

A DRAFT MANAGEMENT PLAN FOR  
THE SAPELO ISLAND NATIONAL ESTUARINE SANCTUARY:  
A LOOK TO 1980 AND BEYOND

by

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PREFACE

The Estuarine Sanctuary concept was introduced in the Federal Coastal Zone Management Act (CZMA) of 1972 (section 312). This legislation establishes an Estuarine Sanctuary Program within the Office of Coastal Zone Management (O.C.Z.M.) to provide grants to states on a matching basis for the purpose of acquiring, developing and operating estuarine areas for use as estuarine sanctuaries. An estuarine sanctuary is defined as "a research area, which may include any part or all of an estuary, adjoining transitional areas, and adjacent uplands, set aside to provide scientists and students the opportunity to examine over a period of time the ecological relationships within the area" (see appendix 1).

Estuarine sanctuaries serve a dual purpose by providing undisturbed areas of representative coastal ecological types for research and establishing control areas against which impacts of man's activities can be assessed. The main objectives of these areas are long-term scientific and educational activities especially to provide some of the information necessary for coastal zone decision making, hence the management plan should support such objectives.

In the Estuarine Sanctuary Guidelines, eleven different biogeographic regions were defined (see appendix 2). The Sapelo Island National Estuarine Sanctuary in Georgia was selected to represent the Carolinian region, an area characterized by extensive marshes and swamps, turbid and productive waters, and temperate biota. Designation of the sanctuary occurred in December 1976 and constituted the second Estuarine Sanctuary in the nation.

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#### STATEMENT OF PURPOSE

The Sapelo Island National Estuarine Sanctuary (will be referred to as Sapelo Island Estuarine Sanctuary) has been in operation since 1976, but to this date no management plan has been drafted or implemented. Management of the Sanctuary has changed from the management structure outlined in the initial Sanctuary Proposal and in the final EIS. Federal operation and maintenance grants, available for the first 3 years of sanctuary operation, will end in November of 1980. Because of these factors there is a need to review the Sanctuary Program and to identify the major issues of concern, and define the responsibilities of the various divisions and agencies involved in the Sanctuary program. The objective of this paper is to define the long-term management objectives of the Sapelo Island Sanctuary and provide strategies to achieve them.

#### DESCRIPTION OF THE AREA

Sapelo Island, one of the eleven major Georgia barrier islands, has been the site of a National Estuarine Sanctuary since 1976 (see fig. 1). The 7,400 acre sanctuary encompasses the extreme southern portion of the island, all of the Duplin River and its associated marshes and watershed. Management of the sanctuary is controlled by the Georgia Department of Natural Resources (DNR). Day to day supervision of the entire island is under the auspices at DNR's Game and Fish Division. Sapelo Island is the game and fish headquarters for all the coastal Georgia Wildlife Management areas. DNR's coastal resources division (CPD), based in Brunswick, Georgia is responsible for education and monitoring programs in the sanctuary, as well as grant administration and coordination with state coastal zone management and the federal office of Coastal Zone Management (see fig. 2 for a schema of sanctuary management.) Administration is described in greater detail in section V.

The sanctuary borders the larger R. J. Reynold's Wildlife Refuge to the north, a Georgia state program that has been in operation since 1969 (see fig. 3). The Wildlife Refuge consists of approximately 12,000 acres of upland and is managed by the Game and Fish Division of the Georgia Department of Natural Resources. The University of Georgia leases the southern end of Sapelo Island from the state as the main research facility for the University's Marine Institute. The Institute has been collecting data and conducting research in the Duplin River Estuary since 1953 with the cooperation and financial

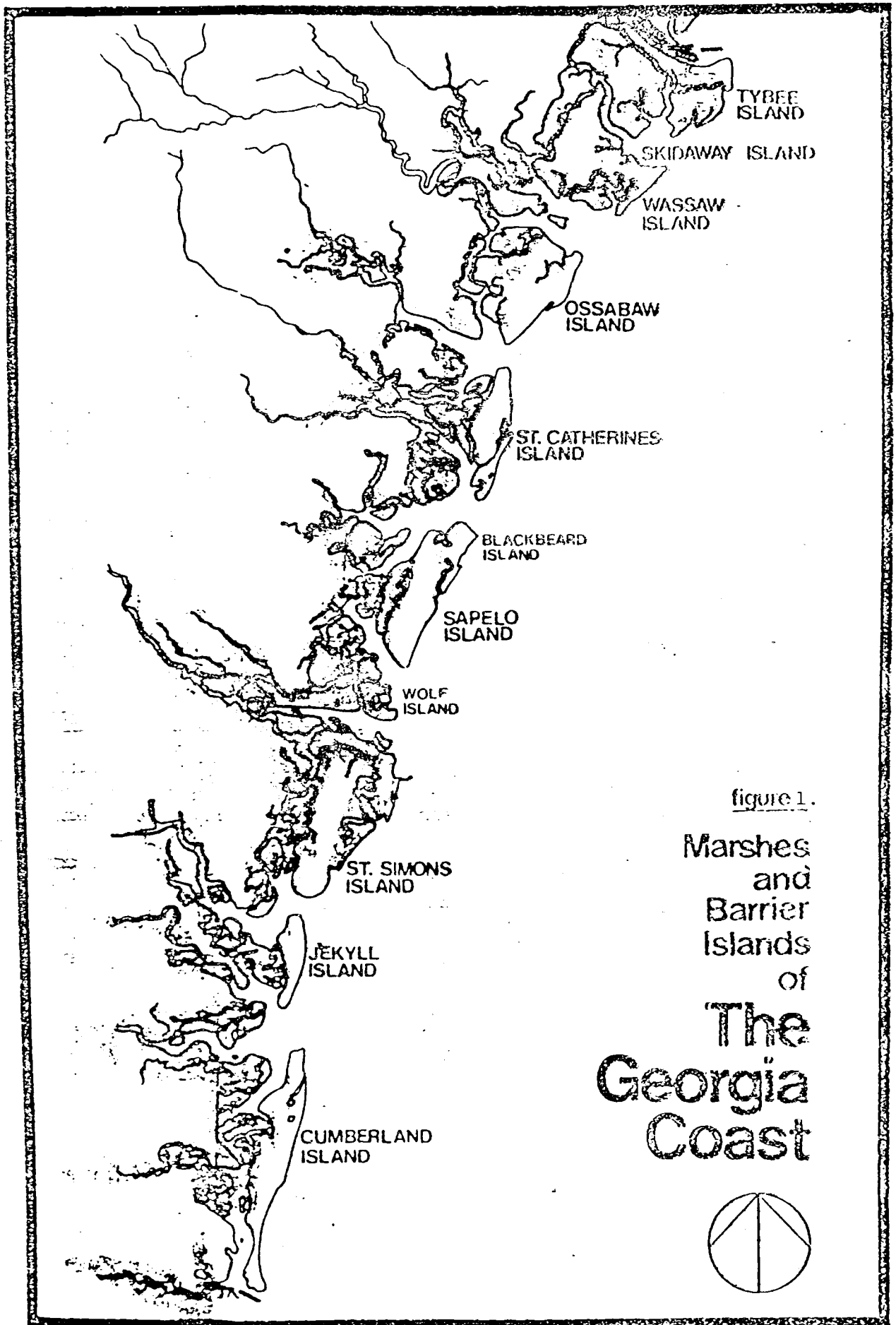
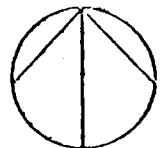


