from the mouth of the Caloosahatchee River below Fort Myers to the Anclote River north of Tarpon Springs. From the Anclote River, there is no Federal project for 177 miles until Apalachee Bay, where the St. Marks River enters the Gulf of Mexico at St. Marks, Florida. From the latter, the Waterway follows land cuts and protected routes until the Alabama border is reached. In Alabama, the route extends from Perdido Bay at the Florida border through Bay Lanche, Wolf Bay, a land cut, and Bon Secour Bay into Mobile Bay. A channel through Pass aux Herens connects Mobile Bay with Mississippi Sound. In Mississippi, the Waterway passes through Mississippi Sound and Grand Isle Pass to Lake Borgne in Louisiana. The twenty-eight mile stretch of man-made white sand beaches and the few offshore islands constitute Mississippi's portion of the Intracoastal Waterway.

From Lake Borgne, where the channel enters Louisiana from the east, it follows a land cut to the Inner Harbor Navigation Canal, becoming a part of the newly completed Mississippi River-Gulf outlet. At New Orleans, traffic
can follow the Mississippi River from the Inner Harbor Navigation Canal Lock, the Harvey Lock, or a more southerly route around the city using Algiers Lock. An alternate connection from the Mississippi River at Port Allen, opposite Baton Rouge, to Morgan City, Louisiana, is also available. Between the Atchafalaya River near Morgan City and the Sabine River, the channel follows a progression of bayous and land cuts along a route north of West Cote Blanche Bay, Vermillion Bay, and Grand and Calcasieu Lakes.

In Texas, the Waterway traverses a portion of the Sabine-Neches Waterway to West Port Arthur, then follows land cuts and a portion of East Bay to Galveston Bay. At Port Bolivar, the Waterway crosses Galveston Bay to the Galveston-Houston Ship Channel, and from that point, one alternate channel extends through Galveston Channel to West Bay, and the main channel extends on a direct westerly route to West Bay. The main channel of the Waterway extends across and follows West Bay, Chocolate Bay, and land cuts to the north shore of Matagorda Bay. It then follows a course across Matagorda Bay to Port O'Connor, and through Espiritu Santo and San Antonio Bays into Aransas Bay. From Aransas Bay, one route leads southward through
the Lydia Ann Channel to Port Aransas, where it joins the Port Aransas-Corpus Christi Ship Channel, and another leads directly along the mainland part of the city of Aransas Pass to the Port Aransas-Corpus Christi Channel near Port Ingleside. From this point, the Waterway leads southward through Corpus Christi Bay to the Laguna Madre, which it follows to its terminus in the port of Brownsville.

RECREATION ATTRACTIONS

Biotic Resources

The traveler on the Waterway will pass an endless variety of vegetation and wildlife along the banks. In North Carolina on the Outer Banks (see map, pp. 32-35), the Atlantic Ocean is visible beyond the low marshes and sand dunes. From South Carolina to Florida, the banks are heavily tree-lined with such varieties as palm, pine, yucca, and huge cypress. From North Carolina to northern Florida, there extends a continuous area of vast tidal marshes, usually covered with cordgrass (*Spartina alternifolia*) growing in "pluff" mud. The tides come and go, alternately disclosing the hiding sand bars and the marine life that flourishes in the mud. Clapper rails, eagles, mergansers,
black-and-white oystercatchers, and pelicans can be observed anywhere along these tidal reaches. The Great Dismal Swamp, through which the Great Dismal Swamp Canal passes in Virginia, is what scientists call a "relict area," a completely natural and undisturbed plant community. The trees and bush crowd in on both sides of the Canal—Southern pine, cypress, black gum, Virginia creeper, wild cherry, mimosa and misletoe, among which the wildcat, weasel, raccoon, otter, muskrat, and mink may be seen. Jekyll Island, one of the Sea Islands of Georgia (see map, p. 38), attracts large numbers of giant sea turtles.

