Sapelo Island

National Estuarine Research Reserve

Management Plan

CZIC COLLECTION

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National Estuarine Research Reserve Program

Sapelo Island

U.S. Department of Commerce

Sapelo Island
National Estuarine Research Reserve
Management Plan

Final Management Plan

CZIC COLLECTION

Prepared by the

Georgia Department of Natural Resources
Atlanta, Georgia 30334

In Cooperation with the

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

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FOREWORD

The Duplin River estuary lies between Sapelo Island and the mainland in coastal Georgia. It remains in a largely natural state. In late December 1976, the State of Georgia acquired and began protective management of this estuary and nearby lands. The U.S. Department of Commerce then added the site to the National Estuarine Sanctuary System. The Georgia Department of Natural Resources (DNR) manages the area as the Sapelo Island National Estuarine Research Reserve (SINERR).

Sapelo Island was the second estuarine sanctuary designated as part of the national system. These protected estuarine areas are now known as the National Estuarine Reserve Research System. It includes 18 reserves representing areas of the United States which differ in their geology and biology. The National Oceanic and Atmospheric Administration administers the national program for the U.S. Department of Commerce.

This plan describes the resources and management of the SINERR. It includes general policies about resources and resource use. These policies will guide the staff who manage the site during the next several years. The plan also tells the public what the SINERR is and how DNR will manage it.

The draft management plan dated November 22, 1989, received public review through January 1990. This final plan incorporates changes made as a result of comments received from individuals and organizations during the review period. Further public comment on this plan and the management of the SINERR are welcome at any time.

EXECUTIVE SUMMARY

The nation's estuaries are extremely valuable. Human activities such as dredging and filling have damaged many estuaries in modern times. The United States Congress became concerned for these areas. The Congress enacted the Coastal Zone Management Act in 1972. In part, this Act offered federal aid to states to set up and manage natural field laboratories for research and education.

Georgia's Duplin River estuary lies in McIntosh County. Throughout its history, it has received protection by public and private landowners. It and nearby lands have been the focus of archaeological and ecological research since the early 1950s. In 1975, Georgia proposed the Duplin River estuary as a national estuarine sanctuary. The U.S. Department of Commerce (Commerce) studied and approved the State's proposal. The State completed land acquisition, and the site received designation as the Sapelo Island National Estuarine Sanctuary in December 1976.

Since that time, Commerce has designated 17 other estuarine areas nationwide as part of the National Estuarine Reserve Research Program. The National Oceanic and Atmospheric Administration (NOAA) administers this system for Commerce. As part of the national program, Sapelo Island represents the Carolinian biogeographic region. It is the focus for NERR support of estuarine scientific research and education in Georgia.

The Duplin River estuary includes unspoiled coastal salt marsh and tidal creeks. Such areas are among the earth's most biologically productive systems. They formed at their present location five to ten thousand years ago. The ability of these marshes to produce food has attracted man since that time. More recently, other people have come for recreation and scientific research.

The SINERR has two primary purposes: to protect natural and cultural resources, and to allow scientists to investigate how such estuarine systems function. Public education and compatible recreation are also part of the SINERR's program. Three-thousand visitors a year now enjoy educational activities at the SINERR. The Georgia Department of Natural Resources (DNR), the University of Georgia and NOAA have a large public audience for programs about estuaries. The SINERR is an excellent location to present these programs.

The 16,000 acres which make up Sapelo Island include the SINERR. The island has 10,572.44 acres of upland and 5,427.56 acres of marsh. Sapelo represents a direct investment of $4,835,000 in State and Federal funds. The Sapelo Island Research Foundation also gave the State of Georgia property valued at $3 million.

The SINERR occupies nearly one-third of Sapelo Island. Its 5,905 acres contain the Duplin River, the estuary and a few small upland tracts. Commerce made a grant of $1.5 million to help buy 2,094 acres of the SINERR.

Primary management goals for the SINERR include:

(a) maintaining the integrity of the SINERR for research and educational programs,

(b) protecting its lands and waters from stress and alteration,

(c) promoting increased public access for nature interpretation and low intensity recreation, and

(d) promoting and encouraging improved scientific understanding of estuarine ecosystems.

DNR has administrative offices within the SINERR. The University of Georgia Marine Institute also has a major research center within the SINERR. Protective management techniques are in place. Visitor activities include guided interpretive tours, hunting, fishing, nature study, and camping.

DNR is the State's manager for the SINERR. Its Game and Fish Division manages wildlife and forest resources and enforces conservation laws. DNR also runs the ferry, which is the primary means of access to Sapelo Island and the SINERR. DNR operates visitor-use facilities and presents educational programs for visitors. DNR's Coastal Resources Division and Environmental Protection Division help with scientific monitoring.

The Marine Institute employs full-time scientists, technical and support staff. They perform ecological research within the SINERR. This research helps us understand how salt-marsh estuaries work. In 1987, the Director of the Marine Institute reported that 80% of its research was conducted within the SINERR.

I. INTRODUCTION

An estuary is an area in which upland drainage mingles with the waters of an ocean, bay or other large body of water. In their natural condition, estuaries are extremely productive biological systems. Along the southeastern coast of the United States, fresh water from rivers and streams enters salty ocean water. The brackish areas where fresh and salt water mix support various plant species which tolerate salt. The plants vary depending on such factors as salinity, tidal range, solar radiation, soils, and annual temperature changes.

Estuarine areas have great, but often unrecognized, economic value. A Marine Institute publication lists several important functions of Georgia's coastal marshlands:

(a) Marsh provides a home for oysters, clams and other organisms that spend all of their lives in the estuary. Young shrimp, crabs and some fish use the estuary as a nursery ground.

(b) Marsh protects the shorelines from erosion. It also cleans coastal waters by filtering out many pollutants.

(c) The death and decay of marsh grasses provide food for plants and animals that live in the estuaries and just offshore.

Much of the nation's population lives within one-hundred miles of the coast. In many places, people have filled estuaries to provide upland for development. Dredging has occurred in other estuaries to improve navigation and waterborne commerce. Water pollution has damaged yet others.

By 1972, the United States Congress recognized the importance of estuarine areas and the pressure to alter them. To protect remaining estuaries, the Congress enacted (and later amended) the Coastal Zone Management Act of 1972. The Act authorizes the Secretary of Commerce to help states set up estuarine field laboratories. The National Oceanic and Atmospheric Administration (NOAA) carries out this duty. The SINERR is one of 18 sites that comprise the National Estuarine Reserve Research System, shown in Figure 1.

Georgia's Duplin River estuary covers 3,300 acres between Sapelo Island and the mainland in McIntosh County. In January 1975, Georgia proposed to set up an estuarine sanctuary, using this estuary and nearby lands. To succeed, the State needed to acquire some privately owned lands. The

The National Estuarine Reserve Research System

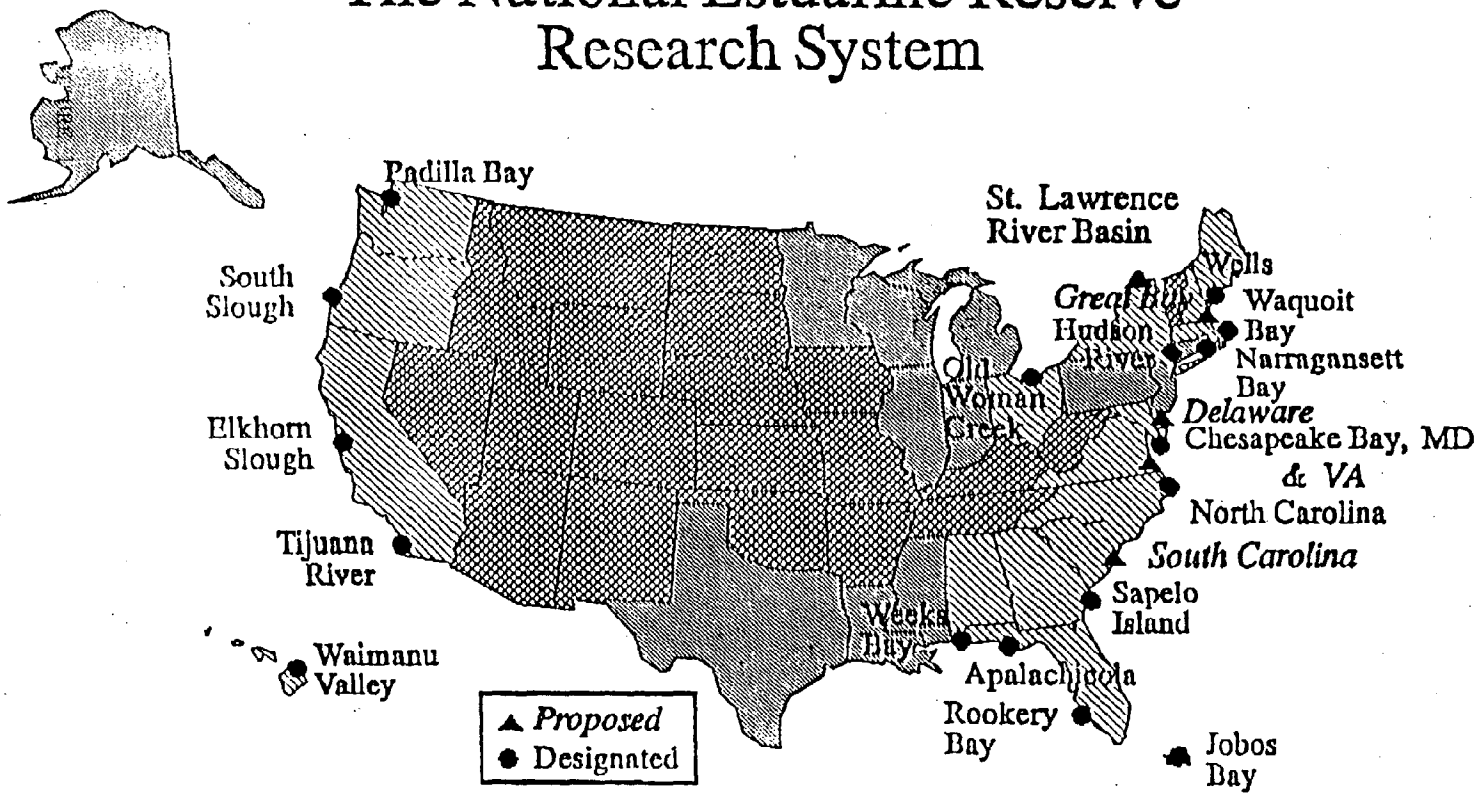


FIGURE 1: National Estuarine Reserve Research System

Marine and Estuarine Management Division National Ocean Service 1825 Connecticut Avenue, N.W. Washington, DC 20235 (202) 673-5126

Secretary of Commerce, with DNR's help, prepared an environmental impact statement which described the proposal and several alternatives.

After reviewing the alternatives and the public comments on them, Commerce approved the State's proposal. In June 1975, Georgia received funds from Commerce's National Estuarine Sanctuary Program to help purchase and manage the SINERR. Georgia matched these funds with State funds and other Federal monies. By December 1976, Georgia had bought 5,905 acres of land (Figure 2). Commerce then designated this expanse of water, marsh and upland as the Sapelo Island National Estuarine Sanctuary. Since its designation, NOAA and DNR have worked together to provide the resources needed to operate and manage the site. NOAA has contributed $250,000 to support management activities and programs on Sapelo. The State matched these funds dollar-for-dollar. NOAA has also provided more than $100,000 to support research projects at the SINERR.

SAPELO ISLAND PROPERTY INVENTORY

TRACT (Current Use)	ACQ.	ACREAGE			FUNDING	
		Upland	Marsh	Total	Price	Source of Funds
Hog Hammock Community	Private	434.00	---	434.00	N/A	N/A
R.J. Reynolds W.M.A	1969	6,928.92	---	6,928.92	$ 567,961	Pittman-Robertson funds (U.S. Dep't of Interior)
					189,320	State of Georgia
					757,281	TOTAL
Sapelo Island Nat'l Estuarine Sanctuary	1969	711.10	3,100.00	3,811.10	$ 58,289	Pittman-Robertson funds (U.S. Dep't of Interior)
	1976	739.00	1,355.02	2,094.02	1,500,000	Nat'l Estuarine Sanctuary funds (NOAA, Commerce)
		1,450.10	4,455.02	5,905.12	1,519,430	State of Georgia
					$3,077,719	TOTALS
Sapelo Island Natural Area	1976	1,759.42	972.42	2,731.96	$ 500,000	Land & Water Conservation Fund (U.S Dep't of Inter.)
					500,000	State of Georgia
					$1,000,000*	TOTAL
Sapelo Island Totals		**10,572.44**	**5,427.56**	**16,000.00**	**$4,835,000***	
Meridian Dock	1969	86.00	60.00	146.00	Included in 1969 acquisition.	
	1976	9.08	9.26	18.34	Included in 1976 acquisition.	
Meridian Dock Totals		**95.08**	**69.26**	**164.34****		

*Does not include $3,020,000 of property value donated by the Sapelo Island Research Foundation.
**Meridian Dock acreage is not included in the Sapelo Island total.

FIGURE 2: Sapelo Island Property Inventory

II. RESERVE ENVIRONMENT

A. Regional Setting

1. Georgia's Coastline

The Georgia coastline, about 110 miles long, is relatively little affected by man's recent activities, though man has been interacting with Georgia's coast for thousands of years. In general, the coastline in Georgia consists of a chain of barrier islands separated from the mainland by a four- to six-mile-wide band of coastal salt marsh (Figure 3). The barrier islands consist of an ocean-facing sand beach, a series of sand dunes, and a slightly elevated upland interior which is forested and may be dissected by sloughs. The salt marsh adjoins the islands' western edge in most places and extends, penetrated by many winding tidal creeks, to the mainland shore. Figure 4 illustrates these characteristic features. At its eastern edge, the mainland is only slightly elevated above sea level, but it is protected from the direct force of storms by the marshes and islands which lie seaward.

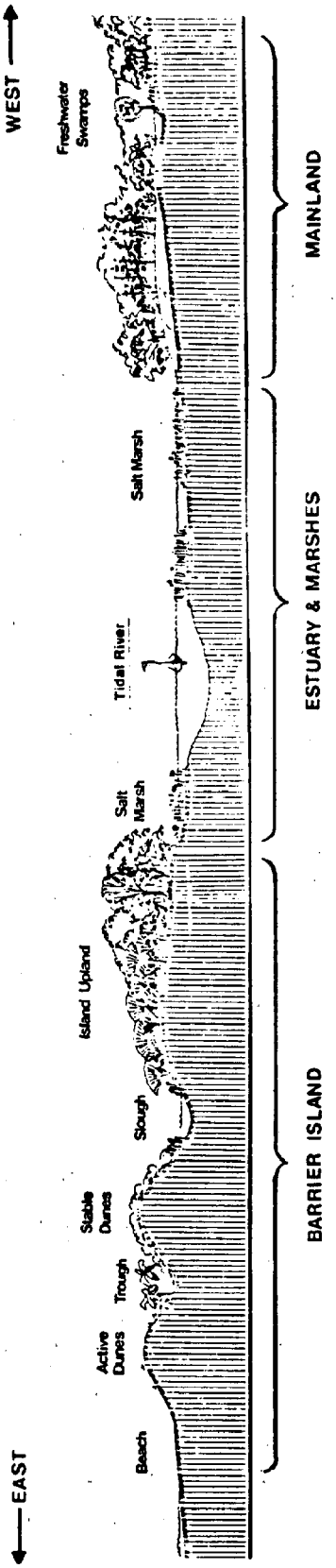
At several points along the Georgia coast, major rivers empty into the ocean through sounds, which separate the islands. A sequence of salt, brackish and freshwater marshes follows the river channels upstream into regions of decreasing salinity.