figure 1.  
Marshes  
and  
Barrier  
Islands  
of  
The  
Georgia  
Coast



MANAGEMENT FRAMEWORK FOR THE SAPELO  
ISLAND ESTUARINE SANCTUARY

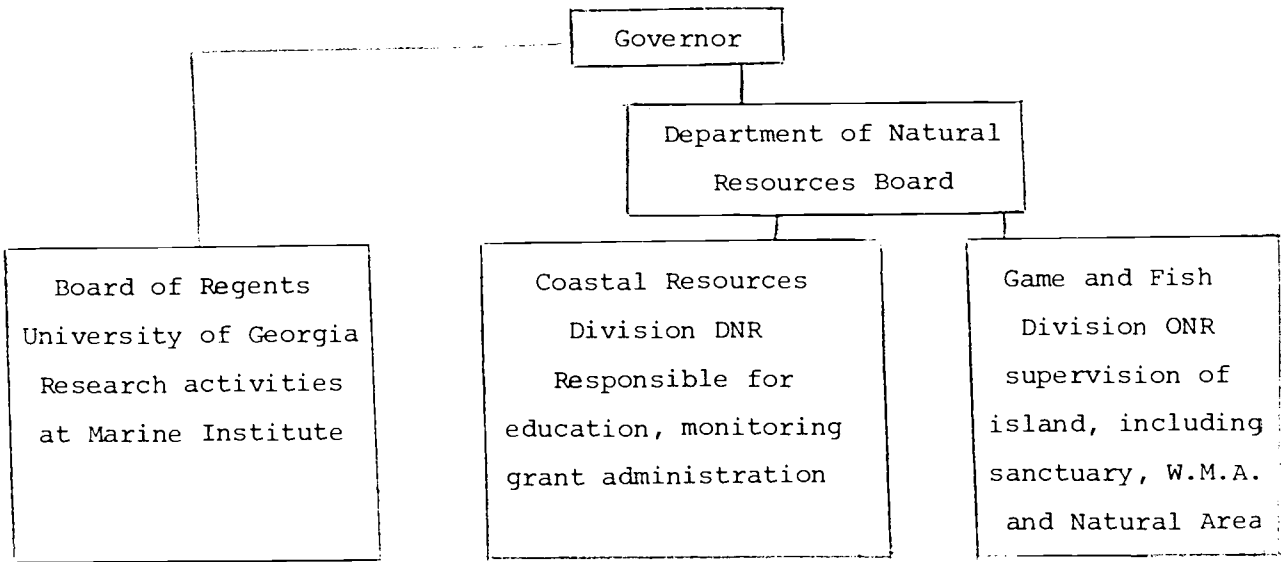
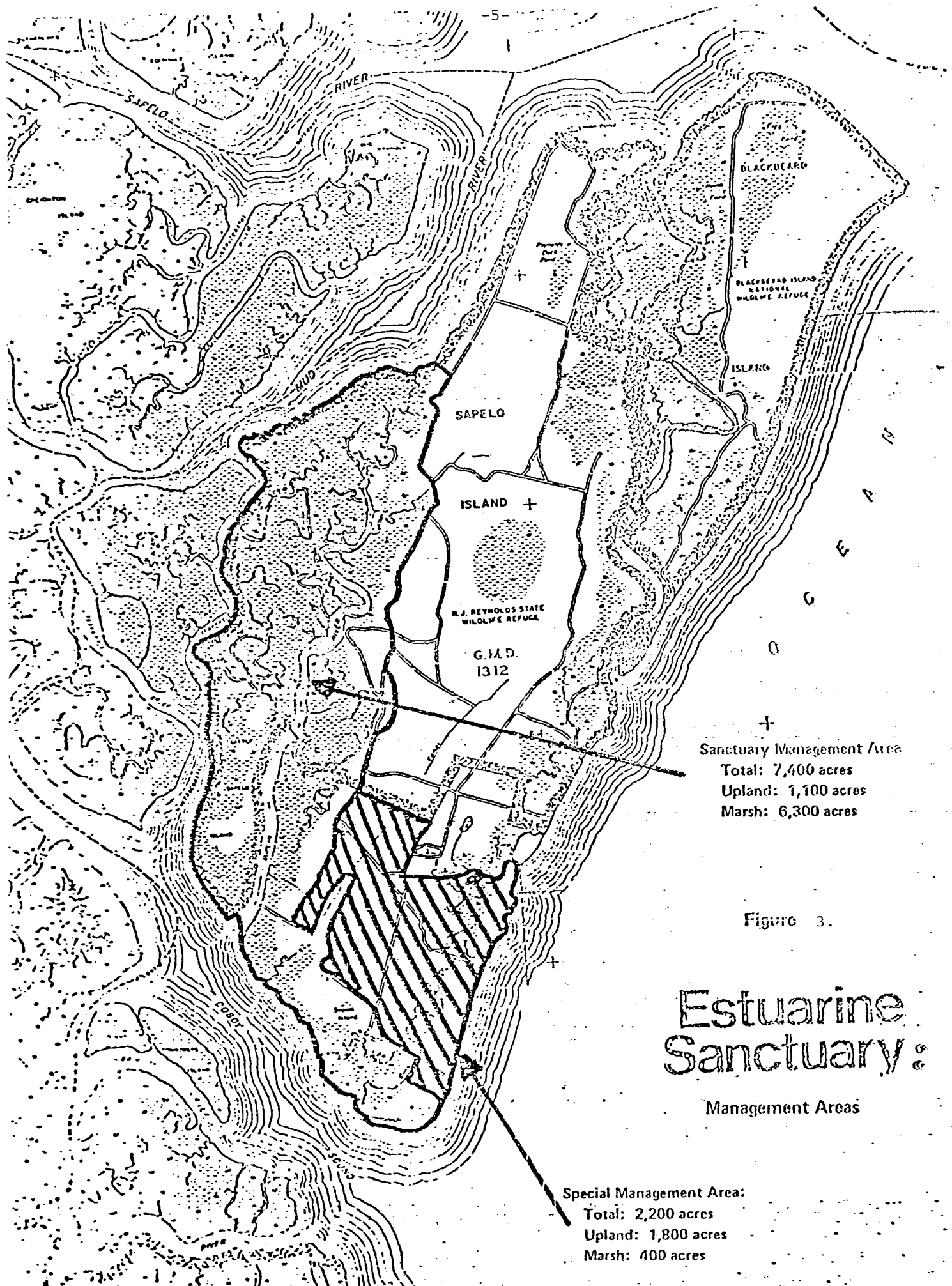


Fig. 2



+  
 Sanctuary Management Area  
 Total: 7,400 acres  
 Upland: 1,100 acres  
 Marsh: 6,300 acres

Figure 3.

# Estuarine Sanctuary:

Management Areas

Special Management Area:  
 Total: 2,200 acres  
 Upland: 1,800 acres  
 Marsh: 400 acres



backing of the Sapelo Island Research Foundation, a private foundation established by R. J. Reynold's, a previous owner of the island. One of the main considerations when proposing the Duplin River estuary as a sanctuary site was the existence of an extensive data bank.

Additional buffers for the Sanctuary include Blackbeard Island to the northeast, and Wolf Island to the south, both federal wildlife refuges, and the state managed Altama Waterfowl Management Area (see fig.4).

#### CLASSIFICATION

The policy statement for the Sapelo Island Estuarine Sanctuary states that the primary purpose of the Sanctuary is to serve as a research facility focusing on the site's natural and cultural resources (State of Georgia, 1976a). Education, interpretation and recreation are identified as secondary purposes that are to be permitted only as long as they do not interfere with the primary objective.

The Sapelo Island Estuarine Sanctuary is designated as a DNR Natural Area, as well as a Unique Natural Area using the federal Heritage Trust and Recreation Service (formally Bureau of Outdoor Recreation) classification system. (State of Georgia, 1976b).

#### MANAGEMENT OBJECTIVES

The Sapelo Island Estuarine Sanctuary will be managed to preserve the estuarine ecosystem in a natural and undisturbed state. No uses which significantly alter the natural ecosystems will be permitted.

The Sanctuary is not intended as a recreation area, but shall be available to the general public for existing low intensity recreation such as fishing, so long as the level and kind of use does not detract from or alter the natural environment or research use of the Sanctuary. The island itself is generally

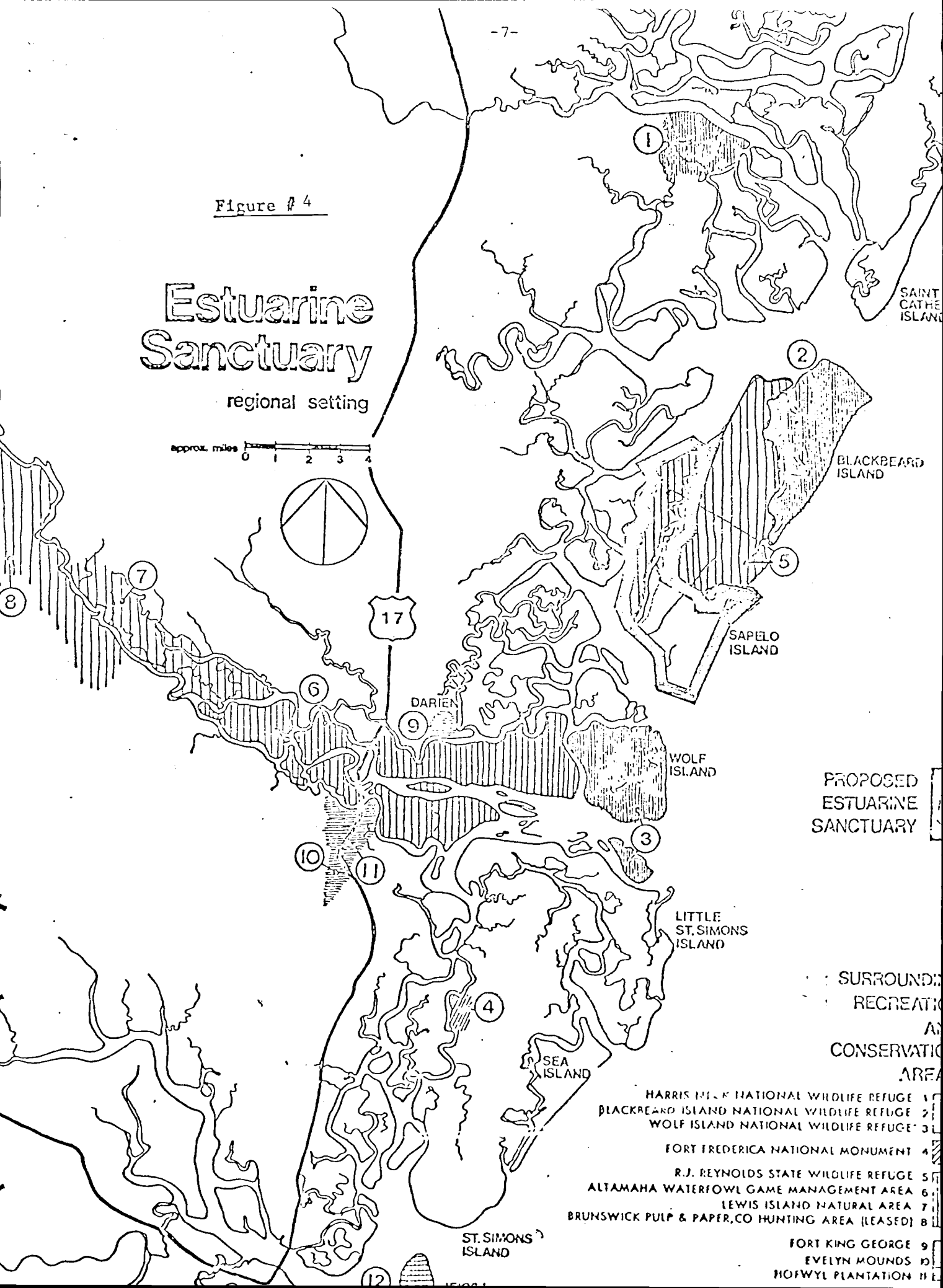
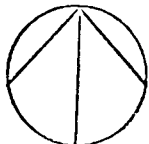
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Figure # 4

# Estuarine Sanctuary

regional setting

approx. miles 0 1 2 3 4



SANT CATHE ISLAND

BLACKBEARD ISLAND

SAPELO ISLAND

WOLF ISLAND

LITTLE ST. SIMONS ISLAND

SEA ISLAND

ST. SIMONS ISLAND

PROPOSED ESTUARINE SANCTUARY

SURROUNDING RECREATION AND CONSERVATION AREA

- HARRIS MILK NATIONAL WILDLIFE REFUGE 1
- BLACKBEARD ISLAND NATIONAL WILDLIFE REFUGE 2
- WOLF ISLAND NATIONAL WILDLIFE REFUGE 3
- FORT FREDERICA NATIONAL MONUMENT 4
- R.J. REYNOLDS STATE WILDLIFE REFUGE 5
- ALTAMAHA WATERFOWL GAME MANAGEMENT AREA 6
- LEWIS ISLAND NATURAL AREA 7
- BRUNSWICK PULP & PAPER, CO HUNTING AREA (LEASED) 8
- FORT KING GEORGE 9
- EVELYN MOUNDS 10
- HOFWYL PLANTATION 11

off limits for public recreation, except during scheduled hunts. If a research activity can not be conducted, or if its progress will be disrupted by a recreational activity, the recreation activity will constitute an unacceptably detrimental effect and will not be permitted. A particular use should be restricted if overuse threatens the integrity of the Sanctuary.