Along the Gulf coast, the Waterway banks are lined with ancient, gnarled oaks with branches heavy with gossamer moss, cypress with knee-like trunks showing above the water, magnolias, and red-berried holly and misletoe high in the trees of Texas and Mississippi. Shore birds are a common sight along both coasts.

Numerous Federal and state waterfowl refuges dot the banks of the Waterway, as they provide winter homes for the thousands of waterfowl that migrate along the Atlantic and Mississippi flyways. Some of the more well-known Federal refuges include Bombay Hook in Delaware (see map, p. 31), Chincoteaque on the Mary-
land-Virginia border (see map, p. 31), Back Bay and Mackay Island in Virginia (see map, p. 32), Swanquarter in North Carolina (see map, p. 32), Cape Romain in South Carolina (see map, p. 36), Tybee, Harris Neck, Blackbeard Island, and Wolf Island in Georgia (see map, p. 38), refuges too numerous to mention in Florida, a continuous line of refuges in Louisiana, and Aransas and Laguna Atascosa in Texas (see map, pp. 57, 58).

Wildlife in danger of extinction also finds sanctuary in the land bordering the Waterway. The channel passes the only winter refuge of the rare Whooping Crane at Aransas National Wildlife Refuge in Texas (see map, p. 57). The Waterway extends along the Florida Keys, which are the habitat of the only remaining tiny Key Deer (see map, p. 42). On Chincoteaque Island, Virginia (see map, p. 31), a National Wildlife Refuge protects the only existing herd of wild pomies in America. The northern continuation of Chincoteaque Island is Assateaque Island National Seashore off the Maryland coast, and it provides home to a rare herd of Sika deer.
Historical Sites

One recreation potential of the Waterway is the great number of historic sites along the banks that can be explored by the history buff. Boston Bay's twenty-odd islands are replete with history (see map, p. 26), and all were fortified at one time or another. For example, Fort Warren, a Civil War prison on George's Island, was where "John Brown's Body" was written. The Dismal Swamp Canal in Virginia (see map, p. 32), was originally surveyed by George Washington, and today is one of the oldest surviving artificial waterways in the country. The islands of the Outer Banks of North Carolina (see map, p. 32), were the site of Roanoke, the first English settlement in America, and Kitty Hawk, where the Wright Brothers made the first successful airplane flight.

The Sea Islands of Georgia (see map, p. 38), in the process of becoming state parks and oceanfront campgrounds, were once the privately-owned winter playgrounds of millionaires such as Rockefeller, Vanderbilt, Harriman, Lorillard, Pulitzer, Morgan, and Carnegie. Many of their former residences are open to the public. Fort Frederica, a national monu-
ment located on St. Simons Island, was built by James Oglethorpe to defend the coastal colonies against Spain.\textsuperscript{18}

Along the Gulf coast channel is Santa Rosa Island (see map, p. 48), which guards the entrance to Pensacola Bay, Florida, and the site of the first settlement attempt on the North American continent by the Spaniard Don Tristan in 1559.\textsuperscript{19} Dauphin Island in Alabama (see map, p. 49) is the site of Fort Gaines State Monument, a major stronghold in the War Between the States.\textsuperscript{20} Ship Island off the Mississippi coast (see map, p. 50) houses Fort Massachusetts where a British armada attempted the capture of New Orleans in the War of 1812.\textsuperscript{21} In Texas, Padre Nicholas Balli, confessor to a Spanish king, made the first white settlement on the island (see map, p. 58) over 160 years ago.\textsuperscript{22} These few places and events only scratch the surface of the rich and varied historical sites to be found along the route of the Waterway.

\textbf{Cultural Attractions}

Many cultural attractions are found along the banks of the Waterway. First and foremost are the highly-developed resorts on the barrier beaches of Atlantic City (see map, p. 31), Miami (see map, p. 41),
Palm Beach (see map, p. 40), and the "Miracle Strip" of Pensacola (see map, p. 48). The waters of Block Island Sound (see map, p. 26) are the site of competition among sailing yachts for the America's Cup trophy.