2. Economy of Coastal Georgia

Georgia's barrier islands and marshes have been less altered by development pressure than is the case in most other coastal areas. The economic and legislative history of the State help explain this fact.

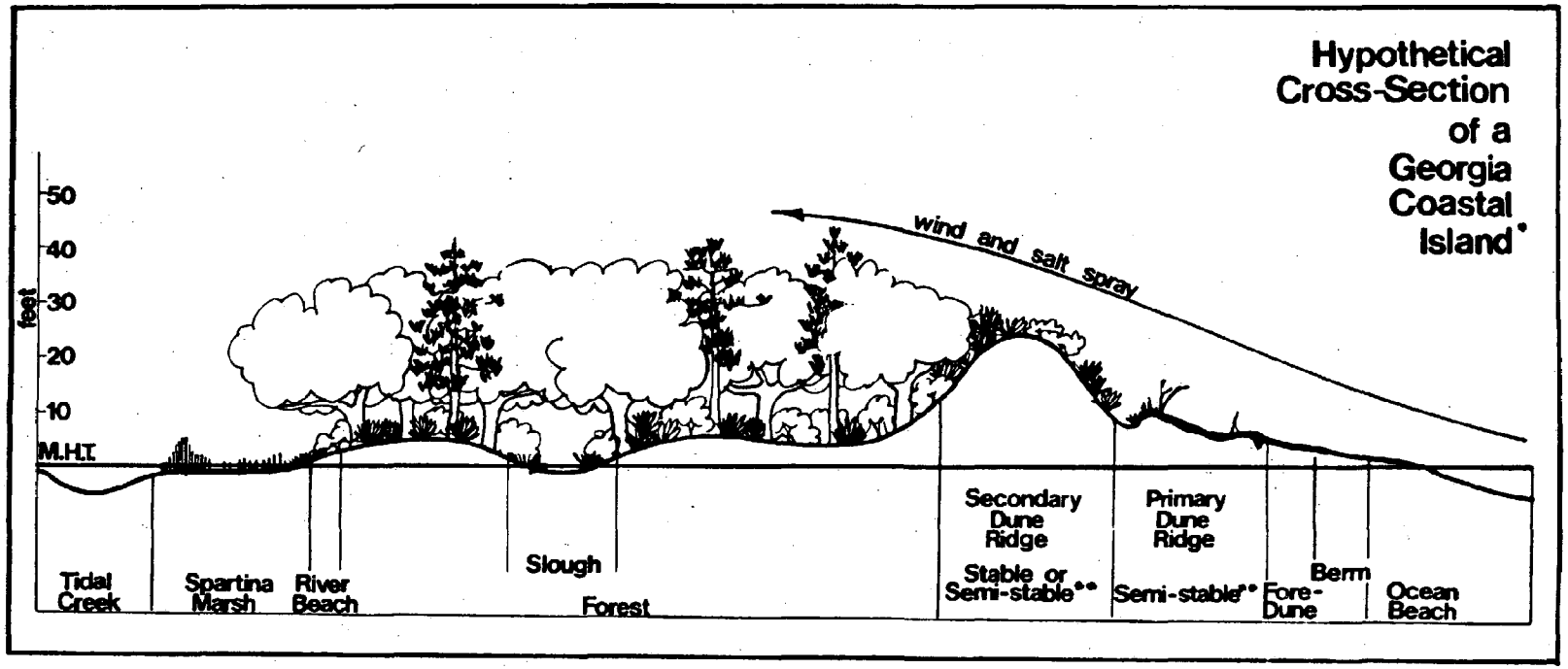
Georgia's early economy depended chiefly on agriculture and the forest products industry. The collapse of agriculture during the Civil War led to an economic depression from which the region was slow to recover (Johnson et al., 1974). The forest products industry has been important in coastal Georgia's recent growth in prosperity. So too have commercial fishing and, increasingly, navigation and waterborne commerce, especially through ports at Savannah and Brunswick.

U.S. Highway 17, which connects the northeastern United States with Florida, was completely paved through coastal Georgia in 1928. Despite a growing flow of tourists during the post-World War II years, the Georgia coastal area gained few economic benefits from tourism, partly because many beaches were inaccessible to the general public. Most of the fourteen major barrier



(Adapted from Georgia Department of Natural Resources, 1976, Handbook: Building in the Coastal Environment, pp. 24-25.)

FIGURE 3: Schematic Cross-section of Coastal Georgia



* Dimensions and features vary from island to island.

** A semi-stable dune or dune ridge is constant in terms of position on the shoreline, but functions as part of the sand-sharing system.

A stable dune or dune ridge is a dune which has reached its peak elevation and is covered with woodland vegetation.

Source: Clement, C. D., 1971, "Recreation on the Georgia Coast: An Ecological Approach", Georgia Business: Vol. 30 no. 11, p. 1-24. Adapted by Mr. J. R. Richardson.

FIGURE 4: Hypothetical Cross-section of a Georgia Barrier Island

islands were in the hands of wealthy individuals who used them as retreats and maintained privacy by not building causeways. Today, only four--Tybee, St. Simons, Sea Island and Jekyll--have road access from the mainland. Seven of the major barrier islands are in State or Federal ownership. They are used for public recreation and wildlife purposes.

Estuarine areas have received substantial protection through State ownership and legislative actions. The various forces--from historical accident to deliberate regulation--which led to the protection of Georgia's coastal resources also created the opportunity to establish the Sapelo Island National Estuarine Research Reserve (SINERR).

B. Sapelo Island: Location and Access

1. Location

Sapelo is one of Georgia's barrier islands (Figure 5), so called because they absorb wind and wave energy which would otherwise strike the mainland. The State of Georgia owns nearly all the island, a total of 16,000 acres. About 10,600 acres are high ground; the rest is marsh (Figures 6 and 7). Four and one-half miles of salt marsh, estuarine and tidal creek systems separate Sapelo from the mainland. The Department of Natural Resources (DNR) provides access to the island by ferry.

The SINERR is located in McIntosh County, 7.5 miles northeast of Darien, Georgia. Its core is the Duplin River estuary, a tidal drainage system entering Doboy Sound from the north. Although the Duplin River watershed occupies most of the SINERR, the SINERR also contains various forest types, sand dunes, a section of ocean beach, and developed areas.

DNR, which manages the SINERR, also manages more than half of the Sapelo Island upland as the Richard J. Reynolds Wildlife Management Area (WMA). The State-owned Reynolds WMA covers 6,929 acres of high ground.

The third DNR-managed area on Sapelo is the Natural Area, a 2,732-acre tract encompassing 1.5 miles of ocean beach, sand dunes and upland lying east of the Duplin River watershed. It provides public recreation opportunities, including hunting, fishing, beach use, and picnicking.

The Hog Hammock community, a 434-acre privately owned tract, adjoins the Reynolds WMA and the Natural Area. It is home to 65 residents descended from slaves on a 19th-century Sapelo plantation.