In accordance with the purpose, classification and character of the Sanctuary, the following sections outline policies which will form the basis of the management.

A. Objectives for Sanctuary Educational and Research Programs:

1. To design and conduct a long term monitoring program to provide a long range record of natural or man-induced fluctuations in the area, as well as a record of diversity.
2. To design and conduct resource and management studies to assess the impact of management practices and uses of the sanctuary resources.
3. To utilize the sanctuary area as a source of organisms for various basic studies such as physiology, biochemistry, microbiology, etc.
4. To disseminate information on coastal and estuarine processes through scientific and popular publication of research findings and public education and tours of the sanctuary to encourage maximum use of current information.
5. To increase public awareness of the natural resources and ecological communities of the sanctuary and surrounding coastal areas.
6. To conduct archaeological and historical research and inventories.
7. To obtain a broad data base that enables a thorough description of the natural biophysical characteristics of the salt marsh system.
8. To conduct systems analysis and related studies to allow for the construction of models of the salt marsh ecosystem.
9. To encourage intra-state research especially with the other three states in the Carolinian biogeographic region.
10. To promote research aimed at determining the effect of upstream developments on the Altamaha and Sapelo Rivers.
11. To encourage research to assess the role riverine input plays in the salt marsh system.

B. Natural Resource Management Policies

Beaches and Dunes

No vehicular traffic shall be allowed on beaches except as needed for research and DNR management purposes.

Dunes will be closed to all uses and pedestrian traffic with the exception of guided interpretive programs and research. All public access over the dunes will be on boardwalks or designated trails in wilderness areas. No vehicular traffic will be permitted except for management and law enforcement purposes. The dunes will be allowed to revegetate naturally as random pedestrian passage and feral grazing are reduced or eliminated. No revegetation program, fencing or artificial stabilization will be undertaken.

Other Areas

The salt marsh, freshwater pond environments and forested areas shall be managed to promote natural ecological succession and minimize the adverse impacts of man's activities.

Rare or endangered species shall be protected.

Prescribed burning and other management practices used in the adjacent Wildlife Management Area shall be allowed in the Sanctuary with special precautions in areas of natural and cultural significance.

No new dikes or impoundments will be constructed on Sanctuary lands.

C. Cultural Resource Management Policy

Historic structures, archaeological sites and other historic remains shall be identified and preserved. A historic resource study of the sanctuary should be conducted and consulted before any construction takes place. Significant structures shall be maintained and made available to the public as appropriate.

D. Recreational Use Policy

Education/Interpretation

Public tours of the Sanctuary shall continue to be arranged for groups of adults and groups of primary and secondary school children to acquaint them

with the natural and cultural resources of the area and the processes and ecology of the estuarine ecosystem. Additional sanctuary-related public education programs shall be operated on the mainland to reach a greater audience. Publication of research findings shall continue to take place as an important element of the education program. Public seminars and conferences shall be held on the island and elsewhere to provide additional information on marine and coastal resource use and management.

#### Hunting

Hunting for small game including marsh hens, shall be a permitted use of the Sanctuary. Scheduled public deer hunts will be permitted in the portion of the Sanctuary immediately adjacent to the Sapelo Island Wildlife Management Area.

#### Primitive Camping

No camps will be constructed in the Sapelo Island Estuarine Sanctuary. Hunters on the Sapelo Island Wildlife Management Area (W.M.A.) are to be accommodated at the hunters camp at Moses Hammock.

#### Walking

Unaccompanied tours of the sanctuary are not a desirable use due to the sensitivity of research instruments and experiments to human interference. Walking trails may be established in the adjacent Natural Area. If trails are established, appropriate means of restricting visitors from the sanctuary, and the Marine Institute must be developed.

#### Swimming

Swimming and public use of beaches within the sanctuary boundaries is not a programmed use due to the nature of research carried on in the beach/dune and nearshore areas. Public access to the adjacent Natural Area may be established but adequate steps would have to be taken to insure that increased public use would not disrupt on-going research.

### Picnicking

Picnicking should not be an encouraged use of the Sanctuary itself, but may occur in designated areas in the adjacent Natural Area. A picnic gazebo adjacent to the Sanctuary at Nannygoat Beach will be available.

### Recreational Boating

Boating for pleasure is an allowed use of the Duplin River estuary. Waterskiing and high-speed boating will not be encouraged, due to their potentially detrimental environmental impact.

### Recreational Fishing

Sport fishing is an authorized activity in the Sapelo Island Estuarine Sanctuary. Oyster harvesting for personal consumption may be an authorized use in designated areas of the estuary.

### Nature Study

Nature study is an allowable use of the Sanctuary. Formal nature study will be arranged through guided tours. Expansion of the program shall occur gradually in phases and only after determination that no measurable impacts in the sanctuary have occurred

### Commercial Fishing

Bait fishing and crabbing will be permitted in the waters around Sapelo Island pursuant to current DNR regulations. Effects of these activities shall be monitored to ensure that they have no detrimental effect on the sanctuary. Other commercial fishing has not and will not be allowed in the Duplin River estuary.

## E. RESTRICTED USE POLICY

Activities which shall be allowed on a restricted basis in the Sanctuary include:

a) Residential use at the current level; except for increases in residential use as necessary in connection with management of the island.

b) Motorized vehicles under the regulation of the Resident Manager.

c) The use of pesticides, herbicides, and fertilizers

i) only in the area immediate vicinity of residences for household purposes, or

ii) in an approved research project where the effects can be contained or reversed provided that such activities shall be restricted to an area less than one tenth of one percent of the Sanctuary area or

iii) in circumstances where an eminent threat to the Island flora and/or fauna exists.

d) Timber management only those trees necessary for the controlled burning program will be removed. Nah've flora will be encouraged to re-establish itself in cleared areas.

#### PROHIBITED USE POLICY

The following activities will be prohibited in the Sanctuary:

a) mineral removal

b) dredging, except as in the opinion of DNR, as necessary at Marsh Landing, Barn Creek, or in South End Creek in order to provide necessary and historic access to the Island. This opinion shall be based on consideration of scientific data on the possible impact of such dredging on the environment of the Sanctuary.

d) chemical or pollutant discharge except as allowable under Georgia water quality laws.

e) any other alterations of the environment which would harm the integrity of the area and be inconsistent with purposes for which the Sanctuary was established.

#### G. PROGRAM ADMINISTRATION AND DESCRIPTION

##### A. General Administration

Management of R. J. Reynold's Wildlife Refuge is the responsibility of the Game and Fish Division of the Department of Natural Resources. They are responsible for the day to day supervision and security of the entire island, including Estuarine Sanctuary. Additional responsibilities of the Game and Fish Division

include general management of the Sanctuary in accordance with the permitted uses of the Sanctuary area, with ONR policies, and with the needs of the University of Georgia Marine Institute. Maintenance and operation of the state owned ferry boat, maintenance of display areas at Meridian and Long Tabby, and maintenance of the state owned bus for visitor use are activities included in the general management of the island.

Responsibility for policy and programs related to research in the Estuarine Sanctuary will continue to lie with the Board of Regents of the University of Georgia. Responsibilities include maintenance of research buildings, facilities and grounds.

The Coastal Resources Division of DNR shall be responsible for:

- (1) Coordinating the Sapelo Island Estuarine Sanctuary Program with Georgia's overall coastal zone management program.
- (2) Undertaking comprehensive review of the Sanctuary Program.
- (3) continuing a comprehensive public education program that includes guided tours of the Estuarine Sanctuary, mainland based education programs and various publications.
- (4) Coordination of a monitoring program of the Duplin River and water column.
- (5) Grant administration.
- (6) Preparation of displays for the Meridian welcome center and Long Tabby display area. Additional interpretive aids will be needed for the proposed marsh and dune boardwalks.

#### Future Administrative Alternatives

##### Marine and Estuarine Sanctuary Coordination

If the proposed marine sanctuary at Gray's Reef (Sapelo Live Bottom) is



approved, the Coastal Resources Division of DNR is a possible entity to coordinate its management (see fig. 5). Since many of the goals of the two sanctuary programs are similar, a sanctuary coordinator for both programs would be one management alternative. The coordinator would be responsible for coordinating educationa, monitoring and grant administration programs for the two sanctuaries.

Closer link with coastal zone management

A closer link between the Estuarine Sanctuary and the State coastal zone management program needs to be made. One possible alternative is to place responsibility for Sanctuary coordination in the Coastal Zone Management Section of CRD.

Advisory Group

Establishment of a Sanctuary advisory committee is a primary recommendation at this time. Present public input into Sanctuary management is limited to evaluations of the tour programs by visitors. While this is valuable, additional input is desirable if broader community support is to be gained. Greater community participation in the Sanctuary Program is needed to promote a feeling of ownership and support. Such an advisory committee would serve a "watchdog" role in insuring that Sanctuary management was consistent with the goals of the Sanctuary Program.

In the initial Sanctuary Proposal, three groups are outlined: a management advisory committee, a research advisory committee and a citizens advisory committee. The creation of three committees would be a cumbersome management unit, but there should be one advisory group to help management of the Sanctuary. Duties of this group could be as follows:

- 1) responsible for advising the Commissioner and Board of Natural Resources on overall management principles and practices within the Sanctuary and adjacent areas.