Portsmouth Island on the Outer Banks of North Carolina (see map, p. 34) is a rare discovery for the traveler, for it is a deserted island. The village of Portsmouth was once thriving on the sea trade of the 1700's, but the currents of the dangerous Diamond Shoals, just off the Outer Banks, are the meeting place for the warm Gulf and cold Labrador currents, and the inlet eventually shoaled up so ships could no longer pass through. The island is included in the plans for Cape Lookout National Seashore. On Pawley's Island off the coast of South Carolina (see map, p. 36) is found the unique art of weaving rope hammocks which was learned over 200 years ago from Portuguese sailors who made nearby Georgetown a port of call.24

All along the Gulf coast Waterway beach combers search the sand and shallow waters for treasure from wrecked Spanish galleons. The barrier islands of western Florida, especially Sanibel, Captiva, and Marco (see map, p. 43), are some of the finest shelling beaches in the world.25 As with historical sites, the
cultural attractions of the coastal Waterway are numerous, and directly accessible to the Waterway traveler.

National Seashores

The linear character of the islands and marshes adjacent to the Waterway would appear to present the opportunity to view these areas as a political unit, and to suggest the possibility of a Federally-administered island policy for their future development. However, this has not been the case. Representative Wayne Aspinall, Chairman of the House Committee on Interior and Insular Affairs, states that, "it seems unlikely that an overall plan would be practical with respect to all island groups." With certain exceptions, the offshore islands are not under Federal jurisdiction, but rather, they are under the jurisdiction of the states. Representative Aspinall continues:

Neither this Committee nor the Congress has considered any legislation involving all island groups ... as a geographic entity. It should be noted that this Committee has, from time to time, considered and recommended legislation involving particular areas along the Atlantic and Gulf Coasts. For example, the Congress approved the Assateaque Island National Seashore and the Padre Island National Seashore. We are also considering legislation authorizing the Gulf Islands National Seashore.26
In the last twenty years, along with the movement to preserve what wildlands remain in this country, the National Seashore acquisition program has been progressing. National Seashores established include Cape Cod in Massachusetts (see map, p. 26), Fire Island in New York (see map, p. 27), Cape Hatteras in North Carolina (see map, pp. 32, 34), Padre Island in Texas (see map, p. 58), and Assateaque Island off the Maryland-Virginia coast (see map, p. 31), which was saved from development into thousands of seaside cottage lots only by the disastrous storm of March, 1962. Cape Lookout National Seashore in North Carolina is in the process of land acquisition (see map, p. 34), legislation on Gulf Islands (see map, p. 49) is under consideration by Congress, and Cumberland Island, Georgia (see map, p. 38), owned by heirs of the Carnegie family, has also been recommended by the National Park Service as a National Seashore.

Educational Benefits

Both the general citizen and the scientist can learn a great deal from any "in length" travel on the Waterway. The alert traveler will take notice of the changes in climatic zones, biotic provinces, and coastline types, as his journey progresses along the channel.
The scientist, be he a botanist, or zoologist, or a specialist in bottom soils, will have endless opportunity for scientific investigation.

At any point along the Waterway, those travelers with an innate awareness have the opportunity to comprehend and appreciate the beauty of wildlife and vegetation of the remaining coastal wilderness. Perhaps this is best expressed in the following poem, written on Cape Cod, Massachusetts, one July day:

**The School**

The tranquil sun slopes easy in the east,
Leveling its blue rays over the salt marshes
Along the silver tidal pond, etching a string of
Ducks in black. Beyond,

The mare's tails stream along the sky, soft bands
Of ultramarine. Hypnotized by the eye of God I
Lean against the stone bridge's balustrade, and
Mean and mean.