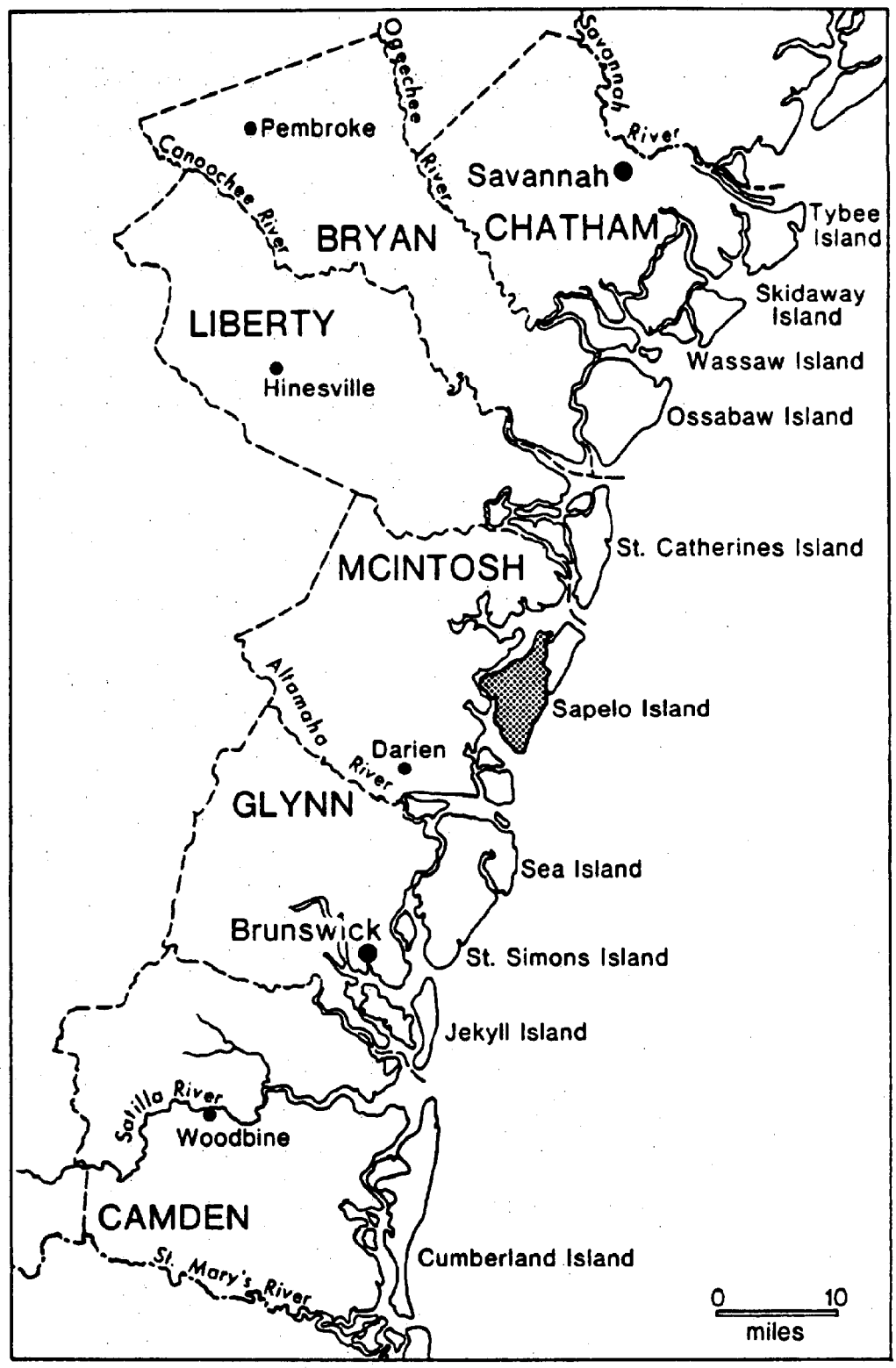


FIGURE 5: Barrier Islands of Georgia

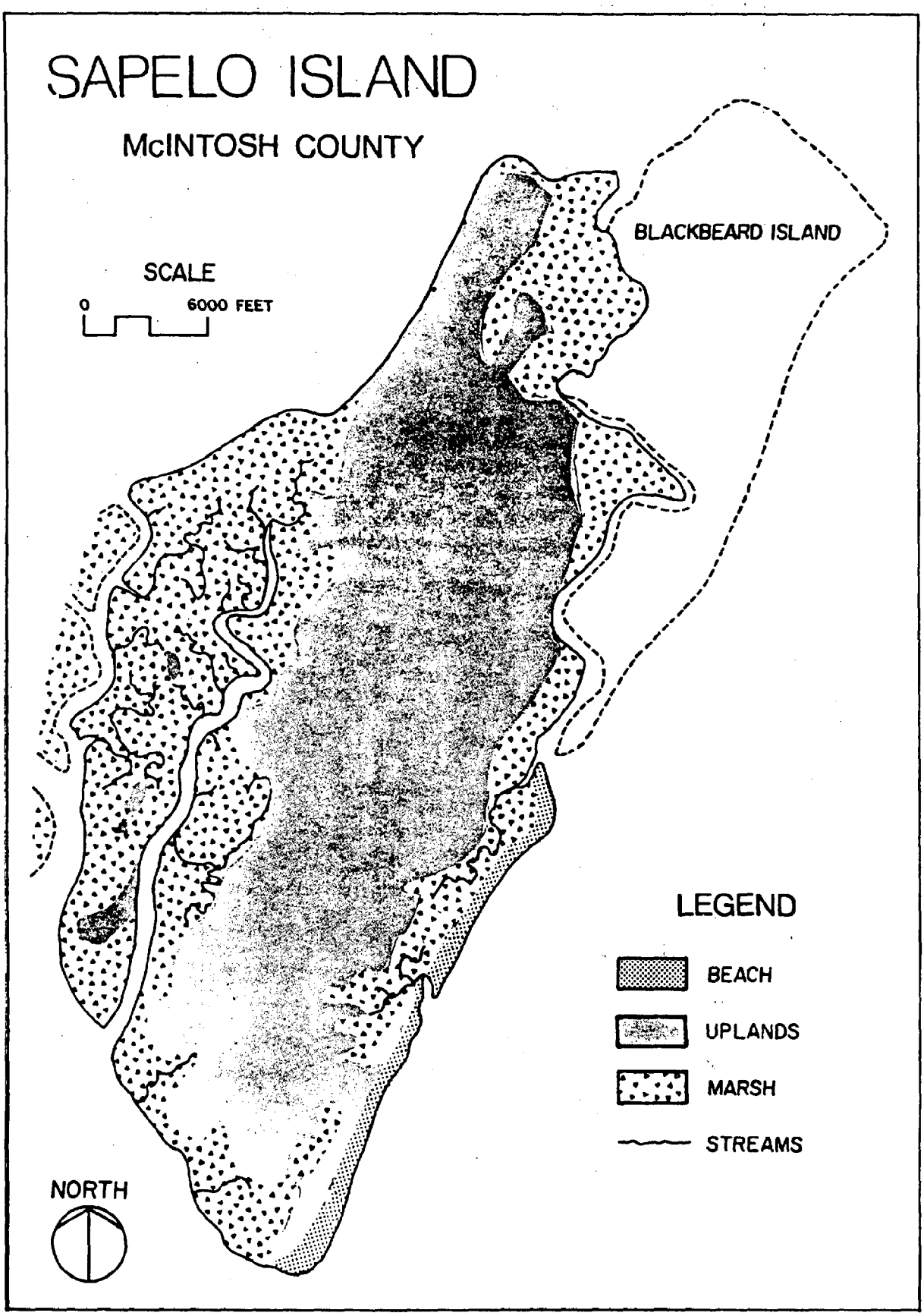


FIGURE 6: Sapelo Island's Major Geological Features

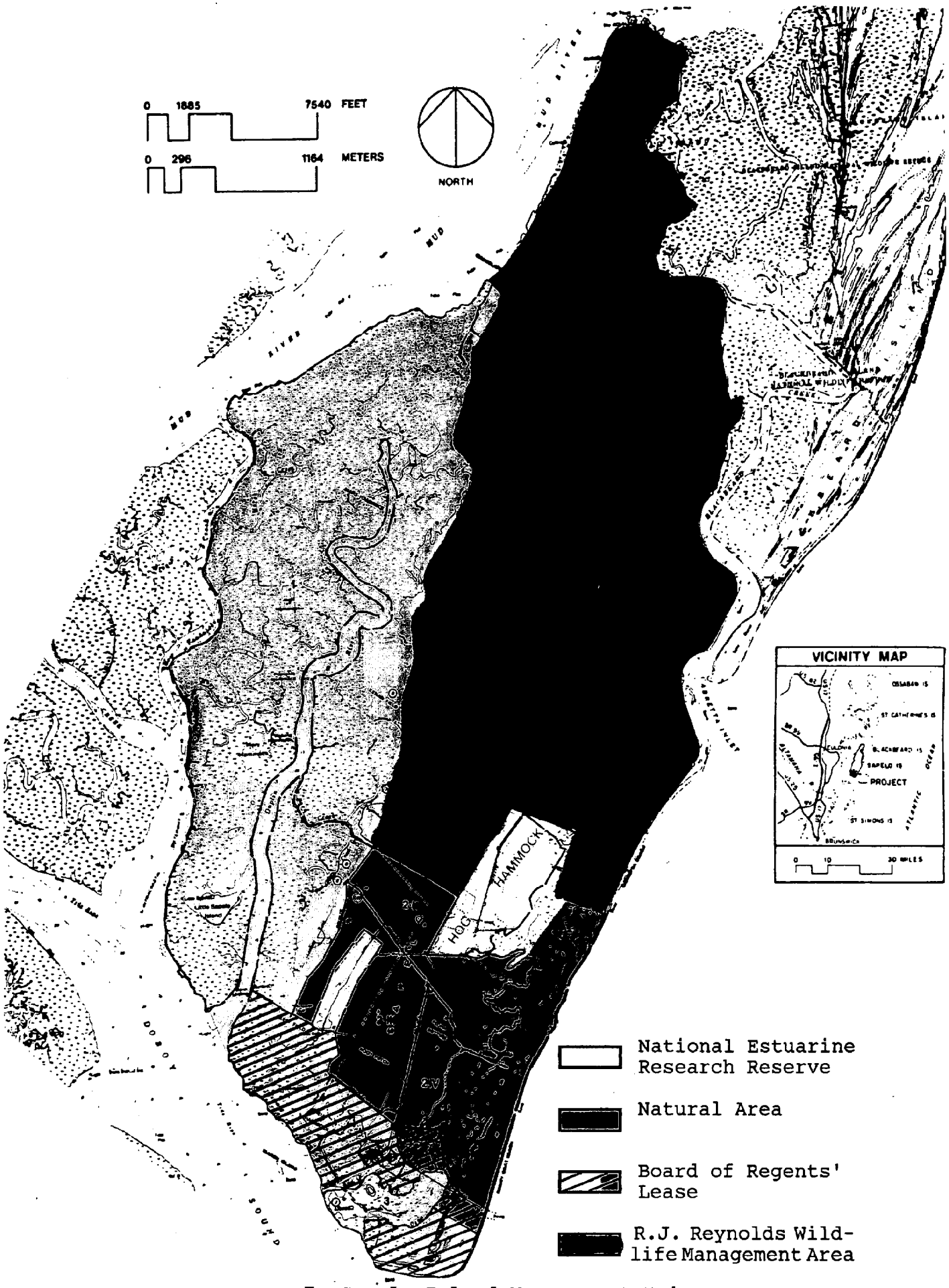


FIGURE 7: Sapelo Island Management Units

2. Access

The State-owned mainland departure point for Sapelo Island (Figure 8) lies a seven-mile, half-hour ferry ride to the west of the SINERR. This 164-acre tract of upland and marsh in McIntosh County, Georgia, borders a tidal stream known as Hudson Creek. Access, parking and security facilities are located on an 18-acre parcel acquired in 1976. The mile-long entrance drive connects to Georgia Route 99, about 7.5 miles north of Darien and 22.5 miles from Brunswick. The "Sapelo Queen" provides regular access between Meridian Dock and Sapelo Island, making three round trips a day Monday through Friday, and two trips on Saturday. Other boats operated by DNR, the Marine Institute and Sapelo residents also frequently use Meridian Dock.

C. Resources

1. Environmental Conditions

a. Climate

Coastal Georgia's climate is classified as subtropical. It consists of brief, mild winters and humid, warm summers. In 1981, Brunswick's 30-year annual average temperature was 68.9°F., according to U.S. Weather Service figures (National Climatological Center, 1981). Sporadic, intense summer showers account for much of the Sapelo area's annual precipitation, which averaged 51.7 inches for the 1972-1982 period. During the same time, Brunswick's precipitation averaged 48.2 inches per year. In 1978, NOAA's National Weather Service calculated Brunswick's 30-year average annual precipitation as 54 inches (National Climatological Center, 1978).

b. Topography

Sapelo Island consists of broad, nearly flat areas separated by gently sloping ridges (Figure 6). Its elevation ranges from sea level to perhaps twenty feet on the higher sand dunes (Johnson et al., 1974).

c. Geology and Soils

Sapelo Island is the fourth largest of Georgia's barrier islands. These islands are composed of sands brought to the coastal area by rivers, such as the Savannah and the Altamaha, whose headwaters arise in the Georgia piedmont and mountains. Island formation begins when wave and tide action heap up sand in a longshore ridge. If the ridge is stable enough to endure inundation during warm climatic periods, when reduced glaciation raises sea levels, then a lagoon is formed between the dune ridge and the mainland, and sediments are trapped there (Johnson et al., 1974). Under certain

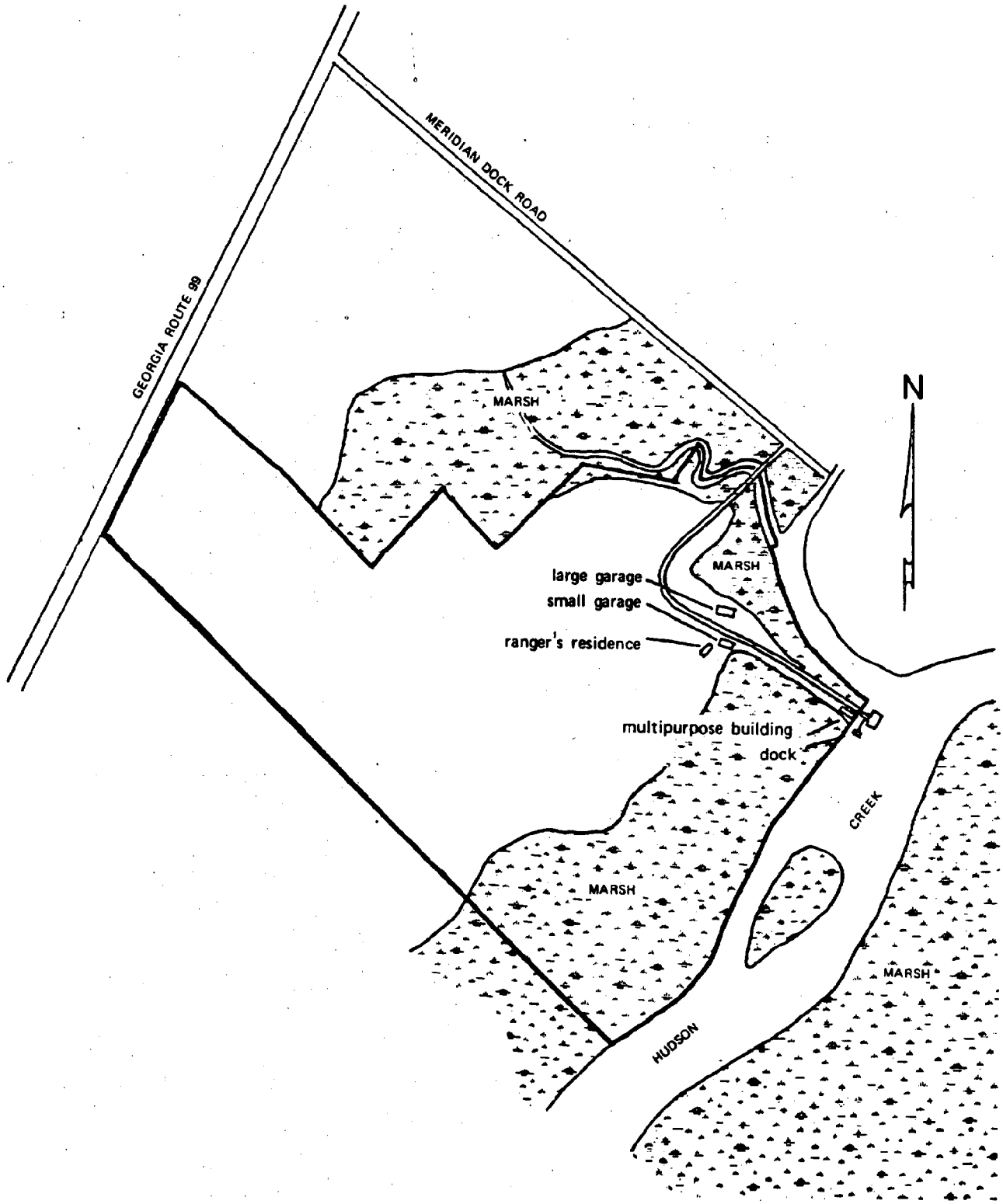


FIGURE 8: Meridian Dock

conditions, marsh develops in this lagoon, while part of the dune ridge remains above sea level and gradually becomes inhabited by plants and animals capable of surviving in this fairly rigorous environment.

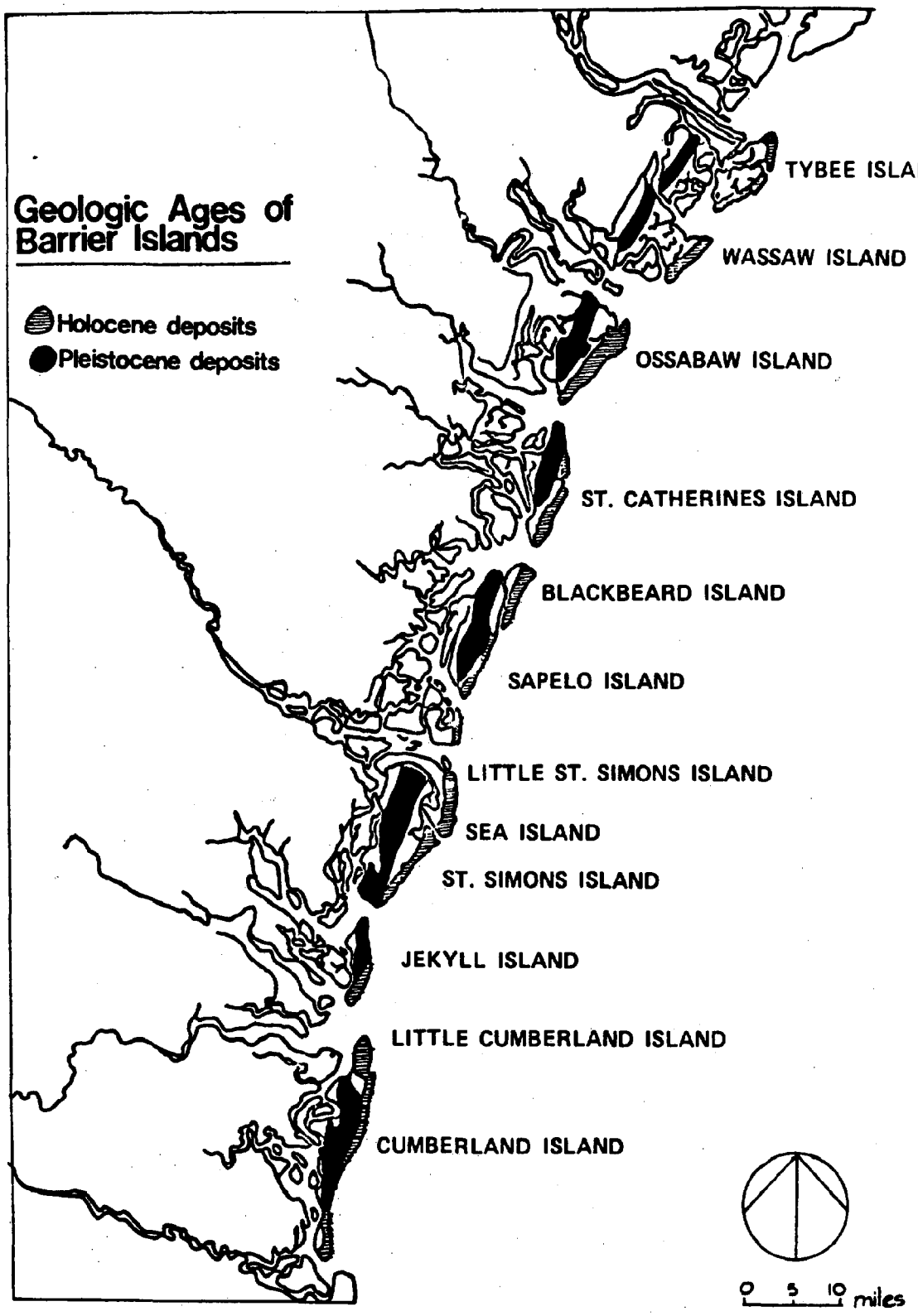
Sapelo, like most of Georgia's other barrier islands, formed during two consecutive high stands of the sea. Rising water, waves, winds and currents moved the island's sediments inshore from the continental shelf. Carbon dating of shells found in Sapelo Island sediments indicates that the main part of the island formed some 30,000 years ago (Pleistocene), while the seaward portion (Nannygoat Beach) is fairly young, dating some 4,000 to 5,000 years before the present (Holocene; see Figure 9). Sapelo Island shorelines and beaches change constantly, eroding in some places and accreting in others, in response to seasonal patterns of winds, waves and tides and occasional hurricanes.

d. Watershed and Hydrology

The Duplin River drains a tidal bay about six miles long, into which there is little upland runoff. It is more accurately described as a large tidal creek than a river (Kinsey, 1982). The 7.5-mile long river has an estuary of 3,296 acres, of which 15% is submerged at mean low water (Johnson, et al., 1974). Rain falling directly on the estuary is its only major source of freshwater. Tidal flow creates most of the Duplin River's current.