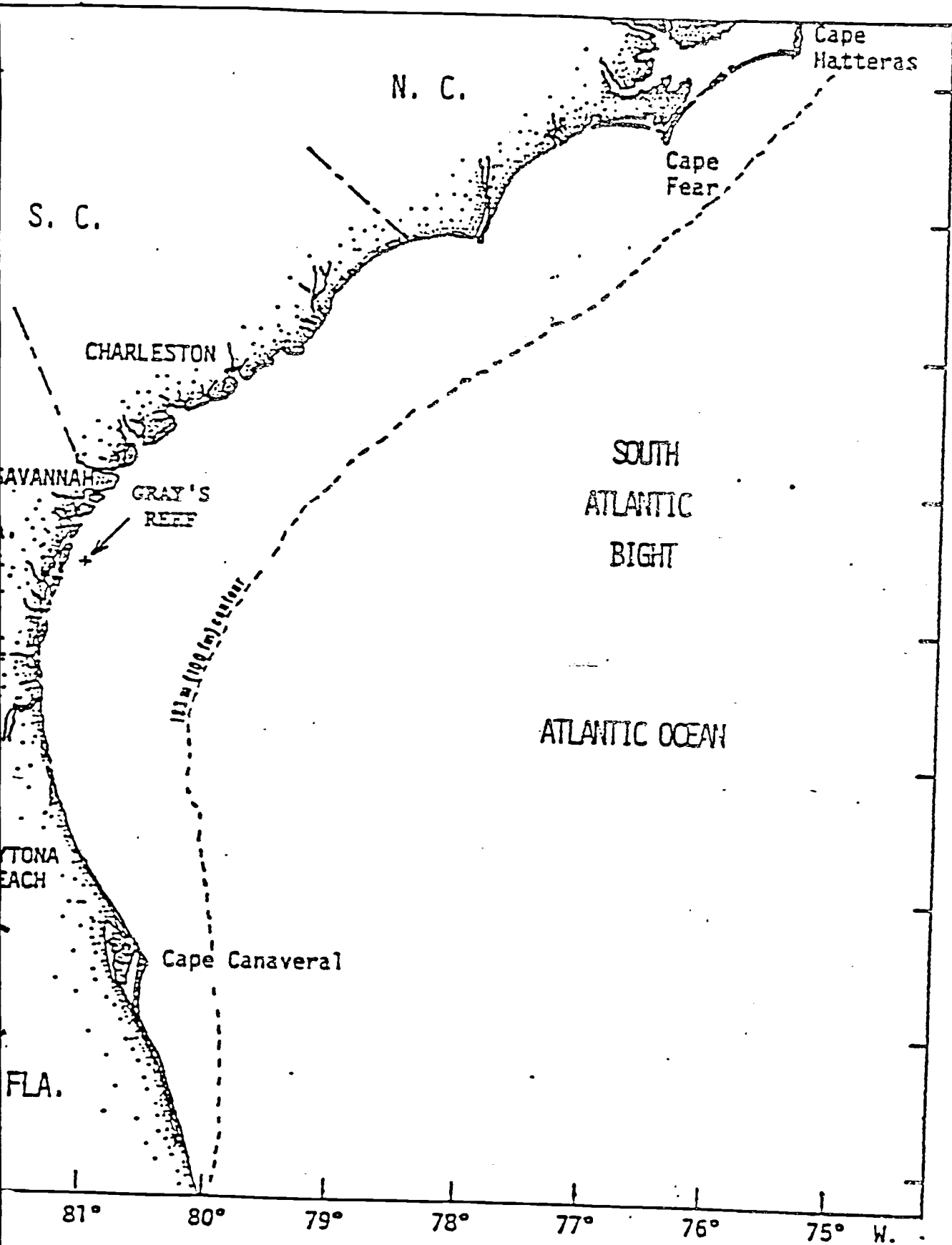


Figure 5 The South Atlantic Bight (Cape Hatteras to Cape Canaveral) of the Western Atlantic Ocean. (Harris, 1979).

- 2) responsible for advising the University system on research needs within the four states of the Carolinian biogeographic region especially as related to coastal zone management programs.

Membership in this committee could include (or suitable alternatives):

- 1) a representative of the Sapelo Island Research Foundation
- 2) a representative from the DNR involved in estuarine research
- 3) a representative of the Coastal Plains Regional Commission
- 4) a representative of O.C.Z.M.
- 5) a representative of the Board of Regents
- 6) one lay person knowledgeable in estuarine science
- 7) two representatives from McIntosh County, one an elected official and one a resident of Hog Hammock
- 8) two estuarine scientists
- 9) one lay person knowledgeable in environmental education

At least three of the four members in numbers 5, 6 and 8 should be from the other states in the Carolinian region.

The need for public input is great. At present there is no vehicle for public involvement in sanctuary management.

An alternative advisory committee is proposed in the Research section.

B. Education and Visitor Use Plan

Objectives:

To increase appreciation and understanding of the sanctuary's ecological communities, the geological processes that shape the island system, the natural and historic resources of the island, the relationship between man's activities and the island's communities and processes.

The primary goal of the education/interpretation experience will be to help visitors appreciate the natural resources and promote an appreciation and wise use of resources, and a greater visitor awareness of his surroundings. To accomplish this end, the public education program shall be designed to reach

as great a portion of the public as possible. Tools to enable this communication will include tours of the sanctuary, programs to local groups including teachers, slide presentations, brochures, newsletter and newspaper articles, workshops and seminars, lecture series on estuarines and estuarine sanctuaries, and marsh and dune walks on Sapelo Island and adjacent barrier islands. Goals of the education program should not stop at environmental awareness but must stress action by encouraging implementation of management policies in coastal environments.

### Visitor Facilities

#### Mainland Exhibit Area-Brunswick

A mainland based exhibit area is available to the public at the Brunswick headquarters of the CRD. A centrally located mainland based site reaches a greater audience; including school and public groups unable or unwilling to visit the Sanctuary itself. Exhibits, displays and programs offered at the Brunswick headquarters also serve as an introduction to the Sanctuary Program to the many individuals who are unaware of it.

#### Overlook Park Boardwalk

A boardwalk constructed adjacent to the CRD headquarters offers an opportunity for local school and public groups to view a typical salt marsh in a semiurban environment. Guided tours for the boardwalk are available; interpretive aids will be added to make the marshwalk a self-guided experience as well. Comparisons can be drawn between marshes in more pristine areas and the marshes observed from the Overlook Park Boardwalk. Teacher orientation to marsh ecology and education can be accomplished in this area.

#### Sapelo Island Experience

##### Mainland Visitor Center-Meridian

The public education/interpretive program will begin at Meridian Dock, the

departure point for trips to Sapelo Island. The dock house/visitor center will serve as an orientation site for visitors waiting for the boat's departure. Posters, photographic material, maps, and other graphic interpretive aids will be posted on the walls. An interpreter/tour guide will be available before each tour to brief the visitors on marsh ecology, tidal action, characteristics of the estuary and other environmental features seen during the boat ride. Island visitors will be asked to arrive at the mainland site in advance of the departure time to allow time for the audio-visual orientation. Phone conversations and a confirmation letter for boat reservations will alert visitors to the available facilities and lack of food services on the island. Additional visitors without reservations will be added to the tour on a space available basis. The mainland visitor center will also serve as an introduction to the sanctuary program for those visitors who do not have the time, required reservations or interest to visit the island. This will be an important aspect of the Sanctuary program due to the limited visitation to the island and the requirement of a visitor time commitment.

#### Boat Ride

Once the mainland welcome center is completed, no organized interpretive program will be conducted on the boat ride. Visitors will be free to interpret features and estuarine relationships on their own. The tour guide/interpreter will be available to answer any questions during the 30 minute ride.

#### Long Tabby (see fig. 5)

Historical displays will be posted in one room of the Long Tabby complex, itself an historic site and headquarters for the Game and Fish Division operations on the island. Photographs and posters will document and explain historic and natural features on the island.

# POINTS OF INTEREST

1. Lighthouse: 1820-1933
2. Main (South End) House
3. UGMI lab area
4. Long Tabby - tabby ruins
5. Boys' Camp Site
6. Barn Creek dock
7. Indian mound
8. "Chocolate"
9. Indian Shell Ring
10. 19th century ruins
11. Traces of "Bourbon"
12. Church - Raccoon Bluff