Full tide of silver metaphysics brims my skull.
For me the disoriented sun has realized the
World. At last I stand ready to believe what my
Whiskey teachers thought absurd:

Beauty is its own excuse for meaning. Ineffable,
I drown in the salty air, turn belly up and float
On the sliding tide. But suddenly, and while
I stand in pride,

Staring at the disclike pool, the ducks break rank
With an awkward squawk and climb the agitated
Air. As slow as they are fast, a scaly fin,
Huge as houses are,

Rises from the pond. The final sun glints on
The emerging scales which shed their water like a
Tern. Slowly the monstrous fin sinks down again
And I learn and learn.

-Carl Bode
ADVERSE ECOLOGICAL EFFECTS OF THE WATERWAY

Despite the tremendous value of the Waterway as an artery of commerce, and the value of the recreation potential along its banks, the Waterway has had some deleterious effects on the marine ecosystem. The Fish and Wildlife Service of the Department of Interior proffers the following general opinion:

Effects of the project on marine habitat range from very little to locally disastrous. Dredging of the channel itself destroys a narrow strip of habitat. In some cases, the channel may cause changes in salinity distribution and current patterns, but whether such changes are beneficial, damaging, or of no apparent consequence depends on local circumstances. Disposal of spoil from the dredging is usually of more consequence than dredging itself. Here again, however, the effects of spoil disposal depend on local circumstances. Some areas, such as Lemon Bay on the west coast of Florida, have been severely damaged by the covering of extensive areas of nursery habitat. Conversely, spoil islands in some areas of the Indian River on the east coast of Florida have proven beneficial in that they provide both additional littoral zone and nesting habitat for birds. Dredging and spoiling from the Waterway in North Carolina sounds caused extensive damage to oyster beds through turbidity and sedimentation.

The Corps of Engineers claims that close cooperation is maintained with state fish and game commissions and the Department of Interior's Fish and Wildlife Service on the disposal of dredging spoils. The spoils are deposited, as closely as can be economically justified, in accordance with the ideas of those authorities.
to prevent damage to the natural fish and wildlife resources. This, generally, is done by staggering the spoil banks on opposite sides of the channel to permit circulation of water in the channel.30

The Massachusetts Division of Marine Fisheries recognizes that man's encroachment on coastal wetlands has destroyed or severely damaged the nursery grounds of many fish. These nursery areas no longer serve as suppliers of important nutrients for the marine ecosystem. Sport fishermen, commercial fishermen, boating enthusiasts, developers, and industrialists are all involved in the over-exploitation of these irreplaceable wetlands.31 A grim reminder of the watchfulness that must be practiced is the current plan to dredge up 50,000,000 cubic yards of sand and gravel fill from four valuable sites along the Waterway on the Massachusetts coast. The fill would be used to extend a runway of Boston's Logan Airport into Boston Harbor to accommodate the new generation of commercial jet aircraft. The dredging plan is stalled for the moment on the desk of the Massachusetts Department of Natural Resources which is refusing to give approval to the Corps of Engineers until it has made its own study of the possible damage to the marine life balance, and
and especially to valuable fish and shellfish croplands. 32

Oil pollution is extremely harmful to the environment wherever it occurs. Fortunately, the Bureau of Sport Fisheries and Wildlife reports that in its region that encompasses the Waterway from Louisiana to Maryland, that there have not been many spills on the Waterway. 33

 Concern for ecology has already forced Secretary Hickel of the Department of Interior to promise a review of the Cross-Florida Barge Canal plan. Floridians complain that flooding of the Oklawaha River basin has already inundated 13,000 acres of forest, and that the Canal would flood out the homes of rare alligators, panthers, and wild turkeys. 34