Mean tidal range at Sapelo Island is 6.8 feet; spring tide range is about eight feet (National Ocean Survey, 1983). The twice-daily tides differ generally by less than a foot and a half. The difference between daily lows is usually less than half a foot.

As reported in Johnson et al. (1974), Ragotzkie and Bryson studied the Duplin River in 1955. They found the water surface to be relatively narrow at mean low water. When the water rises to six feet above mean low water, however, it begins to leave the banks and flow in a sheet across the marsh. Between one-third and two-thirds of the water which a rising tide pushes into the estuary flows into the marsh. Fairly small increases in tidal height impel significantly increased volumes of water into the estuary. The tidal flow is consequently turbulent, promoting turbidity and thorough mixing of fresh with salt water. Flushing is also incomplete, as there is little fresh water entering the system. Much water in the estuary merely oscillates back and forth, rather than draining away to be replaced (Kinsey, 1982).



Source: Hoyt, J. H., 1968, "Geology of the Golden Isles and Lower Georgia Coastal Plain," in The Future of the Marshlands and Sea Islands of Georgia. Edited by D. S. Maney, F. C. Marland, and C. B. West. Published by the University of Georgia Marine Institute and the CAPDC. pp. 18-34.

FIGURE 9: Geologic Ages of Barrier Islands

2. Habitat Types

a. Sand-sharing System

Fine quartz sands make up the beaches and dunes on Sapelo's seaward side. These sands are shared with offshore sand bars, which accumulate sand pulled off the island by storms and seasonal winds and which return the sand to the beach and dunes at other times. Johnson et al. identify four zones in the beach-and-dune area:

Shoreface: the narrow zone seaward from the low tide shore line permanently covered by water, over which the beach sands and gravels move with wave action.

Foreshore: the lower shore zone between ordinary low and high water levels.

Backshore: the upper shore zone beyond the reach of ordinary waves and tides, extending to the base of the dunes.

Dunes: ridges of windblown sand.

Waves, currents and wind constantly change the shape of these landforms. Characteristic plant and animal communities have developed in response to the salt spray, soils, wind, strong sunshine and high temperatures which pose special challenges to life in these zones.

b. Coastal Marshlands

The salt marsh-estuarine ecosystem is typically an area of high environmental stress. Tidal inundation becomes important for those flora and fauna inhabiting the intertidal zone. Salinity, drainage, dessication and temperature are considered to be the major factors limiting the diversity of the salt marsh (Cooper, 1974). Despite the low diversity of the salt marsh, it is believed to be one of the most productive natural areas on earth (Schelske and Odum, 1962).

The primary basis for the food chain in the salt marsh is detritus originating mainly from the dominant vascular plant, smooth cordgrass (Spartina alterniflora). All life requires fresh water to carry on metabolic processes. The plants of the marsh have mechanisms which allow them to extract fresh water from the salty estuarine waters. Smooth cordgrass has a very efficient mechanism to handle salt and therefore can withstand twice daily inundation by the tides. Other plants, such as sea oxeye (Borrichia frutescens), groundsel bush (Baccharis halimifolia), and iva (Iva frutescens) prefer to grow in sandy areas which are inundated less often. Other common

marsh plants include glasswort (Salicornia virginica), needle rush (Juncus roemerianus), and salt marsh spike grass (Distichlis spicata).

Non-vascular plants are also abundant in the salt marshes of Georgia. Most non-vascular plants are microphytes, with the largest groups being the pennalean diatoms, mainly Navicula species. The diatoms, which account for less than 10% of the primary production, give the marsh muds their distinctive golden-brown hue. Macrophytic non-vascular plants are uncommon in the marshes. The major types are Ulva lactuca, an Entermorpha species, and several species of rhodophytes.

A large number of consumer species inhabit the salt marsh-estuarine ecosystem. The major groups are: zooplankton, benthic invertebrates, insects, fishes, reptiles, birds, and mammals. Benthic macroinvertebrates are the most conspicuous of the consumers. This group includes the fiddler crab (Uca species), marsh mussel (Geukensia demissa), marsh periwinkle (Littorina irrorata), and oyster (Crassostrea virginica). Consumers of past and present economic importance are included within the invertebrates (oysters, crabs and shrimp), fishes (chiefly menhaden, shad, and red drum) and mammals (raccoon, mink and otter).

All the consumers are important in an estuarine ecosystem's functioning and must be considered whenever plans are made to alter that system. Changing one component tends to have larger effects elsewhere throughout the system. For this reason, modifications within the Duplin River estuary will be made only after careful evaluation and assurance that they are consistent with the goals and objectives of the SINERR.

3. Cultural and Historical Resources

The SINERR is rich in archaeological resources. There are tabby ruins at Hanging Bull, slave quarters at Longrow Field, and a known but unmapped prehistoric site. Little Sapelo Island, the marsh, and Mary, Jacks and Pumpkin hammocks have not been surveyed for archaeological resources.

Long Tabby, DNR's main administration building, is the remains of Thomas Spalding's sugar works, which flourished during the first third of the 19th century. The former curing and boiling house was eventually adapted for office use. Ruins of the sugar mill are located just north of Long Tabby. To its west lie the foundation of the storage house and the remains of Spalding's dock in Post Office Creek.

Kenan Field is the site of a 150-acre prehistoric village, featuring evidence of 589 shell middens, two earth mounds, and at least two complex community structures (Crook, 1980). It has been extensively surveyed, but study of this site is not complete. No evidence of community structures such as those at Kenan Field has yet been uncovered elsewhere on the Georgia coast. This site provides a first view of a Savannah Phase aboriginal site and will be a point of comparison with similar sites which may be uncovered elsewhere. Since Kenan Field had agricultural use in recent times, archaeological evidence in the surface layers has been disturbed. DNR has consulted with the State Archaeologist to develop ways of managing the forest without further altering the archaeological record.

Another large archaeological site is located below the surface in a pecan orchard just south of the road to the southwest of South End House. Moses Hammock and the airport also contain subsurface archaeological sites. These sites have been tested but not exhaustively studied. Current use of these tracts does not affect the archaeological resources.

D. Current Uses of the SINERR

This section describes current uses and program activities within the SINERR. The action plan appearing in Chapter III describes how the State and NOAA will jointly manage and enhance programs for the SINERR.

1. Recreation

a. Boating

The Duplin River is an approved oyster harvesting area, as a result of the excellent water quality within the estuary. A federal navigational servitude extends over the waters surrounding Sapelo Island. Within the SINERR, the general public enjoys pleasure boating and recreational fishing, including clam and oyster harvest. DNR has not measured the level of these activities within the SINERR.

b. Wildlife-oriented Recreation

DNR holds eight managed deer hunts on Sapelo each year. During two other periods (January through mid-March and mid-September through mid-October) hunters may freely travel in the portion of the SINERR which extends north of Barn Creek. Hunters who stay on Sapelo Island use the Moses Hammock campsite.

Many SINERR visitors enjoy wildlife observation. Most visitors will see alligators, deer, squirrels, crabs and a profusion of bird life.

Many will also see raccoons, otters and snakes on the island and porpoises in the river. Wildlife observation and photography are significant recreational activities in the SINERR.

c. Hiking

Hiking includes guided nature walks led by SINERR staff, primarily on the nature trail, and foot travel by hunters. Groups of students, scouts and others with educational purposes who use the Cabretta campsite sometimes hike into the SINERR guided by SINERR staff or the group's leaders. General recreational hiking is not authorized within the SINERR.

d. Swimming and Beach Use

The public also uses for recreational purposes the wet beach and other lands which the tides flood twice daily. Swimming is permitted within the SINERR. The public tours include a short period at the beach for walking and beachcombing, but not for swimming. The beach experience is nevertheless an important recreational activity for tour participants.

e. Public Tours

The guided public tours of the SINERR have recreational as well as educational benefits. Because the upland areas of the SINERR are accessible to the general public only during hunts and guided tours, however, recreational use of the SINERR is limited.

2. Residential Use

Sapelo Island's population currently numbers about 100 people. Ten permanent DNR employees and dependents live on the island. On average, 25 full-time residents, including permanent staff, researchers, and their families, are associated with the Marine Institute. The Hog Hammock Community, which lies outside the SINERR, has 65 residents. Most residential use except for Hog Hammock lies within the SINERR. Existing residences are described in Section IV.A.3 below. The South End House receives overnight use for conferences and other professional events.

3. Industrial Use

There is no industrial land use within or adjacent to the SINERR.

4. Research

a. Ecological Research

In 1953, R.J. Reynolds, Sapelo's owner, invited the University of Georgia to establish a program of scientific research which could benefit from the island's resources. Scientists from the world over have since

come to the University of Georgia Marine Institute, attracted by the opportunity for studying estuarine and marine resources. Research at the Institute has generated more than 600 publications. Many current theories about general ecology and the flow of energy in natural systems are based on research conducted here by the renowned ecologist Dr. Eugene P. Odum and others who have used the Marine Institute's facilities over the years. Important studies concerning the geological development of barrier islands and associated shoreline processes also were carried out at the Marine Institute.

The Marine Institute is funded and staffed through the University System of Georgia. As with any other research facility, some of the financial support for the research is dependent upon funding which is available from sources such as the National Science Foundation and NOAA's Sea Grant and National Estuarine Research Reserve programs.

Staffing includes researchers, technicians, lab assistants, research vessel operators, administrative support staff and building-and-grounds crew. The staff now averages one visiting and eight full-time scientists, supported by six to eight technicians. Students, researchers and visiting scientists also use the Marine Institute's facilities.

In 1976, the State of Georgia acquired from the Sapelo Island Research Foundation the south-end lands which were designated as the SINERR and those which became the Sapelo Island Natural Area. When DNR became the manager of these lands, it and the Board of Regents entered into a 50-year lease (Appendix A) and an agreement (Appendix B) whereby the Marine Institute's basic scientific research program could continue to use 1,500 acres of the SINERR without interrupting its research. SINERR designation offered permanent protection for the Duplin River estuary and related lands, ensuring that they would continue to be available indefinitely for basic science.

b. Cultural Resource Investigations

Archaeological research on Sapelo Island since 1898 has identified many prehistoric and historic occupation sites. Since 1969, research has provided information to DNR's Game and Fish Division so that activities which disturb the soil, such as setting up the hunting camp, would have a minimal effect on Sapelo's cultural resources.

In most cases, the archaeologists have made detailed maps of their findings. In some circumstances, they have made carefully controlled surface collections of artifacts. In order to characterize the sites, they have

conducted limited excavations in certain areas. Much mapping, test excavation, and detailed definition of other sites remains to be done on Sapelo and within the SINERR.

Archaeological research at Sapelo Island has largely been survey work rather than extensive excavation. Comparatively little surveying has been done on the marsh islands, in the marsh itself, or within Sapelo's upland areas in the southern half of the SINERR.

c. Wildlife and Fisheries Research

When the State of Georgia acquired the north end of Sapelo Island in 1969, DNR began wildlife and forest management activities designed to improve habitat diversity and increase populations of game and nongame wildlife species. DNR's Game and Fish Division has performed various survey, inventory and research tasks which are necessary for professional wildlife management. Game and Fish personnel have surveyed participants in managed hunts, regarding their satisfaction with the hunts. Deer and wild turkey are inventoried periodically. In 1975, Game and Fish personnel undertook a three-year research project to determine the size and structure of the turkey population, habitat used for nesting and brood rearing, and the role of predators in nesting success.

DNR's Coastal Resources Division has periodically sampled various fish populations within the Duplin River estuary. Until March 1988, the Division performed quarterly trawls to characterize the composition of the larger species of fish, crustaceans and larger bottom-dwelling animals in the Duplin estuary. The Division has ended this task, since the data it provided were not useful for management purposes.

d. Current Research Goals

The management policy for the SINERR is designed to promote and encourage attainment of the scientific objectives at the SINERR. The primary scientific objectives of the SINERR are established by the 1976 grant award agreement between NOAA and DNR (Appendix C). They are:

(a) To enable a better understanding of estuarine ecosystems. Studies may include productivity measurements, distribution and life history studies of estuarine organisms, energy flow dynamics, modeling, etc., as well as physical, chemical and hydrographic studies;

(b) To make baseline studies by defining the natural conditions in this sanctuary, and by monitoring the sanctuary to detect subsequent changes;

(c) To develop policy and management criteria, and to use the Duplin River estuarine ecosystem as a control with which changes in other estuaries can be compared as they may undergo development as coastal zone management programs are implemented; and

(d) To allow any qualified scientist to conduct research, provided that such research is compatible with (i) other research being conducted in the Reserve, and (ii) the management and other scientific objectives of the Reserve as set out above.

DNR's 50-year lease with Regents (Appendix A) ensures the research program will continue without interruption. The Commissioner of DNR has also invited all institutions in the University System of Georgia to perform research on Sapelo Island and on other DNR lands, including Ossabaw Island.

Ecological research in the SINERR is performed chiefly by Marine Institute faculty, staff and associated scientists. Faculty research interests include:

- Carbon, nutrient and energy flow studies in estuarine and coastal systems,
- Biogeochemistry of nutrients, trace metals, organic carbon, and organic sulfur compounds,
- The role of microbes and other tiny animals in nutrient and energy recycling,
- The productivity and trophic fate of microbes which drive the cordgrass-decomposition system,
- Population dynamics of estuarine microplankton, and
- Population and community dynamics of estuarine macrofauna.

The main laboratory building houses offices and laboratories for resident and visiting scientists, two modern instrument rooms and a flowing-seawater laboratory. Eighteen research sites are active within the SINERR at present.

5. Trend Monitoring

Trend monitoring, as distinct from other kinds of research, is the systematic collection of data over a long period of time. It provides information on existing conditions--e.g., temperature, tide height, crab populations--and on how these conditions change. Many environmental factors vary cyclically

with time; examples include rainfall, sediment deposition and removal, dissolved oxygen levels, and populations of plants and animals within the estuary. Some of the cycles are decades long. Studies designed to characterize aspects of the Duplin estuary should continue until these cycles can be identified.

In the long run, such studies and other research findings permit comparisons among estuaries which can help isolate the causes of changes in estuarine systems. Trend monitoring can also help the SINERR Resident Manager measure the effectiveness of DNR's management practices and determine if changes are necessary. Despite these benefits, comparatively little of the research performed in the Duplin estuary since 1950 has been trend monitoring. Predictable sources of funding for long-term monitoring have not been available. However, there are some continuing monitoring efforts at the SINERR.

NOAA's National Weather Service Cooperative Weather Station, established in 1957 near the Marine Institute laboratory, reports daily high and low temperatures and daily rainfall. Other meteorological data collected by the Marine Institute since 1955 include barometric pressure, and wind speed and direction.

The Marine Institute has placed equipment which continuously monitors physical conditions at Marsh Landing and at Flume Dock, near Moses Hammock. The Marsh Landing station has instruments to measure air temperature and humidity, solar radiation, wind speed and direction, rainfall, and water pH, salinity and temperature. The Flume Dock station has the same instruments, except for the rain gauge. Data collection began late in 1984 by electronic recording.