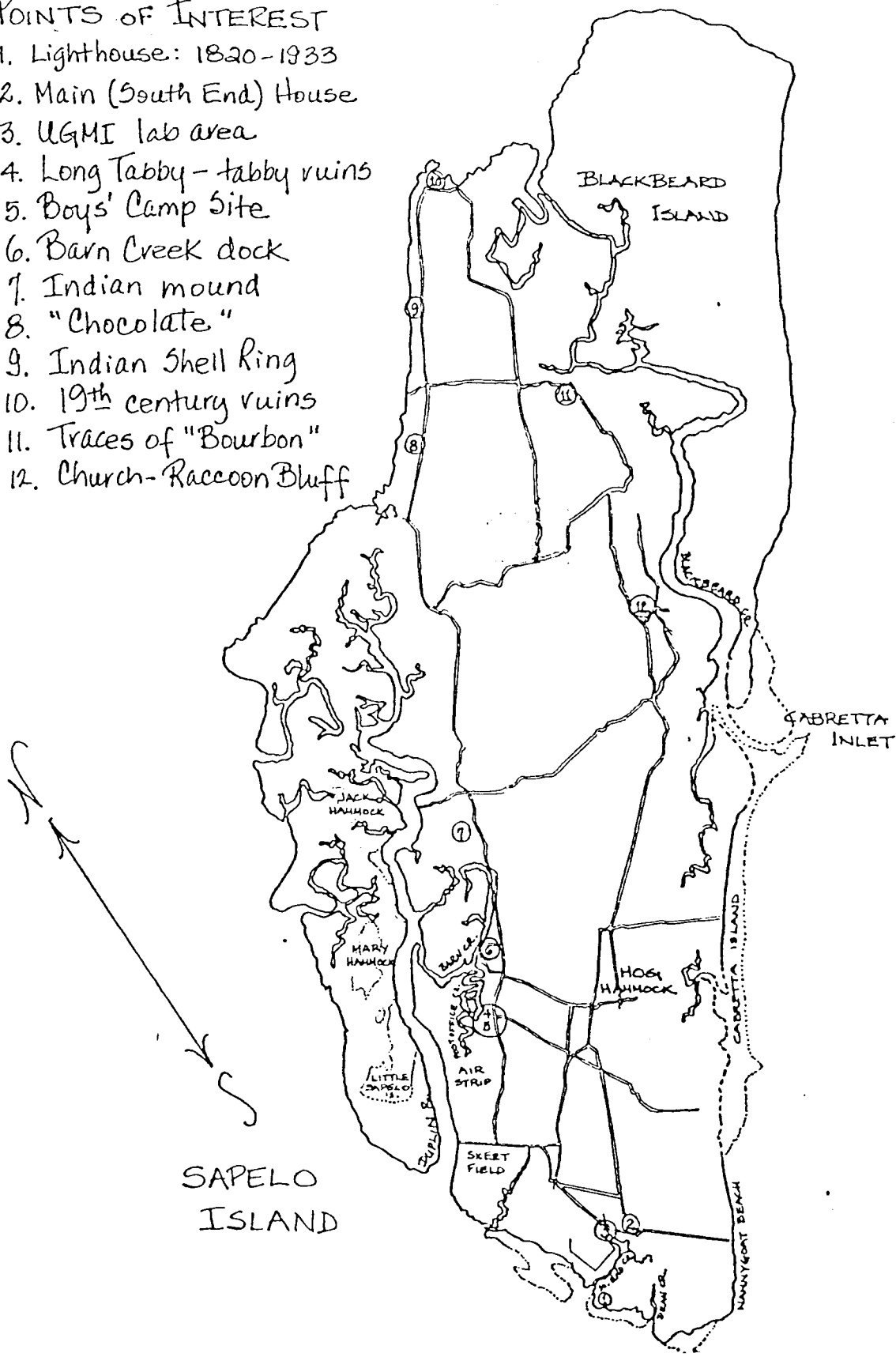


fig 6

### Nannygoat Beach Facilities

A boardwalk providing access to the beach will be constructed at Nannygoat Beach at the end of the access road. The boardwalk will minimize damage to the dune system and will provide a better vantage point for observation and interpretation of the dune environment. Interpretative discussion and aids at this site will concentrate on coastal and shoreline processes, dune dynamics, the sand sharing system and life of dunal areas. Stress will be placed on floral and faunal adaptation to the harsh dunal environment, and on the dynamic nature of the shoreline system. The delicate nature of certain parts of the dune system will be identified and used to explain such legislation as the Sea Oats Law, and the Shoreline Assistance Act of 1979.

A picnic gazebo attached to the boardwalk, and restroom facilities behind the primary dune line will be provided for visitors. Public use of the boardwalk/gazebo will initially take place as part of the organized tours. Eventually, visitors wishing a longer beach experience, might have the option of remaining at the beach after a tour. (See later section for discussion of carrying capacity).

### Foundation Dock

A boardwalk extension of the existing dock facilities will be constructed to provide better public access to a diverse high marsh environment without adversely impacting the marsh environment. Interpretation of the marsh system, explanation of salt marsh plant types and important functions of the salt marsh are and will be continued to be carried out at this site.

### Marine Institute

An exhibit room at the Marine Institute focuses on the natural history and geography of the island with an emphasis on estuarine processes. Past and present research at the Marine Institute is stressed in the exhibits.

An older exhibit area displaying native marine and terrestrial fauna of Sapelo Island will also continue to be available to the public.

## Interpretive Programs

### Tours

The core of the Sapelo Island Estuarine Sanctuary interpretive program will be the regularly scheduled tours. Typical tours include visitation of all the island based visitor facilities described above. A typical tour would include an orientation at the Meridian Welcome Center, a boat trip to the island, a marsh walk at Foundation Dock, a tour of the Long Tabby display area and historic tabby ruins, a trip to the Marine Institute display area and facilities, with discussion on past and present research, a dune and beach walk and a review of present resource management programs in the Sanctuary and adjacent Wildlife Management Area.

Special programs will be arranged with school and public groups as time and staff availability permit. Programs may include but are not limited to: plant ecology studies of the various island habitants, archaeological survey of important historic sites, and beach and dune studies.

A suitable site for an upland habitat walk should be identified and incorporated into the tours as appropriate. A trail system using existing roads may be developed for more in-depth upland studies. Studies to determine the impact of such development would have to be conducted before opening it to the public. Self-guided tours of the trail system would only be allowed if interpretive staff determined that environmental impact would be minimal and if the group was of an appropriate orientation. Interpretive guides and identifying markers would have to be developed by CRD staff to improve the learning experience.

### Mainland Programs

Mainland based sanctuary related programs offer a more flexible public education experience than would be available only through island visitation. Programs will include but not be limited to presentations to school and public groups, marshwalks on the Brunswick/DNR Overlook Park Boardwalk, short programs



using the DNR exhibition area, seminars and workshops to local colleges and civic groups.

#### Optimal tour size

In determining the optimum size of tour groups in the Sanctuary three factors must be taken into account.

1) A quality experience should be guaranteed each visitor to the island. If too many people participate in an education program at one time, its value is diminished. Personal contact and interaction are necessary for a successful education program.

2) Physical limits There are two types of physical limitations on Sapelo Island; facility and environmental constraints. Tours are escorted by bus with a seating capacity of 28. The addition of a second bus would strain personnel capacity and would take away from the island experience which is for the most part uncluttered by man's activities.

The boat which transport tour groups to the island also serves the inhabitants of the island, and commuting employees, consideration must be given to the resident users of the ferry service.

Environmental constraints include a limited beach front. The Sapelo Island Natural Area encompasses 1½ miles of beach as compared to Cumberland Island, a nearby natural seashore, which has 17 miles of beach front available to the public.

3) Boat fuel. The number of tours to the island will also be controlled by fuel considerations. Scheduled boat runs have recently been cut to conserve fuel.

#### Recommendations

i) Tour size should be limited to 28 people. Personal experience of the tour guides has indicated that the educational experience is diminished as the number of participants increases over about 30 individuals. (Personal

communication, J. Phillips, A. Allen).

ii) Public tours should be increased to 3 times weekly during the summer months of June, July, August and half of September. Visitor requests at this time indicate a greater public demand that is not being met by the twice weekly tours (Personnal communications, E. Waters). Winter visitation is substantially lower, and appears to be adequately met the twice weekly tour schedule now in effect. If visitor interest should change or dramatically increase the number of tours could be increased to a maximum of four times a week. Present constraint on the number of weekly trips is boat scheduling. The number of tours should not be increased until boardwalk facilities are completed to minimize for traffic on the dune system.

#### Recommendations for Education Program

1) Greater use of the Sanctuary by university and community college classes should be encouraged. Biology, oceanography, history, and management classes could all use the Sanctuary for field and longterm research projects with the permission of the Marine Institute and/or DNR.

2) Boat tours of the estuary itself would provide additional educational/recreational experience to the public that the present, upland oriented tours do not. Guided canoe trips in salt marsh creeks of the Duplin River estuary would be one option provided tides and weather conditions were appropriate.

3) Assistance to schools in initiating their own estuarine studies must be increased, teachers need to be prepared to teach estuarine education in their own classrooms. One day teacher's training sessions involving marsh walks could be provided for this purpose by CRD staff. Lists of films and curriculum on marine education could be provided to local schools.

4) Media representative should become more involved in Sapelo Island Sanctuary activities to help promote and advertise them. Decision makers

are another important group that need increased exposure to the value and nature of coastal systems in general and the Sapelo Island Estuarine Sanctuary in particular.

C. Research Plan

The Marine Institute will continue to be responsible for research programs in the Sapelo Island Estuarine Sanctuary. Greater interaction of the Marine Institute with the Sanctuary Program should be encouraged. Options for increasing this interaction include involving Marine Institute scientists in public seminars on and off the island, cooperating with Marine Institute scientists on monitoring activities, and creation of a research advisory group. The facilities of the Marine Institute have been and will continue to be open to scientists able to provide their own funding, from the state of Georgia and other states as well, as appropriate and as space permits. To encourage and facilitate use of the Sanctuary by scientists from other institutions in the Carolinian area, a Sanctuary Research Advisory Committee should be established. The Research Group would be advisory to the Board of Regents of the Sapelo Island Research Foundation and invited representatives of institutions in the Carolinian area having estuarine research interests. Other members should include representatives of the DNR, Georgia Coastal Management Board, The Coastal Plains Regional Commission, and the O.C.Z.M. This group would act as a review board to determine research needs especially those related to coastal zone management programs in the four states, to determine research priorities, and to advise on the nature and content of the projects. An additional responsibility would be to review the results of the CRD monitoring program. Such a committee is also urged by the

Federal O.C.Z.M. Sanctuary Office.

The need for such an advisory committee or sub-committee exists to increase the application of sanctuary based research to coastal zone management problems, and to increase the use of the Sanctuary by other states in the same biogeographic region.

D. Monitoring Plan

Objectives:

Objectives of the monitoring program for the Sapelo Island Estuarine Sanctuary are as follows. (State of Georgia, 1979).

- to better understand the estuarine ecosystem and the inter-relationships of its many components
- to identify changes in the natural, relatively undisturbed estuarine ecosystem and potential causes of those changes
- to utilize the data base for management of the Sanctuary and its surrounding watershed.

The monitoring program, to be conducted by CRD staff will consist of the following:

- 1) Estimation of standing crop biomass. Sampling of the major plant species will be conducted every spring and fall. (For a description of methods, see Monitoring Program description in the 1979 Grant Application).
- 2) Population density assessment for major macrofauna. The assessment will take place simultaneously with the biannual plant sampling.
- 3) Estuarine nekton sampling to determine ecological community indices.
- 4) Vegetation change assessment using low level false color infrared photography. Photographs would be obtained in the early fall every second year.
- 5) Determination of heavy metal and pesticide concentration. Plant and animal tissues from the Duplin Estuarine Sanctuary will be monitored for these concentrations semiannually.

Monitoring of the physical environment will include the following:

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- 6) Collection and analysis of tidal data. Data from two tidal stations in the Duplin River will be compared with National Ocean Survey primary tide stations in Georgia and Florida.
- 7) Documentation of erosion and accretion changes in marsh and stream channels. Aerial photography from plant community monitoring will be used for this documentation.
- 8) Comparison of nutrient chemistry of the water column and marsh drainage water. Water samples will be collected monthly as part of regular DNR vessel operations.
- 9) Integration of monitoring results with ongoing estuarine research. To assure maximum utilization of contemporary data on the sanctuary, open lines of communication with researchers in the Marine Institute will be established.

#### Recommendations

If for any reason, the CRD is not able to fulfill its obligations for the monitoring program, the Division should contract the work to outside researchers, including staff at the Marine Institute.

#### POTENTIAL ISSUES

In this section certain issues will be raised that should be addressed in the future.