CONCLUSION

The water route through two thousand miles of islands and marshes, preserved by the dredging of the Intracoastal Waterway, has formed a unique, linear entity on the American coastal landscape. The Waterway itself can be used for boating on a placid, protected channel from Massachusetts to the Mexican border, but along the banks
of the Waterway is found the greater recreation potential. Innumerable forms of wildlife and vegetation, historical sites, areas of cultural interest, and an outdoor laboratory for the sightseer and the scientist may be viewed and explored from the direct access allowed by the Waterway. The Intracoastal Waterway should be included in the "Discover America" promotion, especially since it is so unknown to a majority of Americans, and because it offers one of the longest toll-free recreation potentials in America.
LEGEND

The Intracoastal Waterway
(Completed)-------------------
Existing Depth
Authorized Depth

Existing Depth

Outside Routes

Mileage

Principal Improved Harbors or
Deep Water Channels

Principal Improved Connecting
Waterways or Channels

Points of Historical Interest

Note: All mileage based on zero at Trenton, N.J.
LEGEND

The Intracoastal Waterway (Completed)
The Intracoastal Waterway (Authorized but not Completed)
Outside Routes
Mileage
Principal Improved Harbors or Existing Depth
Deep Water Channels
Principal Improved Connecting Waterways or Channels
Points of Historical Interest

Note: All mileage based on zero at Trenton, N.J.

THE INTRACOASTAL WATERWAY
ATLANTIC SECTION
STATUTE MILES

CORPS OF ENGINEERS
THE INTRACOASTAL WATERWAY
ATLANTIC SECTION
STATUTE MILES
CORPS OF ENGINEERS
CHART NO. 6
The Intracoastal Waterway

Gulf Section

Index Map

Legend
- Intracoastal Waterway Completed
- Intracoastal Waterway Incomplete
- Outside Route
NOTE: There are no Ferries crossing the Intracoastal Waterway on this sheet.

LEGEND
Intracoastal Waterway completed
Intracoastal Waterway authorized but not complete
Outside Routes
Miles from New Orleans, La. (Harvey Lock)
Connecting or alternative channels in bays, harbors and streams other than Intracoastal Waterway, under construction
Points of historical interest
Existing Buoys
Authorized Depth
NOTE: All mileage based on zero at New Orleans, La. (Harvey Lock)
THE INTRACOASTAL WATERWAY
GULF SECTION

CHART NO. 1
LEGEND

Intracoastal Waterway completed
Intracoastal Waterway authorized but not completed
Outside Routes
Miles from New Orleans, La. (Harvey Lock)
Connecting or alternative channels in bays, harbors and streams other than Intracoastal
Connecting navigable waterways, not Intracoastal Waterway, under construction
Points of historical interest
Existing Depth
Authorized Depth

NOTE: All mileage based on zero at New Orleans

(Harvey Lock)
FOOTNOTES

1. Slade Dale, President of Dale Boat Lines, Inc., of Bay Head, New Jersey, and captain of the Coastal Queen, one of the few commercial passenger vessels operating on the Waterway, as quoted by Anthony Bailey, "Inside with the Coastal Queen," New Yorker, Oct. 31, 1964, p. 142.


4. Ibid., p. IV-1.


FOOTNOTES (continued)


FOOTNOTES (continued)


29. Letter from W.L. Towns, Acting Regional Director, Department of Interior, Fish and Wildlife Service, Bureau of Sport Fisheries and Wildlife, Atlanta, Georgia, April 2, 1970.


33. Letter from W.L. Towns, Acting Regional Director, Department of Interior, Fish and Wildlife Service, Bureau of Sport Fisheries and Wildlife, Atlanta, Georgia, April 2, 1970.

BIBLIOGRAPHY

Books


Government Publications


BIBLIOGRAPHY (continued)

Letters

Letter from W.L. Towns, Acting Regional Director, Department of the Interior, Fish and Wildlife Service, Bureau of Sport Fisheries and Wildlife, Atlanta, Georgia, April 2, 1970.


Maps

1969 Official Alabama State Map.

Newspapers


Pamphlets


Periodicals


BIBLIOGRAPHY (continued)