DNR's Environmental Protection Division in 1985 placed a monitoring station in the Duplin estuary to collect data on a number of water-column and tissue-accumulation parameters. EPD added another station in 1988. These stations measure factors including dissolved oxygen, pH, conductance, chlorophyll, 5-day biological oxygen demand, coliform bacteria concentrations, water color and alkalinity, nitrogen (several measures), phosphorus, organics, and metals. These are two of fourteen stations throughout Georgia's estuaries. The other twelve generated data between 1972 and 1983, and have done so again since 1985.

6. Education and Interpretation

a. Onsite Activities

DNR provides public education and interpretation at the SINERR, chiefly through tours guided by DNR staff. At present, all visitors participate in some type of organized activity or program. Tour participation now averages 3,000 people per year. The tour capacity is limited during busy months by bus seating and staff levels.

i. SINERR Tours

Each Wednesday and Saturday morning, SINERR personnel take visitors on a three-hour driving tour of the SINERR, with stops at points of educational interest. The guide provides an interpretive narration during the tour. These tours expose visitors to marsh, upland and beach environments and generate discussion. The tours are an introduction to the SINERR, but they have a broader purpose as well: to acquaint visitors with barrier islands in general and with Sapelo's resources in particular. The discussion of upland and beach ecosystems and of the Hog Hammock community takes place outside the SINERR, for the most part.

During the summer season (the first Friday after Memorial Day through the first Friday after Labor Day), a third tour takes place on Friday mornings. Another tour occurs on the last Thursday of each month, and a six-hour walking tour is given on the last Saturday.

The Game and Fish Division offers special tours to groups such as school classes and civic organizations. These tours are conducted on days other than regular tour days and last approximately six and one-half hours. During these tours such subjects as marsh ecology, food webs, wildlife management, estuarine research, sand-sharing systems, and beach ecology are discussed in more detail than the half-day tours allow. These groups use equipment such as refractometers, cast nets, plankton nets, and seine nets to obtain a first-hand look at the estuary. These tours are tailored to the members' ages and areas of interest.

DNR must sometimes reschedule a tour, if it conflicts unavoidably with other management needs. When this occurs, DNR as soon as possible notifies the affected individuals or group of the change. The policy for rescheduling tours appears in Appendix L.

ii. Nature Trail

SINERR visitors currently use one self-guided nature trail in the Natural Area, which lies along a sand road parallel to the beach. It is marked by numbered posts which correspond with numbers on the trail brochure. The trail provides visitors a chance to learn at their own pace.

iii. Visitors' Centers

Two visitors' centers provide public information. One is located at Meridian Dock where visitors meet the Sapelo ferry. Visitors can learn some general facts about the island and the SINERR before boarding the ferry. Another visitors' center/exhibit room is located at the Game & Fish Division offices on Sapelo Island. This center serves as a theatre for films and slide shows, and as a lab when working with classes of students.

The Marine Institute is one stop on tours of the SINERR. The ground floor of the laboratory contains exhibit space which displays organisms found in the SINERR and information about coastal geology and research projects.

iv. Primitive Camping

The nature trail and beaches give visitors an opportunity for passive recreational activities. Viewing wildlife and habitat adds to the learning experience. During warm weather, classes and other groups participate in seining and cast-netting along the beach. Primitive camping on Sapelo Island for organized groups is available on a very limited basis. The camp is currently located near Cabretta Beach in the Reynolds WMA. During their stay, such groups are exposed to the variety of plants, animals and habitats found along the coast.

v. Publications

DNR has developed several brochures and fliers which inform the general public about the SINERR, surrounding coastal areas, and educational activities offered through the SINERR. Most of them are somewhat outdated and need revision.

vi. Exhibits

The SINERR now has three exhibit areas: interpretive graphics at Meridian Dock, several cases of preserved estuarine animals at the Marine Institute, and a few graphic materials and hands-on exhibits at DNR's office at Long Tabby. These exhibits were developed at different times; they lack consistent themes and design standards.

Though the Meridian Dock exhibits are the most modern, they need updating. The exhibit area in the Marine Institute laboratory is also a main hallway used by Institute staff. Tour visits interfere with research, since the exhibit area was not intended for use by groups as large as the tours. The exhibits in DNR's office are teaching aids rather than professionally designed exhibits.

b. Offsite Activities

A mainland exhibit area is available to the public at the Brunswick headquarters of DNR's Coastal Resources Division. Exhibits, including aquaria, displays and programs offered at this office also serve as an introduction to the SINERR program.

The Resident Manager occasionally gives slide presentations and other talks at local schools and meetings of civic organizations, as time permits. A 20-minute film entitled "The Spirit of Sapelo" is the main audio-visual material which DNR uses. It provides an excellent overview of Sapelo Island's people and resources, including much information about the SINERR. The Education Coordinator also assembles slide shows for presentations to school groups and community organizations.

SINERR staff members and the DNR Communications Office encourage media coverage of the SINERR and its programs. Many reporters and writers have visited Sapelo Island and the SINERR. DNR periodically sends news releases to all media, publicizing programs and special activities offered at the SINERR.

7. Forest Management and Transportation

DNR manages forest resources on Sapelo Island, including those within the SINERR. Forest management practices are discussed in detail in Section III.B.4.a below.

Several roads through the SINERR give island residents and visitors access to the island from Marsh Landing dock. The grass airstrip, used for official purposes, receives about one flight per week.

DNR manages forest resources and transportation activities so they are consistent with the primary purposes of the SINERR as a national estuarine sanctuary, namely research and education.

E. Existing Jurisdictions and Management

1. Administrative Structure

a. Game and Fish Division

The Director of DNR's Game and Fish Division is the overall SINERR Advisory Committee liaison and coordinator (Figure 10). He indirectly supervises the Regional Game Management Supervisor for Georgia's coastal region, to whom the SINERR Resident Manager reports. The Resident Manager implements on a day-to-day basis DNR's policies, plans and procedures for the SINERR. His office is located on Sapelo Island. Three permanent Game and Fish Division employees assist the Resident Manager: the Interpretive Assistant, who is assigned full-time to SINERR duties, a Wildlife Technician III and a Wildlife Technician II. A mechanic also supports the SINERR by making equipment repairs and providing logistics for the camping area at Cabretta. DNR's Coastal Resources Division and Environmental Protection Division assist with baseline monitoring.

b. NOAA

DNR manages the Reserve in conformance with the applicable NOAA regulations for the National Estuarine Reserve Research System (NERRS) and with a memorandum of agreement between the two agencies (Appendix D). The Resident Manager consults with NOAA personnel regarding the NERRS policies and program guidance. The State matches on an equal basis all federal financial assistance which the NERRS system provides. NOAA reviews and approves such projects under the terms of the grant award. NOAA provides direct support for land acquisition, reserve operations, research, education and monitoring projects.

c. SINERR Advisory Committee

The Commissioner of DNR named an eight-person Advisory Committee to make recommendations to DNR regarding several broad functions at the SINERR:

- overall management principles and practices,
- research and monitoring,
- educational and interpretive programming, and
- public access and recreation.

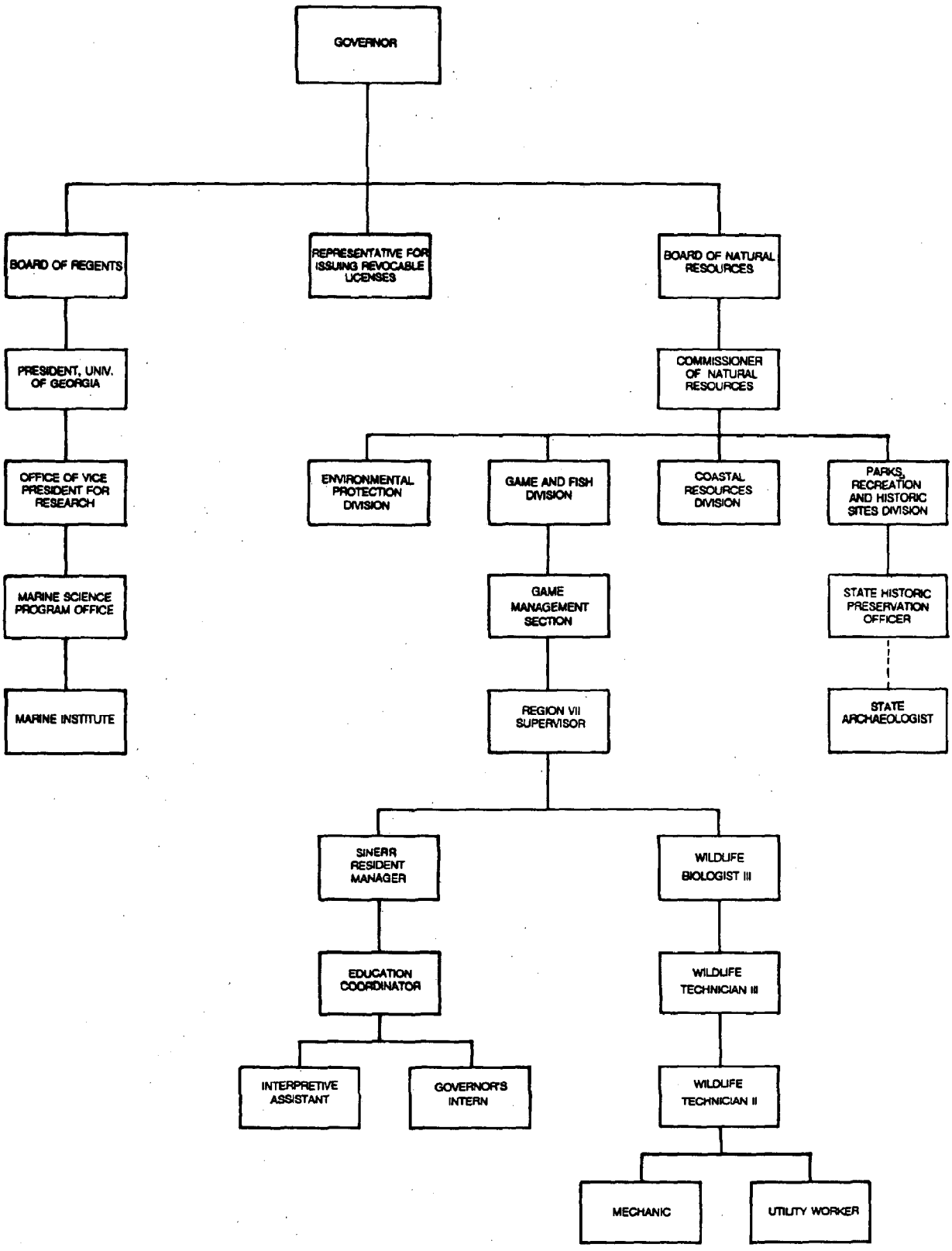


FIGURE 10: SINERR Organizational Chart

The SINERR Advisory Committee's members are as follows:

- Dr. Vernon J. Henry, Chairman, Department of Geology, Georgia State University
- Dr. Forest E. Kellogg, III, Research Associate, Southeastern Cooperative Wildlife Disease Study
- Dr. Joe L. Key, Vice President for Research, University of Georgia
- Honorable David Earl Lane, Chairman, Board of Commissioners, McIntosh County
- Dr. Benjamin F. Lewis, Founder and former Chairman, Hog Hammock Community Foundation
- Mr. Jerry McCollum, Executive Director, Georgia Wildlife Federation
- Ms. Kathleen Varnell, Secondary Schools Science Consultant, Georgia Department of Education
- Mrs. Jane Yarn, conservationist and citizen member

Biographical information for these individuals appears in Appendix E.

In general, the SINERR Advisory Committee will meet once a year, though it held two meetings during 1989, its first year. At the inital meeting, the Advisory Committee received a briefing on current issues from NOAA, DNR and the Marine Institute. Dr. Benjamin Lewis discussed the Hog Hammock Community. The Committee also toured the SINERR and other parts of Sapelo.

DNR named two technical task forces to prepare recommendations to the Committee. One addressed research and monitoring; the other reviewed educational and interpretive programming. The task force members are listed in Appendix E, following the Committee members' biographies.

The recommendations took the form of mission statements, goals and objectives for each program area, and included practical ideas for implementation. The Advisory Committee received the task force recommendations at its second meeting and approved them with few changes.

DNR will continue to rely on the task forces and Advisory Committee for guidance and advice during implementation. These volunteer groups are integral to successful implementation of this plan.

The meetings of the task forces and Advisory Committee are open to the public. Persons who wish to receive individual notice of these meetings should contact any staff member at:

Sapelo Island National Estuarine Research Reserve
Sapelo Island, Georgia 31327
Phone: (912) 485-2251

d. Board of Regents

The 50-year lease and the operating agreement (Appendices A and B) between the Board of Regents and DNR guide the use of State-owned facilities leased to the Board of Regents. These documents and the SINERR goals and objectives establish the management and research responsibilities of the two agencies on Sapelo Island.

e. McIntosh County Chamber of Commerce

A separate agreement between the McIntosh County Chamber of Commerce and DNR (Appendix F) lets the Chamber help provide public access to Sapelo Island by handing reservations for public tours. The Chamber of Commerce does not operate the tours. The tours are planned and conducted by the Education Coordinator and the Interpretive Assistant.

2. SINERR Staff

The following positions are currently assigned to the SINERR program:

Resident Manager: The Resident Manager oversees administration of DNR's plans, policies and procedures for the SINERR and has day-to-day responsibility for managing the SINERR. The Manager directly supervises the Education Coordinator (to be hired in State Fiscal Year 1990) and the Wildlife Technician III, who manages the Reynolds WMA. The Manager has primary responsibility for communication with NOAA's Office of Ocean and Coastal Resource Management and with the Marine Institute. The Manager also serves as the primary law enforcement officer on Sapelo Island.

Interpretive Assistant: The Assistant acts as a guide on many interpretive tours. The Assistant also helps schedule visitor use of Sapelo Island; develop, prepare and distribute educational and informational materials; and design and construct exhibits.

Wildlife Technician III: The Wildlife Technician III supervises the day-to-day operations at the Reynolds WMA; supervises hunting and fishing within the SINERR; directs the habitat-, forest- and wildlife-management activities occurring within the SINERR; and directs wildlife-related research. This position also supervises the Wildlife Technician II.

Wildlife Technician II: The Tech II, at the direction of the Tech III, helps administer managed hunts; carries out habitat, forest and wildlife management activities, including prescribed burning and the construction and maintenance of wildlife openings; performs wildlife surveys; and prepares necessary maps associated with the other duties.

Mechanic: The Mechanic keeps the SINERR equipment in operating order and helps with logistics for the camping groups.

III. ACTION PLAN

A. Overall Management and Development Concept

The Department of Natural Resources (DNR) has prepared this plan after consulting with many individuals, organizations and governmental agencies. There is agreement that resource protection is the highest priority for SINERR management. Protection of the Duplin River estuary accomplishes three major purposes which are central to the existence of the SINERR:

- It allows scientists to learn how an unaltered estuary functions.
- It allows educators to communicate the benefits of estuaries to governmental and private managers of coastal resources and to the general public.
- It allows the Duplin River estuary to continue providing the environmental benefits in the future which it has provided in the past.