##### A. Recreation

Intensive recreation is not a programmed use of the Sapelo Island Estuarine Sanctuary. Access to the Sanctuary has been and will continue to be strictly controlled since marshes, beaches and other areas serve as outdoor laboratories for scientists. The adjacent Natural Area under Game and Fish Division management, however has as its management objectives the conservation and wise recreational use of the natural resources in the area. (State of Georgia, 1976b).

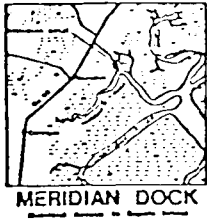
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While preservation and protection of the resource is the primary objective, compatible recreational use will also be encouraged in the future. Design of any recreational use plan for the Natural Area would have to include a description of a method to keep visitors in the Natural Area and restrict intrusion into the Wildlife Management Area and the Marine Institute. Supervised public use of the beach area should not disrupt research activities in the beach, dune and nearshore area. Projected research at the Marine Institute calls for a greater emphasis on nearshore processes beginning at the dune line. Beach research to be carried on by the Marine Institute will take place on Nannygoat Beach immediately adjacent to a proposed day-use beach. (See fig. 6).

Any recreational activities to be planned for the Natural Area must be developed only after specific studies to determine which sites are least vulnerable to public use. No public use should be allowed that will interfere with or hamper ongoing scientific research, the "raison d'être" of the adjacent Estuarine Sanctuary.

B. Carrying Capacity

An issue that needs to be considered when determining the allowable size for public education and recreation programs in the Estuarine Sanctuary is carrying capacity. Carrying capacity can be defined in many ways; one appropriate one is the maximum number of people involved in a given activity that can be supported by a given site without degrading the environment or the quality of the visitor's experience (Ike, 1974). To arrive at a numerical carrying



**ESTUARINE SANCTUARY**  
Ecological Research Area

**PUBLIC ACCESS**  
Boat Landing, Stairs

**BLACKBEARD ISLAND**  
National Wildlife Refuge

**WILDLIFE MANAGEMENT AREA**  
Hunting  
Primitive Camping (rumor use only)

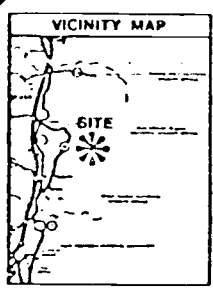
**LOG HAMMOCK**

**NATURAL AREA**  
Nature Study  
Hiking Trails

**DAY USE BEACH**  
Picnicking  
Boat Landing  
Rest Area

**ADMINISTRATIVE CENTER**  
Interpretive Center  
Marine Life Research Center

\* Point of Scenic or Interpretive Interest  
(To be incorporated into a Trail System)



**CONCEPT PLAN**

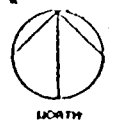
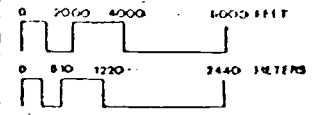


fig. 7

**SAPELO ISLAND**

STATE OF GEORGIA  
DEPARTMENT OF NATURAL RESOURCES  
Office of Planning and Research

capacity one must take into account the management objectives of the area, ecological constraints and quality of experience desired.

When designing a carrying capacity for Sapelo Island care should be taken that no activities are promoted which could be easily accomplished elsewhere. Any wilderness or educational experience on Sapelo Island should not attempt to duplicate activities found elsewhere on the Georgia and northern Florida coast. Special precautions must be taken so that public visitation has minimal impact on the research activities in the Sanctuary.

When first applying a carrying capacity plan, a low density visitation is necessary. The number of visitors can be increased following a plan of trial, observation and reassessment. Visitation can always be increased, but the reverse is not always true. Irreparable ecological damage may be incurred if too great a strain is placed on the limited available resources. Special care must be taken when working with barrier islands due to the unique flora and fauna involved.

An experimental method for establishing carrying capacity has been recommended for Cumberland Island National Seashore, the southern-most Georgia barrier island. This method could be used in determining carrying capacity for the Sapelo Island Estuarine Sanctuary as well (Ike, 1974). Following this method, only a small portion of an area designated for certain activity is originally used for that purpose. Densities can be increased fairly rapidly in these areas with careful monitoring of visitor reaction and environmental resistance. In this way, realistic carrying capacities on an area basis can be determined and the public demand for each activity assessed. The Sanctuary manager could then realistically determine acreages to be opened up for each use. This concept could be applied to nature trails, self-guided tours, beach visitation, etc.



### Conflicts

To avoid potential conflicts between the various organizations involved with the Sapelo Island Estuarine Sanctuary, a more formal method of communication may have to be developed. During recreational development of the Natural Area communication between all agencies will be especially vital. Establishment of an advisory committee as proposed earlier with representatives from all involved parties may provide a partial solution.

### SUMMARY

Long-term management objectives of the Sapelo Island Estuarine Sanctuary include preservation of the resource, and development of comprehensive research and educational programs that are compatible with the resource. At Sapelo Island, research facilities exist but a greater emphasis needs to be placed on how the information once acquired can be distributed to the public, and applied to management problems in the coastal zone. Public input and support of the Sanctuary needs to be increased. Potentially conflicting uses, such as beach recreation and research needs to be resolved in adjacent areas as well as in the Sanctuary itself.

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APPENDIX I

COASTAL ZONE MANAGEMENT ACT, SECTION 312, ESTUARINE SANCTUARIES

PUBLIC LAW 92-583

October 12, 1972

homes or regular places of business may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by section 5703 of title 5, United States Code, for individuals in the Government service employed intermittently.

80 Stat. 499;  
83 Stat. 190.

#### ESTUARINE SANCTUARIES

SEC. 312. The Secretary, in accordance with rules and regulations promulgated by him, is authorized to make available to a coastal state grants of up to 50 per centum of the costs of acquisition, development, and operation of estuarine sanctuaries for the purpose of creating natural field laboratories to gather data and make studies of the natural and human processes occurring within the estuaries of the coastal zone. The Federal share of the cost for each such sanctuary shall not exceed \$2,000,000. No Federal funds received pursuant to section 305 or section 306 shall be used for the purpose of this section.

Grants.

Federal share.

#### ANNUAL REPORT

SEC. 313. (a) The Secretary shall prepare and submit to the President for transmittal to the Congress not later than November 1 of each year a report on the administration of this title for the preceding fiscal year. The report shall include but not be restricted to (1) an identification of the state programs approved pursuant to this title during the preceding Federal fiscal year and a description of those programs; (2) a listing of the states participating in the provisions of this title and a description of the status of each state's programs and its accomplishments during the preceding Federal fiscal year; (3) an itemization of the allocation of funds to the various coastal states and a breakdown of the major projects and areas on which these funds were expended; (4) an identification of any state programs which have been reviewed and disapproved or with respect to which grants have been terminated under this title, and a statement of the reasons for such action; (5) a listing of all activities and projects which, pursuant to the provisions of subsection (c) or subsection (d) of section 307, are not consistent with an applicable approved state management program; (6) a summary of the regulations issued by the Secretary or in effect during the preceding Federal fiscal year; (7) a summary of a coordinated national strategy and program for the Nation's coastal zone including identification and discussion of Federal, regional, state, and local responsibilities and functions therein; (8) a summary of outstanding problems arising in the administration of this title in order of priority; and (9) such other information as may be appropriate.

(b) The report required by subsection (a) shall contain such recommendations for additional legislation as the Secretary deems necessary to achieve the objectives of this title and enhance its effective operation.

#### RULES AND REGULATIONS

SEC. 314. The Secretary shall develop and promulgate, pursuant to section 553 of title 5, United States Code, after notice and opportunity for full participation by relevant Federal agencies, state agencies, local governments, regional organizations, port authorities, and other interested parties, both public and private, such rules and regulations as may be necessary to carry out the provisions of this title.

80 Stat. 383.

## AUTHORIZATION OF APPROPRIATIONS

SEC. 315. (a) There are authorized to be appropriated—

(1) the sum of \$9,000,000 for the fiscal year ending June 30, 1973, and for each of the fiscal years 1974 through 1977 for grants under section 305, to remain available until expended;

(2) such sums, not to exceed \$30,000,000, for the fiscal year ending June 30, 1974, and for each of the fiscal years 1975 through 1977, as may be necessary, for grants under section 306 to remain available until expended; and

(3) such sums, not to exceed \$6,000,000 for the fiscal year ending June 30, 1974, as may be necessary, for grants under section 312, to remain available until expended.

(b) There are also authorized to be appropriated such sums, not to exceed \$3,000,000, for fiscal year 1973 and for each of the four succeeding fiscal years, as may be necessary for administrative expenses incident to the administration of this title.

Approved October 27, 1972.

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LEGISLATIVE HISTORY:

HOUSE REPORTS: No. 92-1049 accompanying H.R. 14146 (Comm. on Merchant Marine and Fisheries) and No. 92-1544 (Comm. of Conference).

SENATE REPORT No. 92-753 (Comm. on Commerce).

CONGRESSIONAL RECORD, Vol. 118 (1972):

Apr. 25, considered and passed Senate.

Aug. 2, considered and passed House, amended, in lieu of H.R. 14146.

Oct. 12, House and Senate agreed to conference report.

WEEKLY COMPILATION OF PRESIDENTIAL DOCUMENTS, Vol. 8, No. 44:

Oct. 28, Presidential statement.

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APPENDIX II  
ESTUARINE SANCTUARY GUIDELINES  
AMENDMENTS OF 1977  
INCORPORATED INTO THE  
ESTUARINE SANCTUARY GUIDELINES  
OF 1974 AS IN THE  
COASTAL ZONE MANAGEMENT ACT  
OF 1972 (P.L. 92-583),  
AS AMENDED

# DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[ 15 CFR Part 921 ]

## ESTUARINE SANCTUARY GUIDELINES

Policies and Procedures for Selection Acquisition and Management

AGENCY: National Oceanic and Atmospheric Administration, Department of Commerce.

It is proposed to amend 15 CFR Part 921 as follows:

(1) By revising the table of contents and authority citation to read as follows:

### Subpart A—General

- 921.1 Policy and objectives.
- 921.2 Definitions.
- 921.3 Objectives and implementation of the program.
- 921.4 Biogeographic classification.
- 921.5 Multiple use.
- 921.6 Relationship to other provisions of the Act and to marine sanctuaries.