SINERR management can be divided into five broad program areas: resource protection, research and monitoring, education and interpretation, public access and recreation, and land acquisition. These will be discussed in detail in the sections which follow. Facility development, staffing and administration are required to carry out the program activities. They will be discussed separately.

B. Resource Protection

1. General Context for Management

Protection of the SINERR's resources is necessary if the area can continue to serve the scientific and educational purposes for which it was designated. The resource protection program includes:

- Publicizing and enforcing existing regulations which govern uses in the SINERR.
- Managing visitor use to minimize adverse effects.
- Restoring selected areas where former land uses have altered habitats.
- Revising regulations as needed, in light of new scientific knowlege about estuaries.

2. General Policies

The State holds fee simple title to nearly all the lands and waters within the SINERR. It therefore has broad administrative authority to regulate

uses within the SINERR to ensure resource protection. In practice, DNR regulates uses in the SINERR in accordance with guidelines to which the State and NOAA have agreed and with the applicable program regulations.

The primary management goals for the SINERR, as set forth in the grant award conditions, are:

(a) To maintain the integrity of the Reserve for research and educational purposes and to protect it from both internal and external sources of stress which may alter or affect the nature of the ecosystems. The management policy shall be designed to reduce, minimize or avoid artificial or manipulative management control or techniques, to promote and protect natural processes and systems, and to promote and encourage attainment of scientific objectives.

(b) To manage the Natural Area for overall DNR objectives, where the objective is to preserve the scenic or natural values, including the areas of physical or biological importance and wildlife areas, in such a manner that it complements and is compatible with the purposes of the Reserve and under such rules and regulations as the Board of Natural Resources may promulgate. These areas must be open to the general public for outdoor recreation use to the extent that the natural attributes of the areas will not be seriously impaired or lost.

To further these objectives and the management goals of the SINERR, DNR regulates uses of SINERR lands. Among the allowed uses are: research, including archaeology; education and nature interpretation; and low-intensity recreation, including hunting, fishing, wildlife observation and esthetic enjoyment. Other uses are allowed on a restricted basis within the upland areas of the SINERR: residential use; motor vehicles; the use of pesticides, herbicides, biocides and fertilizers; prescribed burning; and commercial timber harvesting. The SINERR Resident Manager regulates these uses in accordance with provisions of the designation agreement, applicable NOAA program regulations, and direction from the Director of the Game and Fish Division.

Uses prohibited within the SINERR include all restricted uses listed above, unless they are specifically authorized by the Resident Manager; dredging; mineral removal; control of predators through use of poisons; depositing fill in any marsh or estuary; chemical or pollutant discharge except as permissible under Georgia water quality laws; and other alterations of the

natural environment or cultural resources which are inconsistent with the purposes for which the SINERR was established. Prohibited uses are those which are not specifically authorized and which are inconsistent with the purposes for which the SINERR was established and is managed under this plan.

3. Enforcement and Monitoring

Resource protection for the SINERR is based on three sources of authority:

- Federal grant award conditions and Federal law:
  - Estuarine Research Reserve grant and applicable program regulations
  - Land and Water Conservation Fund grant
  - Pittman-Robertson Fund grant
  - Federal historic preservation requirements
- State ownership and management of all SINERR lands
- State regulatory authority over resource uses which could affect the SINERR

a. State Land Ownership

The Official Code of Georgia Annotated (OCGA), in Sections 27-1-6 through 27-1-20, empowers DNR to enforce conservation laws and protect resources on State property.

The State, acting through DNR, "reserves to itself the exclusive right...of exploring, excavating, or surveying all prehistoric and historic sites" on State-owned lands, except for property under the jurisdiction of the Board of Regents (OCGA Sec. 12-3-52(a)). The State Archaeologist directs and coordinates archaeological research on State-owned lands and cooperates with the Board of Regents in research on land under its control (OCGA Sec. 12-3-53). DNR encourages archaeological research throughout the SINERR and Sapelo Island prior to any land-disturbing activity or any alteration to a structure or landscape.

b. General Regulatory Powers of the State

The State also regulates certain resource uses on all lands in Georgia, whether State-owned or not. Several State environmental laws have special relevance to the SINERR. The Coastal Marshlands Protection Act of 1970 authorizes DNR to regulate the alteration of coastal marshlands (OCGA Sec. 12-5-200 et seq.). This authority, plus the State's claim to own all marshlands except those for which a Crown or State grant can be proved,

allows DNR to prevent detrimental alteration of marsh in the vicinity of the SINERR. The Shore Assistance Act of 1979 (OCGA Sec. 12-5-230 et seq.) regulates alterations of coastal sand dunes, beaches, sandbars and shoals, to maintain their recreational value and their ability to protect real and personal property and natural resources from the damaging effects of floods, winds, tides and erosion. The Game and Fish Code, a compilation of laws regarding fish, wildlife, and protected plants (OCGA Title 27), allows DNR to regulate the time and place of taking animals and fresh- and salt-water fish species. Another State law protects sea oats, a species of plant which is important to the stability of the sand-sharing system (OCGA Sec. 12-5-310 et seq.).

Several State laws protect water quality. The Water Quality Control Act requires a permit for discharge of pollutants into Georgia waters and sets standards for wastewater treatment. The Erosion and Sedimentation Act of 1975 requires permits for land-disturbing activities, defined as any land change which may result in soil erosion and the movement of sediments into State waters or onto lands within the State. The Georgia Health Code requires a permit to construct any type of individual sewage disposal system and regulates the kinds and designs of systems which may be used.

The State of Georgia claims ownership to the high water mark in all navigable tidewaters. As authorized in OCGA Sec. 50-16-61, the Governor has general supervision over all the properties of the State, with power to make all necessary regulations for the protection of those lands.

The Resident Manager enforces the Game and Fish Code and administrative policies of DNR. The Manager and other SINERR staff travel throughout the SINERR on a daily basis. They observe human use and visible evidence, if any, of changes which such use may have on the SINERR. They recommend changes which may be required to protect SINERR resources adequately from overuse by residents and visitors.

Education is an important part of law enforcement. Brochures, signage and interpretive programs which DNR develops for the SINERR will describe the resources and the regulations which are in place to protect them. At present, the public visits the SINERR primarily on guided tours and managed hunts. Controlling public use and its impacts is not difficult under these conditions, but tour guides can teach visitors to minimize the local impacts of their presence at tour stops. The tour guides also learn

much about visitors' awareness of estuarine resources--information which helps in designing brochures, signage and other educational tools.

4. Habitat Management

a. Forest Resources

Special condition 1.e(2)(d) of the SINERR grant award authorizes commercial timber harvesting at commercial maturity in the area of the existing pine plantation. The forest resources are harvested on Sapelo Island using best management practices and in accordance with an approved timber management plan. Following this harvest, the area is to be managed with the objective of encouraging succession to a typical climax oak forest. DNR will perform commercial harvest of pine trees on upland areas within the SINERR about every eight years, depending on forest conditions. Harvest will be timed to prevent destructive outbreaks of disease, pests or fire. Consistent with special condition 1.c(1), DNR will minimize manipulative management of these forests. Areas in which pines are harvested will not be planted back to pines. Instead, succession to climax hardwood stands will be encouraged on suitable sites.

The major insect threat to pine forests on Sapelo Island is the southern pine beetle. Minor outbreaks can be addressed by removal of the affected trees, but major infestations may require that an entire stand be removed to prevent spread to adjacent stands. Trees under stress are most susceptible to this pest. Thinning mature stands to a basal area of 70-80 square feet per acre is very effective as a control. During thinnings, trees infected with fusiform rust or other diseases can also be removed. Such preventive measures will help protect the forest on Sapelo Island.

A major threat to life and property is wildfire, which occurs when litter on the forest floor burns uncontrollably, destroying trees or improvements. The danger is greatest in pine forests, which produce a large amount of combustible litter each year. Live oak leaves, by contrast, are relatively incombustible, but a live oak forest interspersed with pines or adjacent to pine stands can be damaged if enough pine tinder has accumulated.

Wildfire can be effectively prevented by the technique of controlled burning, in which fires are set while the litter build-up is still slight. Controlled burning is feasible during periods of high humidity and low wind speed, when a "cool" fire can be maintained.

The Resident Manager will ensure that the SINERR forests are inspected as often as necessary to evaluate their health and the amount of combustible material which is on the forest floor. The DNR forester, after coordinating with the Resident Manager, will schedule thinnings, major cuts, and controlled burns as required to minimize the risk of disease, insects or wildfire to Sapelo's forests and improvements.

The hardwood forests within the SINERR will be excluded from harvest. Individual trees which die will be left as feeding, nesting and perch sites for the many types of wildlife which use them.

As part of the SINERR's research program, DNR will encourage scientists to submit proposals to study possible effects of the forest management program on the SINERR's aquatic resources. Such applied management studies are a major objective of the National Estuarine Reserve Research System.

b. Landing Field

DNR will mow the landing field as needed to keep it usable for the infrequent aircraft use it now receives. Every several years DNR will burn it to prevent the accumulation of combustible litter. Burnings will be scheduled to allow monitoring of nutrient flows into the marsh, to determine what effects planned upland burning may have on the estuary.

c. Coastal Marshlands and the Sand-sharing System

The Coastal Marshlands Protection Act and the Shore Assistance Act are important pieces of legislation for the protection of marsh and the sand-sharing system statewide. State ownership of the SINERR ensures that the Duplin River estuary and the beach will not be altered by developmental activity.

5. Relationship to Other Program Areas

Resource protection depends upon the findings of scientific research, the translation of relevant findings into management guidelines, enforcement, and educating SINERR users about the need for continued resource protection. In turn, resource protection is necessary for success in research and monitoring, the educational and interpretive programs, and continued recreational and other benefits derived from the Duplin River estuary. DNR recognizes the central role of resource protection in managing the SINERR.

C. Research and Monitoring

1. Research Mission

DNR has adopted the Advisory Committee's recommended mission statement for the SINERR research and monitoring program. The SINERR Advisory Committee has recommended it in this form:

(a) Provide long-term protection to the SINERR, to support and promote basic and applied scientific research.

(b) Provide researchers and managers with baseline data on certain physical, chemical and biological parameters obtained through an onsite monitoring program.

(c) Communicate the significant results of research to the public and to coastal managers and decision-makers, through a program of information and education.

DNR has also adopted the recommended research and monitoring goals and objectives. They appear in full in Appendix G. The research goals are as follows:

Cultural-resource research: Assess the cultural resources within the SINERR.

Water processes: Increase knowledge of the basic processes involving water movement, water mixing and natural variations in water parameters within the SINERR.

Sediment processes: Increase knowledge of how sediments are transported and transformed within the SINERR.

Nutrients and other chemical inputs: Increase knowledge of the natural variability of nutrients and other chemical inputs to the salt marsh, and of the mechanisms by which the undisturbed salt marsh within the SINERR functions.

Primary and secondary production, and fishery habitat requirements: Improve knowledge of life cycles of important species which depend upon salt-marsh estuaries, and quantify the importance of the salt marsh and related upland areas.

Management-related research: Evaluate the effects of management decisions on the health and stability of the SINERR's ecosystem.

Data storage and retrieval system: Establish a comprehensive database of baseline and research data, which allows rapid access to

historical and future research and monitoring information gathered within the SINERR.

2. Monitoring Mission

DNR has adopted the following goals for trend monitoring, as recommended by the SINERR Advisory Committee:

Meteorological monitoring: Collect meteorological data on an hourly basis at several locations in the SINERR.

Hydrological monitoring: Collect hydrological data at various sampling sites in the SINERR.

Biological monitoring: Collect biological data at various sampling sites within the SINERR.

Data management, analysis and reporting: Make historical monitoring data available to scientists, and analyze the data collected to enable SINERR managers to detect unusual changes within the SINERR.

3. Guidelines for Administering the Research and Monitoring Programs

DNR recognizes that the monitoring program is a very long-term undertaking. DNR and the Marine Institute will coordinate their monitoring efforts to ensure that data collected are useful, compatible, timely, stored in an easily retrievable manner, and accessible to all interested parties, including scientists and resource managers. The current level of data collection will be regarded as a practical minimum. DNR and NOAA will discuss additional monitoring tasks which may become desirable as research needs change. Single-event monitoring, such as sampling runoff from prescribed burns within SINERR forests, will occur to give managers information about the effects of management practices.

The SINERR research objectives describe areas of research which DNR and NOAA believe would be valuable to explore. The SINERR will solicit research proposals from the Marine Institute and other research entities to submit to NOAA for competitive funding under the Reserve Program and other sources of funds. Scientists who perform research within the SINERR with funds from sources outside the Reserve Program will notify DNR of the scope and timing of such projects.

DNR and the Marine Institute have the authority to approve research performed within the SINERR. The Marine Institute must authorize research proposed to be done under its auspices or within the Regents lease at the south end of the SINERR. DNR must authorize research performed within

the lands under its control. DNR also coordinates peer review of research projects for which NOAA funds are requested, and NOAA too must approve these projects. The research objectives describe the general areas within which research is desired. They enable DNR to set research priorities with the help of the SINERR Advisory Committee and to work with the Marine Institute to communicate to the research community opportunities which will be consistent with desired research projects. They also help NOAA, DNR and the Marine Institute to set priorities for the use of research funds or other scarce resources.

It is anticipated that the State Archaeologist and the faculty and students of West Georgia College will take the lead in performing archaeological survey work on Sapelo, as they have done in the past. DNR will request the State archaeologist to coordinate closely, as necessary, with the University of Georgia regarding archaeological efforts on lands within the Board of Regents lease.

D. Education and Interpretation

1. Context for Management

The SINERR serves a valuable educational purpose. The site gives the public a chance to learn about the complex nature of an estuarine system, how it functions and how humans affect it. DNR has adopted the following mission statement for education and interpretive programming, as recommended by the SINERR Advisory Committee:

> Communicate to various publics, through the SINERR, the value of estuarine areas and the roles they play in the quality of life, so that informed decisions can be made about the use of estuarine areas.

2. General Policies

DNR has adopted the Advisory Committee's recommended goals and objectives for education and interpretive programming. These appear in Appendix H. The goals are as follows:

Content: Through SINERR programs, develop the message that Georgia's coastal area is a product of natural forces, modified by human activities which require effective, long-term management.

"Multiplier" Audiences: Concentrate educational and interpretive resources on reaching audiences who will communicate their knowledge about estuarine and other coastal resources to many other people.

The General Public: Communicate with the general public through effective educational and interpretive programming.

Educational and Interpretive Resources: Extend the SINERR's educational and interpretive program by cooperating with other organizations which perform related tasks.

Program Evaluation: Evaluate, through the SINERR annual report, the effectiveness of the educational and interpretive program and its effect on SINERR resources.

3. Interpretive Message and Themes

The content goal states the message for the SINERR: the coastal area is a product of natural forces, modified by human activities which require effective, long-term management. To communicate this message, DNR will use the following themes in its educational and interpretive programming: a description of the SINERR's natural history, the human activities which have occurred within the SINERR and how these activities have modified the natural system, and how decisions are made about the use of Georgia's coastal resources.

4. Printed Materials

Current publications would benefit from a review and possibly revision. Additional publications will be developed to reach specific "multiplier" audiences: press packets and news releases for media, summaries of management-related research findings for public officials, and a periodic newsletter for "alumni" of visits to the SINERR. Information provided in such publications will reach more people than will the publications given to individual members of the general public.

Placing printed curriculum materials in primary and secondary schools will reach tomorrow's citizens with important knowledge about estuarine resources. DNR will work with educators to develop classroom materials similar to Project WILD activities--materials which can be used in the classroom alone, or as part of a class visit to the SINERR.

5. Audiovisual Materials

DNR will develop additional audiovisual materials, as a means of reaching more people with existing staff. An archive of slides and presentation texts will be prepared for personal delivery by SINERR staff, by volunteers, or (with audiocassette narration) for use by classroom teachers and by members of community organizations in their meetings. DNR will also develop three ten-

minute videotapes: a SINERR overview for elementary-school students, a similar overview for older audiences, and an introduction to the history and significance of the research which the Marine Institute has performed at Sapelo Island since 1953.

6. Signs and Exhibits

Signage in the Meridian Dock exhibit area introduces the visitor to the SINERR. DNR will place interpretive signs on the Sapelo Queen to continue this introduction. Signage at Marsh Landing Dock will describe the monitoring station there. DNR will also develop a new nature trail which interprets the upland forest, estuarine area and beach-and-dune systems through which the trail passes. Interpretive signage will appear at key locations on the trail.

DNR plans to build an interpretive center in the SINERR. It will include an exhibit area to replace visitor use of the exhibit areas at the Marine Institute and Long Tabby. DNR will add to the professionally designed exhibits at Meridian Dock and the interpretive center which convey the educational and research themes at the SINERR. Outdoor exhibits will be placed at several locations, including the Marsh Landing dock, to interpret the monitoring station there. One or more traveling exhibits will be developed for use in schools and other offsite locations.

These exhibits will be designed and built under the guidance of the Education Coordinator. The Interpretive Assistant will use them as part of the guided activities for tour groups. The exhibits will serve self-guiding groups, as well.

7. Program Activities and Services

a. Future Onsite Activities

DNR will build an interpretive center on Sapelo Island, which an interpretive trail will connect to Marsh Landing dock and Nannygoat Beach. DNR will place a primitive campground in the Natural Area, connected to the interpretive trail. These facilities are described in detail in Sections IV.A.10 and IV.A.11. The center and trail will serve groups guided by DNR staff and by DNR-trained leaders. The campground will serve organized groups guided by leaders whom DNR has trained.

b. Future Offsite Activities

DNR will develop and distribute curriculum materials for classroom use. These will introduce the SINERR to students preparing to visit

the island, but they will be designed to serve groups who will not visit, as well.

DNR will evaluate current SINERR publications to determine what revisions are needed. DNR will also decide whether new SINERR publications are required for the general public or special markets.

Once the Education Coordinator has taken charge of educational and interpretive programming onsite, the Resident Manager will be able to make more offsite presentations about the SINERR and estuarine resources generally. The Coordinator will assist by preparing program materials for the Manager. The Coordinator will also make presentations offsite as needed.

E. Public Access and Recreation

1. Context for Management

Estuarine education must be enjoyable to be effective. Recreation within the SINERR has teaching value, and the educational program has a recreational component. DNR will manage most recreational use of the SINERR to increase its educational value. Management will be designed to avoid adverse effects on the estuary and on research projects.

2. Access Policies

Access to Sapelo Island uplands will be closely regulated. DNR has prepared access policies which generally allow island residents, their visitors, and individuals engaged in official state business to use the uplands. Official state business includes authorized SINERR tours, group camping, and public hunting. A copy of these policies appears as Appendix I.

3. Wildlife-oriented Recreation

Hunting, fishing and wildlife observation will continue to be a part of SINERR programming.

4. Boating

Recreational boating will continue within the SINERR.

5. Hiking and Camping

The planned nature trail will lead from Marsh Landing dock eastward past the proposed interpretive center and end at Nannygoat Beach. It will pass through upland forest, estuarine, and dune-and-beach environments, with interpretive signs and exhibits at suitable locations. The trail will serve groups who prefer a closer look at the SINERR than is possible on the driving tours. All users will be members of groups which are

accompanied by DNR staff or a leader trained by DNR. There are no plans to allow unguided recreational hiking within the SINERR. Such use could damage estuarine resources and research projects.

The Cabretta camping area is beginning to show signs of overuse, particularly in the fragile dune areas. DNR plans to build a primitive camping area with restrooms in the Natural Area for use by educational groups. The Cabretta campground will then be closed to regular use.

The new camp will be accessible from the trail but some distance away from it, to separate the campers from day-use groups. The camping groups must also have leaders trained by DNR to use these facilities. Requiring that group leaders be trained will enable DNR to reduce staff time now spent with camping groups, and it will minimize the risk of misuse by group members.

6. Swimming and Beach Use

Swimming and beach use at the SINERR will continue at present levels, but DNR will not increase its emphasis on these activities. Groups using the proposed campsite and nature trails will make more recreational use of the beach than the SINERR tours are capable of doing.

7. Land Acquisition

State ownership of the SINERR lands is an important protection tool. The State owns nearly all of this property. The only known title exception concerns the lighthouse tract, about 200 acres at Sapelo's south end. An heir of one of R. J. Reynolds' wives has asked DNR to make a settlement of a one-half undivided interest she claims in this tract. DNR is negotiating with the heir's representatives to resolve the claim.

From time to time, other individuals have claimed title to lands within State ownership boundaries. DNR will evaluate the evidence presented to support these claims and will request assistance from other agencies as required to resolve them.

IV. FACILITY DEVELOPMENT AND STAFFING

A. Facilities

1. Meridian Dock

Development on this tract includes a 25x60-foot wooden platform on pilings with a floating dock attached; the asphalt entrance drive and unpaved parking for 75 vehicles; two garages, for 3 and 16 cars; and a multipurpose building.

The Meridian Dock tract will continue to be the primary point of departure from the mainland. This purpose will guide its use and development. Parking and traffic flow have become less satisfactory as SINERR visitation has increased. A contributing factor is the use of buses to transport some tour groups to Meridian Dock. DNR will redesign parking to improve traffic circulation.

All visitors to the SINERR have an opportunity to view the introductory exhibits in the multipurpose building. These exhibits have become outdated. DNR will evaluate and renovate exhibits in the visitor center at Meridian Dock. DNR will also prepare exhibits such as interpretive graphics to place on the ferry for visitor use.

2. Marsh Landing Dock

The Marsh Landing dock is a partially roofed structure without sides, built on a wooden platform supported by wooden pilings, and connected by ramps to a floating dock. Facilities at the dock include a dock house, water-well pump house and restrooms. About three-tenths of a mile to the southeast, on the upland, are a frame residence with a garage and utility building. These are occupied by one of the two DNR vessel captains.

An asphalt road connects Marsh Landing with the rest of Sapelo Island. It runs southeasterly across Sapelo, ending at Nannygoat Beach. Connecting roads provide access to the rest of the island.

DNR will continue to operate Marsh Landing as the primary passenger access point for Sapelo Island. DNR will maintain in operational condition the residence, dock and support facilities at Marsh Landing. It will be necessary to redesign parking at Marsh Landing to improve traffic circulation. The proposed nature trail will begin at Marsh Landing. Visitors will walk to the interpretive center to be built in Skeet Field, about one-half

mile east of the dock. Here they will receive an orientation about SINERR resources and uses, including guidelines for their group's activities.

3. Residences

Four DNR residences face the estuary's east side just north of Barn Creek, and another is located near the greenhouse at the south end of the island.

The Marine Institute's Director lives in Azalea Cottage, near the Marine Institute (Figure 11). Permanent staff at the Marine Institute occupy two residences at Post Office Creek. A garage, a utility building and two docks serve these houses. Five staff houses, a small group of mobile homes and a utility building occupy a tract known as Shell Hammock, which overlooks Doboy Sound. Several apartments and a dormitory in the Marine Institute laboratory complex, and a second group of mobile homes nearby, house visiting researchers and students.

4. Marine Institute

The Marine Institute is located on a 1,500-acre parcel of upland, marshland, sand dunes and beach which encompasses almost the entire southern end of Sapelo Island (Figures 7 and 11). This parcel also contains most of the major structures on Sapelo Island. It was subject to the 50-year lease between DNR and the Board of Regents. The other 75 acres leased by the Marine Institute lie within the Natural Area. The lease provides that the Marine Institute will use the premises to conduct scientific research and educational activities.

Five staff houses, a small trailer complex, and a utility building occupy a tract of high ground known as Shell Hammock, which overlooks Doboy Sound just west of a diked enclosure built by R. J. Reynolds. To the east of this enclosure lies the hub of research activity: the Marine Institute Laboratory, which occupies a large brick dairy barn also built by Reynolds.

Support facilities for the laboratory include:

- a general-purpose storage building, two equipment storage buildings, two garages, two gas and oil storage structures, and a filling station for retail fuel sales to all island residents,
- one inoperative power plant, and a microwave building and tower,
- a carpenter shop and two machine shops,

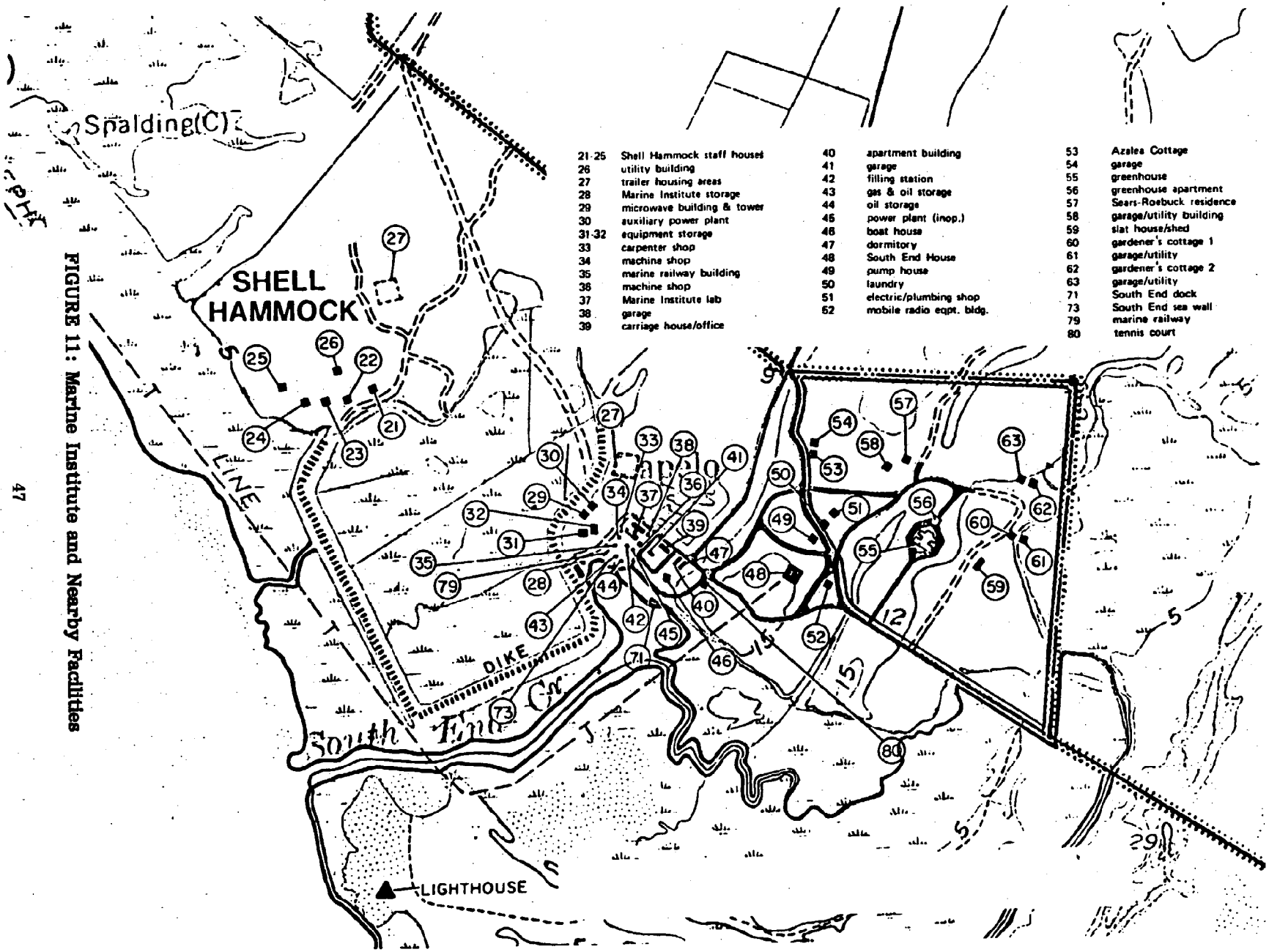


FIGURE 11: Marine Institute and Nearby Facilities

- a marine railway, support building, and boat hoist,
- two residential structures: a building with four apartments and a 30-bed dormitory,
- two administrative/storage buildings, and
- two small house trailer complexes.

The Marine Institute uses docking facilities at the south end of Sapelo for heavy freight and fuel.

The Marine Institute will continue to use and maintain the structures on this tract for scientific, educational and residential purposes as stipulated in the approved lease and operating agreement between DNR and the Board of Regents. The tours will pass the laboratory complex but will no longer visit the exhibit space in the laboratory building. This will give the visitors a view of the facilities without disturbing the Institute's scientific work.

5. R. J. Reynolds Mansion (South End House)

East of the laboratory complex about three-tenths of a mile is R. J. Reynolds' former mansion, the South End House, including a pump house and a mobile radio equipment building. The South End House is the most imposing structure on Sapelo Island. It can provide lodging for 25-30 people. The two-story structure, a composite of homes constructed by three former owners of Sapelo Island, was clearly designed for entertaining. It has two swimming pools, a ballroom, a bowling alley, and murals by Athos Menaboni, a noted Georgia artist. The Marine Institute now administers this house for conferences and other professional gatherings.

A paved road runs southeasterly from the South End House and ends on Nannygoat Beach beside a restroom, a boardwalk dune crossing, a raised picnic pavilion, and three small cabanas. A large prehistoric archaeological site is located below the surface in a pecan orchard just south of the road, southwest of South End House.

The South End House needs repairs to make it suitable for continued occupancy. Its wiring and plumbing date from the 1930s and it contains asbestos. DNR and Regents have agreed to determine what would be required to preserve the building and restore it for day use as an historic site managed by DNR. According to a preliminary study by consulting architects and engineers, such reuse is feasible.