### Subpart B—Application for Grants

- 921.10 General.
- 921.11 Application for preliminary acquisition grants.
- 921.12 Application for land acquisition grants.
- 921.13 Application for operational grants.
- 921.14 Federally-owned lands.

### Subpart C—Selection Criteria

- 921.20 Criteria for selection.
- 921.21 Public participation.

### Subpart E—Operation

- 921.30 General.
- 921.31 Changes in the sanctuary boundary, management policy, or research program.
- 921.32 Program review.

Authority: Sec. 305(1), Coastal Zone Management Act of 1972, as amended (80 Stat. 1030, (16 U.S.C. 1631) Pub. L. 94-370).

### Subpart A—General

#### § 921.1 Policy and Objectives.

The estuarine sanctuaries program will provide grants to States on a matching basis to acquire, develop and operate natural areas as estuarine sanctuaries in order that scientists and students may be provided the opportunity to examine over a period of time the ecological relationships within the area. The purpose of these guidelines is to establish the rules and regulations for implementation of the program.

#### § 921.2 Definitions.

(a) In addition to the definitions found in the Act and in the regulations dealing with Coastal Zone Management Program Development Grants published November 29, 1973 (Part 920 of this chapter) the term "estuarine sanctuary" as defined in the Act, means a research area which may include any part or all of an estuary, adjoining transitional areas, and adjacent uplands, constituting

to the extent feasible a natural unit, set aside to provide scientists and students the opportunity to examine over a period of time the ecological relationships within the area.

(b) For the purposes of this section, "estuary" means that part of a river or stream or other body of water having unimpared connection with the open sea where the seawater is measurably diluted with freshwater derived from land drainage. The term includes estuary-type areas of the Great Lakes as well as lagoons in more arid coastal regions.

(c) The term "multiple use" as used in this section shall mean the simultaneous utilization of an area or resource for a variety of compatible purposes or to provide more than one benefit. The term implies the long-term, continued uses of such resources in such a fashion that other uses will not interfere with, diminish or prevent the primary purpose, which is the long-term protection of the area for scientific and educational use.

#### § 921.3 Objectives and implementation of the program.

(a) General. The purpose of the estuarine sanctuaries program is to create natural field laboratories in which to gather data and make studies of the natural and human processes occurring within the estuaries of the coastal zone. This shall be accomplished by the establishment of a series of estuarine sanctuaries which will be designated so that at least one representative of each type of estuarine ecosystem will endure into the future for scientific and educational purposes. The primary use of estuarine sanctuaries shall be for research and educational purposes, especially to provide some of the information essential to coastal zone management decision-making. Specific examples of such purposes and uses include but are not limited to:

(1) To gain a thorough understanding of the ecological relationships within the estuarine environment.

(2) To make baseline ecological measurements.

(3) To monitor significant or vital changes in the estuarine environment.

(4) To assess the effects of man's stresses on the ecosystem and to forecast and mitigate possible deterioration from human activities.

(5) To provide a vehicle for increasing public knowledge and awareness of the complex nature of estuarine systems, their values and benefits to man and nature, and the problems which confront them.

(b) The emphasis within the program will be on the designation as estuarine sanctuaries of areas which will serve as natural field laboratories for studies and investigations over an extended period. The area chosen as an estuarine sanctuary shall, to the extent feasible, include water and land masses constituting a natural ecological unit.

(c) In order that the estuarine sanctuary will be available for future studies, research involving the destruction of any portion of an estuarine sanctuary which would permanently alter the nature of the ecosystem shall not normally be

permitted. In the unusual circumstances where permitted, manipulative field research shall be carefully controlled. No experiment which involves manipulative research shall be initiated until the termination date is specified and evidence given that the environment will be returned to its condition which existed prior to the experiment.

(d) It is anticipated that most of the areas selected as sanctuaries will be relatively undisturbed by human activities at the time of acquisition. Therefore, most of the areas selected will be areas with a minimum of development, industry or habitation.

(e) If sufficient permanence and control by the State can be assured, the acquisition of a sanctuary may involve less than the acquisition of a fee simple interest. Such interest may be, for example, the acquisition of a conservation easement, "development rights", or other partial interest sufficient to assure the protection of the natural system. Leasing, which would not assure permanent protection of the system, would not be an acceptable alternative.

#### § 921.4 Biogeographic classification.

(a) It is intended that estuarine sanctuaries should not be chosen at random, but should reflect regional differentiation and a variety of ecosystems as well as to cover all significant variations. To ensure adequate representation of all estuarine types reflecting regional differentiation and a variety of ecosystems, selections will be made by the Secretary from the following biogeographic classifications:

1. *Arctic*. Northeast Atlantic coast south to Cape Cod; glaciated shoreline subject to winter icing; well developed algal flora; boreal biota.

2. *Virginia*. Middle Atlantic coast from Cape Cod to Cape Hatteras; lowland streams, coastal marshes and muddy bottoms; characteristics transitional between 1 and 3; biota primarily temperate with some boreal representatives.

3. *Carolinian*. South Atlantic coast, from Cape Hatteras to Cape Kennedy; extensive marshes and swamps; waters turbid and productive; biota temperate with occasional tropical elements.

4. *West Indian*. South Florida coast from Cape Kennedy to Cedar Key; and Caribbean Islands; shoreland low-lying limestone; calcareous sands, marls and coral reefs; coastal marshes and mangroves; tropical biota.

5. *Louisianian*. Northern Gulf of Mexico, from Cedar Key to Mexico; characteristics of 3, with components of 4; strongly influenced by terrigenous factors; biota primarily temperate.

6. *Californian*. South Pacific coast from Mexico to Cape Mendocino; shoreland influenced by coastal mountains; rocky coasts with reduced fresh-water runoff; general absence of marshes and swamps; biota temperate.

7. *Columbian*. North Pacific coast from Cape Mendocino to Canada; mountainous shoreland; rocky coasts; extensive algal communities; biota primarily temperate with some boreal.

8. *Florian*. South coast Alaska and Aleutians; precipitous mountains; deep estuaries, some with glaciers; shoreline heavily in-

anted and subject to winter icing; biota boreal to sub-Arctic.

9. Subarctic. West and north coasts of Alaska; ice stressed coasts; biota Arctic and sub-Arctic.

10. Inland. Larger islands, sometimes with precipitous mountains; considerable wave action; frequently with endemic species; larger island groups primarily with tropical biota.

11. Great Lakes. Great Lakes of North America; bluff-dune or rocky, glaciated shoreline; limited wetlands; freshwater only; biota a mixture of boreal and temperate species with anadromous species and some marine invaders.

(b) Various sub-categories will be developed and utilized as appropriate.

#### § 921.5 Multiple use.

(a) While the primary purpose of estuarine sanctuaries is to provide long-term protection for natural areas so that they may be used for scientific and educational purposes, multiple use of estuarine sanctuaries will be encouraged to the extent that such use is compatible with this primary sanctuary purpose. The capacity of a given sanctuary to accommodate additional uses, and the kinds and intensity of such use, will be determined on a case by case basis. While it is anticipated that compatible uses may generally include activities such as low intensity recreation, fishing, hunting, and wildlife observation, it is recognized that the exclusive use of an area for scientific or educational purposes may provide the optimum benefit to coastal zone management and resource use and may on occasion be necessary.

(b) There shall be no effort to balance or optimize uses of an estuarine sanctuary on economic or other bases. All additional uses of the sanctuary are clearly secondary to the primary purpose and uses, which are long-term maintenance of the ecosystem for scientific and educational uses. Non-compatible uses, including those uses which would cause significant short or long-term ecological change or would otherwise detract from or restrict the use of the sanctuary as a natural field laboratory, will be prohibited.

#### § 921.6 Relationship to other provisions of the act and to marine sanctuaries.

(a) The estuarine sanctuary program must interact with the overall coastal zone management program in two ways: (1) the intended research use of the sanctuary should provide relevant data and conclusions of assistance to coastal zone management decision-making, and (2) when developed, the State's coastal zone management program must recognize and be designed to protect the estuarine sanctuary; appropriate land and water use regulations and planning considerations must apply to adjacent lands. Although estuarine sanctuaries should be incorporated into the State coastal zone management program, their designation need not await the development and approval of the management program where operation of the estuarine sanctuary would aid in the development of a program.

(b) The estuarine sanctuaries program will be conducted in close cooperation with the marine sanctuaries program (Title III of the Marine Protection, Research Act of 1972, Pub. L. 92-532, which is also administered by the Office of Coastal Zone Management, NOAA), which recognizes that certain areas of the ocean waters, as far seaward as the outer edge of the Continental Shelf, or other coastal waters where the tide ebb and flows, or of the Great Lakes and their connecting waters, need to be preserved or restored for their conservation, recreational, ecologic or esthetic values. It is anticipated that the Secretary on occasion may establish marine sanctuaries to complement the designation by States of estuarine sanctuaries, where this may be mutually beneficial.

#### Subpart B—Application for Grants

##### § 921.10 General.

Section 315 authorizes Federal grants to coastal States so that the States may establish sanctuaries according to regulations promulgated by the Secretary. Coastal States may file applications for grants with the Associate Administrator for Coastal Zone Management (OCZM), Office of Coastal Zone Management, Page 1, 3300 Whitehaven Parkway NW, Washington, D.C. 20235. That agency which has been certified to the Office of Coastal Zone Management as the entity responsible for administration of the State coastal zone management program may either submit an application directly, or must endorse and approve applications submitted by other agencies within the State.

##### § 921.11 Application for preliminary acquisition grants.

(a) A grant may be awarded on a matching basis to cover costs necessary to preliminary actual acquisition of land. As match to the Federal grant, a State may use money, the cost of necessary services, the value of foregone revenue, and/or the value of land either already in its possession or acquired by the State specifically for use in the sanctuary. If the land to be used as match already is in the State's possession and is in a protected status, the State may use such land as match only to the extent of any revenue from the land foregone by the State in order to include it in the sanctuary. Application for a preliminary acquisition grant shall be made on form SF 424 application for Federal assistance (non-construction programs).

(b) A preliminary acquisition grant may be made for the defrayal of the cost of:

(1) An appraisal of the land, or of the value of any foregone use of the land, to be used in the sanctuary;

(2) The development of a Uniform Relocation Assistance and Real Property Acquisition Policies Act plan;

(3) The development of a sanctuary management plan;

(4) The development of a research and educational program; and/or,

(5) Such other activity of a preliminary nature as may be approved in writing by OCZM. Any grant made pursuant to this subsection shall be refunded by the State to whatever extent it has spent in relation to land not acquired for the sanctuary, and if OCZM requests such refund.

(c) The application should contain:

(1) Evidence that the State has conducted a scientific evaluation of its estuaries and selected one of those most representative.

(2) Description of the proposed sanctuary including location, proposed boundaries, and size. A map(s) should be included, as well as an aerial photograph if available.

(3) Classification of the proposed sanctuary according to the biogeographic scheme set forth in § 921.4.

(4) Description of the major physical, geographic, biological characteristics and resources of the proposed sanctuary.

(5) Demonstration of the necessary authority to acquire or control and manage the sanctuary.

(6) Description of existing and potential uses of, and conflicts within, the area if it were not declared an estuarine sanctuary; and potential use restriction and conflicts if the sanctuary is established.

(7) List of protected sites, either within the estuarine sanctuaries program or within other Federal, State, or private programs, which are located in the same region or biogeographic classification.

(8) The manner in which the State solicited the views of interested parties.

(9) In addition to the standard 4-85 review procedures, the grant application should be sent to the State Historic Preservation Office for comment to insure compliance with section 106 of the National Preservation Act of 1966.

(d) In order to develop a truly representative scheme of estuarine sanctuaries, the States should coordinate their activities. This will help to minimize the possibility of similar estuarine types being proposed in the same region. The extent to which neighboring States were consulted should be indicated.

##### § 921.12 Application for land acquisition grants.

(a) Acquisition grants will be made to acquire land and facilities for estuarine sanctuaries that have been thoroughly described in a preliminary acquisition grant application, or where equivalent information is available. Application for an acquisition grant shall be made on SF 424 application for Federal assistance (construction program).

In general, lands acquired pursuant to this subsection are legitimate costs and their fair market value, developed according to Federal appraisal standards, may be included as match. The value of lands donated to the State and cash donations may also be used as match. If the State already owns land which is to be used in the sanctuary, the value of



any use of the land foregone by the State in order to include such land in the sanctuary, capitalized over the next 20 years, may be used by the State as match. The value of lands purchased by a State within the boundaries of proposed sanctuaries while an application for a preliminary acquisition grant or land acquisition grant is being considered may also be used as match.

(b) An acquisition application should contain the following information:

(1) Description of any changes in proposed sanctuary from that presented in the preliminary acquisition grant application. If such an application has not been made, then, information equivalent to that required in such a grant application should be provided.

(2) Identification of ownership patterns, proportions of land already in the public domain; fair market value appraisal and Uniform Relocation Act plan.

(3) Description of research programs, potential and committed research organizations or agencies, and benefits to the overall coastal zone management program.

(4) Description of proposed management techniques, including the management agency and proposed budget—including both State and Federal shares.

(5) Description of planned or anticipated land and water use and controls for contiguous lands surrounding the proposed sanctuary (including, if appropriate, an analysis of the desirability of creating a marine sanctuary in adjacent areas).

(6) Assessment of the environmental, and socio-economic impacts of declaring the area an estuarine sanctuary, including the economic impact on the surrounding community and its tax base.

(7) Discussion, including cost and feasibility of alternative methods for acquisition and protection of the area.

#### § 921.13 Application for operation grants.

(a) Although an acquisition grant application for creation of an estuarine sanctuary should include initial operation costs, subsequent applications may be submitted following acquisition and establishment of an estuarine sanctuary for additional operational funds. As indicated in § 921.11, these costs may include administrative costs necessary to monitor the sanctuary and to protect the integrity of the ecosystem. Extensive management programs, capital expenses, or research will not normally be funded by section 315 grants.

(b) After the creation of an estuarine sanctuary established under this program, applications (Form SP 424) for Federal assistance (non-construction program), for such operational grants should include at least the following information:

(1) Identification of the boundary (map).

(2) Specifications of the research and management programs, including managing agency and techniques.

(3) Detailed budget.

(4) Discussion of recent and projected use of the sanctuary.

(5) Perceived threats to the integrity of the sanctuary.

#### § 921.14 Federally-owned lands.

(a) Where Federally-owned lands are a part of or adjacent to the area proposed for designation as an estuarine sanctuary, or where the control of land and water uses on such lands is necessary to protect the natural system within the sanctuary, the State should contact the Federal agency maintaining control of the land to request cooperation in providing coordinated management policies. Such lands and State request, and the Federal agency response, should be identified and conveyed to the Office of Coastal Zone Management.

(b) Where such proposed use or control of Federally-owned lands would not conflict with the Federal use of their lands, such cooperation and coordination is encouraged to the maximum extent feasible.

(c) Section 315 grants may not be awarded to Federally-owned lands; however, a similar status may be provided on a voluntary basis for Federally-owned lands under the provisions of the Federal Committee on Ecological Reserves program.

#### Subpart C—Selection Criteria

##### § 921.20 Criteria for selection.

(a) Subpart C—Selection Criteria—is amended by changing the first sentence in § 921.20 to read: "Applications for preliminary acquisition or land acquisition grants to establish estuarine sanctuaries will be reviewed and judged on criteria including:"

(1) Benefit to the coastal zone management program. Applications should demonstrate the benefit of the proposal to the development or operations of the overall coastal zone management program, including how well the proposal fits into the national program of representative estuarine types; the national or regional benefits; and the usefulness in research.

(2) The ecological characteristics of the ecosystem, including its biological productivity, diversity and representativeness. Extent of alteration of the natural system, its ability to remain a viable and healthy system in view of the present and possible development of external stresses.

(3) Size and choice of boundaries. To the extent feasible, estuarine sanctuaries should approximate a natural ecological unit. The minimal acceptable size will vary greatly and will depend on the nature of the ecosystem.

(4) Cost. Although the Act limits the Federal share of the cost for each sanctuary to \$2,000,000, it is anticipated that in practice the average grant will be substantially less than this.

(5) Enhancement of non-competitive uses.

(6) Proximity and access to existing research facilities.

(7) Availability of suitable alternative sites already protected which might be capable of providing the same use or benefit. Unnecessary duplication of existing activities under other programs should be avoided. However, estuarine

sanctuaries might be established adjacent to existing preserved lands where mutual enhancement or benefit of each might occur.

(h) Conflict with existing or potential competing uses.

(i) Compatibility with existing or proposed land and water use in contiguous areas.

If the initial review demonstrates the feasibility of the application, an environmental impact statement will be prepared by the Office of Coastal Zone Management in accordance with the National Environmental Policy Act of 1969 and implementing CEQ guidelines.

##### § 921.21 Public participation.

(a) Public participation in the selection of an estuarine sanctuary is required. In the selection process, the selecting entity (see § 921.10) shall seek the views of possibly affected landowners, local governments, and Federal agencies, and shall seek the views of possibly interested other parties and organizations. The latter would include, but need not be limited to, private citizens and business, social, and environmental organizations in the area of the site being considered for selection. The solicitation of views may be accomplished by whatever means the selecting entity deems appropriate, but shall include at least one public hearing in the area. Notice of such hearing shall include information as to the time, place, and subject matter, and shall be published in the principal area media. The hearing shall be held no sooner than 15 days following the publication of notice.

(b) The Office of Coastal Zone Management (OCZM) shall prepare draft and final environmental impact statements pertaining to the site finally selected for the estuarine sanctuary following public participation in the selection of that site, and shall distribute these as appropriate. OCZM may hold a public hearing in the area of such site at which both the draft environmental impact statement (DEIS) and the merits of the site selection may be addressed by those in attendance. OCZM shall hold such a hearing if: (1) In its view, the DEIS is controversial, or (2) if there appears to be a need for further informing the public with regard to either the DEIS or one or more aspects of the site selected, or (3) if such a hearing is requested in writing (to either the selecting entity or (CZM) by an affected or interested party, or (4) for other good cause. If held, such hearing shall be held no sooner than 80 days following the issuance of the DEIS and no sooner than 15 days after appropriate notice of such hearing has been given in the area by OCZM with the assistance of the selecting entity.

#### Subpart D—Operation

##### § 921.30 General.

Management of estuarine sanctuaries shall be the responsibility of the applicant State or its agent. However, the research uses and management program

must be in conformance with these guidelines and regulations, and others implemented by the provisions of individual grants. It is suggested that prior to the grant award, representatives of the proposed sanctuary management team and the Office of Coastal Zone Management meet to discuss management policy and standards. It is anticipated that the grant provisions will vary with individual circumstances and will be mutually agreed to by the applicant and the granting agency. As a minimum, the grant document for each sanctuary shall:

(a) Define the intended research purposes of the estuarine sanctuary.

(b) Define permitted, compatible, restricted and prohibited uses of the sanctuary.

(c) Include a provision for monitoring the uses of the sanctuary, to ensure compliance with the intended uses.

(d) Ensure ready access to land use of the sanctuary by scientists, students and the general public as desirable and permissible for coordinated research and education uses, as well as for other compatible purposes.

(e) Ensure public availability and reasonable distribution of research results for timely use in the development of coastal zone management programs.

(f) Provide a basis for annual review of the status of the sanctuary, its value to the coastal zone program.

(g) Specify how the integrity of the system which the sanctuary represents will be maintained.

(h) Provide adequate authority and intent to enforce management policy and use restrictions.

§ 921.31 Changes in the sanctuary boundary, management policy or research program.

(a) The approved sanctuary boundaries; management policy, including permissible and prohibited uses; and research program may only be changed after public notice and the opportunity of public review and participation such as outlined in § 921.21.

(b) Individuals or organizations which are concerned about possible improper use or restriction of use of estuarine sanctuaries may petition the State management agency and the Office of Coastal

Zone Management directly for review of the management program.

§ 921.32 Program review.

It is anticipated that reports will be required from the applicant State on a regular basis, no more frequently than annually, on the status of each estuarine sanctuary. The estuarine sanctuary program will be regularly reviewed to ensure that the objectives of the program are being met and that the program itself is scientifically sound. The key to the success of the estuarine sanctuaries program is to assure that the results of the studies and research conducted in these sanctuaries are available in a timely fashion so that the States can develop and administer land and water use programs for the coastal zone. Accordingly, all information and reports, including annual reports, relating to estuarine sanctuaries shall be part of the public record and available at all times for inspection by the public.