DNR and Regents will propose to restore the Main House for day use only if the current conference activities can be relocated suitably. A second preliminary study suggests that Long Tabby and surrounding buildings may be adaptable for conferences without loss of meeting, dining or sleeping space. If DNR and Regents agree on a plan for all these changes, they will have to seek funds from the General Assembly to carry it out.

6. Game and Fish Division Regional Office

The regional office and several residences occupy a 28-acre upland tract which lies between the northwest end of the landing strip and Post Office Creek, just south of Riverside Canal (Figure 12). The creek takes its name from the Sapelo Island post office, which is located on this tract. DNR's administrative center is here. Permanent staff at the Marine Institute occupy residences at Post Office Creek which are known as Ashantilly and the airport residence. A garage, a utility building, and two docks complete the list of structures located here.

Long Tabby, measuring about 25x100 feet, is DNR's main administration building. It contains modest resource exhibits and an audiovisual room which is also used as a laboratory when school groups are visiting.

Associated with Long Tabby are three storage buildings, a wood shop and an unusable swimming pool. Boat traffic at the docks consists chiefly of inboard and outboard vessels less than 27 feet in length, which make one or two trips a day.

DNR will continue using the Post Office Creek tract for administrative, educational, residential and related purposes. It will maintain the docks and other structures in operational condition. A new regional administrative center is being built in Brunswick. It is scheduled for completion during 1990. When it is ready for occupancy, the Game and Fish regional office will move to Brunswick.

Long Tabby will continue to serve as the SINERR administrative office until the proposed interpretive center is built. When DNR no longer maintains offices in Long Tabby, the building can be put to other uses. DNR and the Marine Institute will discuss possible uses of the building.

7. Landing Field

This 170-acre upland tract lies on Sapelo Island's west side about one-half mile northeast of Marsh Landing (Figure 12). It consists of a

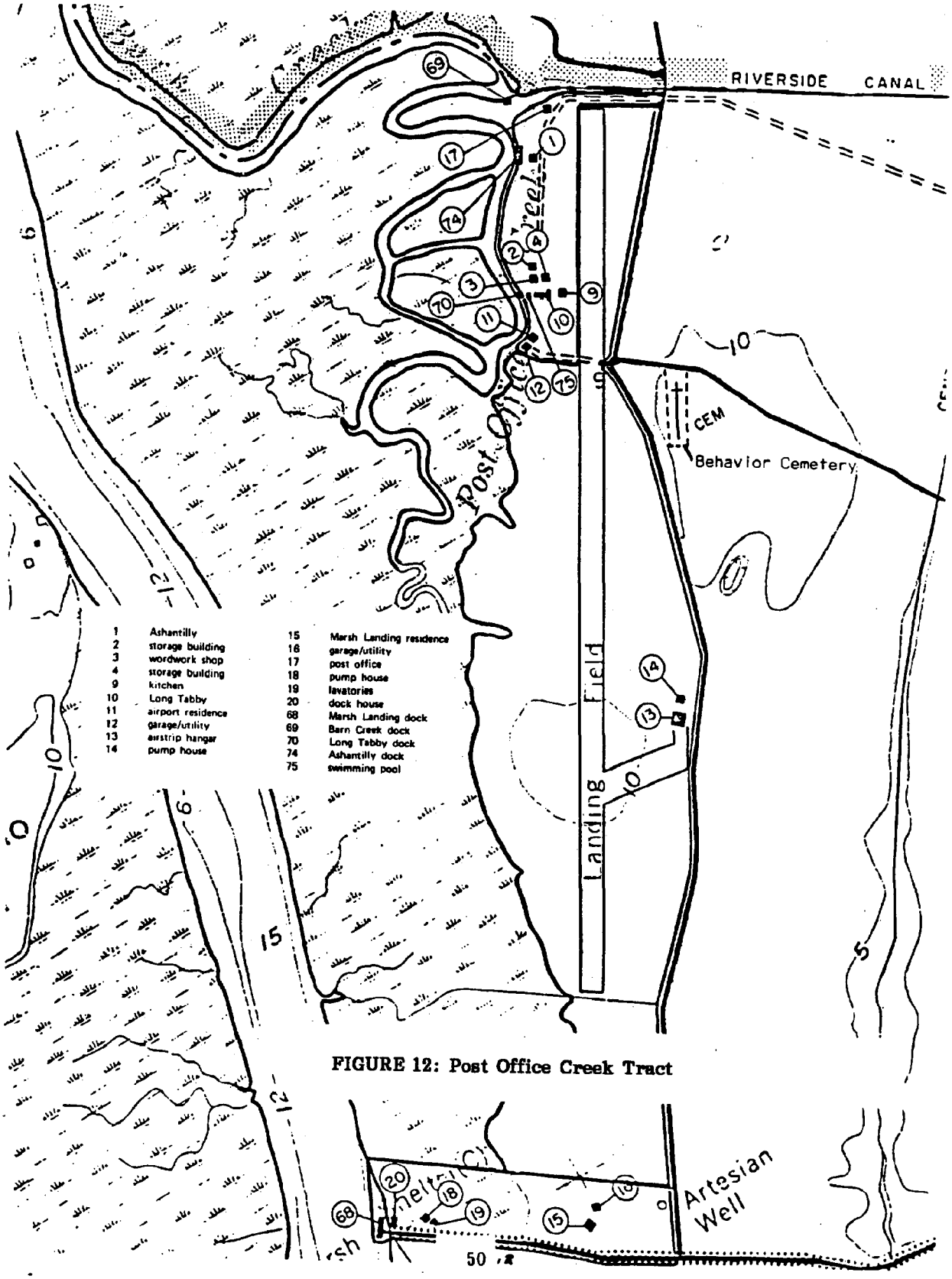


FIGURE 12: Post Office Creek Tract

north-south grass airstrip with landing lights, a short taxiway and a 75x75-foot steel hangar. The Federal Aviation Administration limits access to aircraft which have specific State business and which must obtain prior permission from the SINERR Resident Manager. The most frequent users of the airstrip are DNR's Game Management and Law Enforcement personnel, and Marine Institute staff. Because of its surface and length, the strip generally serves only helicopters or small, fixed-wing, propeller-driven aircraft. The average number of flights using the strip is less than one a week. This level of operation appears to have no adverse effects on the Duplin River estuary.

An untested archaeological site appears to underlie the airstrip. The State Archaeologist has determined that aircraft operation is not likely to harm this cultural resource. Testing would require digging, which would make the airstrip's surface unsafe for fixed-wing operations. DNR will continue restricting aircraft traffic using the field to persons having DNR permission and having legitimate State business on Sapelo Island, when boat travel is not feasible. The landing surface will be maintained in a usable condition.

8. Moses Hammock Hunting Camp

Hunters on Sapelo Island stay at a camping area on Moses Hammock, a small island near the Duplin River's upper end which is connected to Sapelo by an earthen causeway (Figure 13). It consists of a grassy clearing under trees, where the hunters pitch their tents. Amenities include a dock, a hunter checking station, a generator house, a well, a cooler and restrooms.

DNR will continue to use the Moses Hammock camping area for hunters. DNR will monitor use of the camping area for possible effects of such use on the Duplin River estuary.

9. Kenan Field Timber Dock

This 10-acre tract of upland and marsh lies on the west side of Sapelo Island, about two miles north of Marsh Landing. It is the point from which timber harvested on the Reynolds WMA leaves by barge for the mainland. The only improvement is a dock which extends 90 feet from shore, with a 15x50-foot working platform and two loading ramps. The barge loads timber harvested on the island at this area.

The timber barge travels at any stage of the tide. The tug and barge may vary in size and length, according to the contractor's daily requirements. Normally, the barge measures about 25x100 feet. The mainland offloading point is on private property at Valona, Georgia. DNR will continue

FIGURE 13: Moses Hammock Hunting Camp

using the Kenan Field timber dock to remove timber harvested on Sapelo Island, using sound protective practices.

10. Orientation and Interpretive Center

So far, DNR has used guided tours as the core of the SINERR interpretive program. This approach has made it easy to keep group members away from fragile resources and research projects, and it has been possible to adapt the contents of each tour somewhat to address the members' interests. Many visitors come away from the SINERR tours feeling a personal sense of involvement with the SINERR.

This approach is very labor-intensive, however. DNR could inform only 3000 tour visitors about the SINERR during 1988. SINERR staff need to develop materials and programs to take offsite. Time is too limited for a significant level of offsite activity at present.

With proper training, some individuals can become docents to guide their own groups once they arrive at the SINERR. DNR will use the interpretive center and trail to train volunteer leaders and to orient and educate qualified self-guiding visitor groups.

DNR will build a center for orientation and interpretation near Marsh Landing. It will include exhibits about the SINERR and the Marine Institute, a small theater for audiovisual presentations and lectures, classroom and laboratory space, an information and sales area, and public restrooms. SINERR staff will have offices in this building. The Sapelo Island post office will also be housed in the center.

11. Interpretive Trails

After receiving an orientation in the center, visiting groups will continue on a system of interpretive trails. Trailside graphics and outdoor exhibits will teach visitors about estuarine systems, research and management by pointing out resources and management activities. The group leader will have received training to provide more information and answer some questions which group members are likely to ask.

DNR will first build one trail which interprets the island's geological development, the estuarine environment, the upland forests, and the beach and dune system. DNR will monitor the trail to protect against overuse and to determine the need for improvements. If the trail proves to be effective when used by self-guided groups with a trained leader, DNR will evaluate the possibility of extending the trail into a system.

DNR and the Marine Institute are discussing possible locations for a camping area not far from Nannygoat Beach. The Cabretta campsite is showing signs of overuse, and an alternate campsite would be desirable. Connecting a camping area to the interpretive trail with a side trail for use only by the campers will enable them to carry their own equipment rather than requiring DNR personnel to transport them. It will also give the campers easy access to the interpretive resources of the center and the trail.

B. Personnel Requirements

1. SINERR Staff

The Resident Manager will continue to have day-to-day responsibility for managing the SINERR. The Interpretive Assistant will continue to handle tour scheduling and to present tours. The Assistant will also orient visitors and give interpretive programs at the center and, on some occasions, in the camping area and on the trail. The Wildlife Technician III, the Wildlife Technician II and the Mechanic will continue their present duties.

DNR will hire a Marine Educator qualified to implement the educational and interpretive program. DNR will consider having this person interpret the Gray's Reef National Marine Sanctuary as well as the SINERR, since the two programs are closely related, geographically and conceptually.

The Marine Educator will develop and present training programs to certify volunteer guides, who then are authorized to lead groups in the SINERR. These guides will include teachers and instructors, members of conservation and civic organizations, docents to guide the general public on walking tours, and students from the Governor's intern program. The Marine Educator will refine the content of the general public tours and add more discussion of the Marine Institute's research programs. The Marine Educator will help DNR's cinema unit develop three brief video programs for use at the orientation center and offsite.

The Marine Educator will extend offsite activities in several other ways. With help from the Marine Extension Service and other sources, the Educator will develop curriculum materials for classroom use. The Educator will seek the assistance of the Department of Education to distribute these educational materials and video programs to public school systems, private schools and colleges.

The Marine Educator will extend public outreach of the SINERR educational program. He or she will help develop the slide archive and presentation texts which the Educator and the SINERR Coordinator will use offsite. The Educator will develop exhibits and informational materials for placement at appropriate mainland locations. The Educator will develop publications for use by multiplier audiences such as the media, public officials and "alumni" of visits to the SINERR.

DNR has used one student intern each year for SINERR activities. It will now seek one student intern per quarter for the SINERR.

2. Marine Institute Staff

The numbers of Marine Institute employees and associated scientists will vary to some degree with funding. The permanent managerial and research staff are expected to remain at about nine persons. DNR encourages the hiring of a public-information officer/research coordinator for the Marine Institute who can translate SINERR research findings for use in the SINERR educational program. This person may also help coordinate research projects and programs in the SINERR. NOAA and the Marine Institute will explore funding such a position, in cooperation with the DNR.

3. DNR Research and Monitoring Staff

The State Archaeologist and employees of the Environmental Protection Division, the Coastal Resources Division and the Game and Fish Division will continue to perform research and monitoring tasks as described in the earlier sections on cultural-resource research and monitoring.

4. McIntosh County Chamber of Commerce

The McIntosh County Chamber of Commerce operates a welcome center in Darien, Georgia. It will continue to publicize SINERR tours, notify DNR of tour participants, sell tour tickets and send tour information to people who have made reservations, as specified in the agreement between the Chamber and DNR (Appendix F).

V. ADMINISTRATION

Establishing the Sapelo Island National Estuarine Research Reserve (SINERR) required cooperation between the National Oceanic and Atmospheric Administration (NOAA) and other federal, State and local agencies. In 1969, the State received funds from the U.S. Fish and Wildlife Service to buy lands and waters at Sapelo Island. Some of the upland and all of the marsh so acquired were later included in the SINERR. In 1976, the Department of Natural Resources (DNR) received funds from NOAA. These funds helped set up the SINERR. Since that time, other NOAA grants have supported operations and research in the SINERR.

All agencies involved have important duties regarding the SINERR. The U.S. Department of Commerce administers the National Estuarine Reserve Research program through NOAA's Marine and Estuarine Management Division. NOAA provides policy guidance from the national program perspective. The SINERR may request financial support from NOAA's various categories of reserve funding. Through these grants, NOAA personnel work directly with the Resident Manager to accomplish the program objectives of the grant.

Pursuant to Sections 312 and 315 of the Coastal Zone Management Act, NOAA may periodically conduct performance evaluations on the operation and management of the SINERR. These evaluations ensure that the SINERR is meeting applicable grant conditions and national policies. The evaluations also acknowledge and support ongoing programs which address SINERR management needs.

DNR has direct responsibility for managing the SINERR. It manages the site in accordance with applicable NOAA policies, grant award conditions, this management plan and the Regents lease and operating agreement. Through the Reserve program, DNR prepares annual reports on SINERR activities. When combined with grant performance reports and site visits by NOAA, these annual reports provide the basis for program evaluations.

The Board of Natural Resources prepares specific policies for DNR and the SINERR. It also approves DNR's budget requests, including funds and positions for the SINERR.

DNR also relies on the SINERR Advisory Committee for professional advice about research, education and management of the SINERR. The Committee reviews goals and activities each year and recommends useful

changes. The technical task forces prepare recommendations for the Advisory Committee to consider. The Committee gave its first recommendations to DNR in 1989. Estimated costs to carry out the proposed improvements appear in Appendix J.

Public comment is an important source of ideas for managing the SINERR. DNR made a draft of this management plan available for public review from November 1989 through January 1990. Many individuals and organizations made comments at two public meetings, one in Darien, Georgia, on December 6, 1989, and one on Sapelo Island on January 10, 1990. DNR also received written comments about the plan. Appendix K summarizes these comments and the uses which DNR will make of them in SINERR programs.

Since 1953, the University of Georgia has done research within the Duplin River estuary. The Georgia Board of Regents is the University's parent organization. In 1976, the Board of Regents received from DNR a fifty-year lease and an operating agreement for the south end of Sapelo.

Permanent staff and visiting scientists perform research at the Marine Institute. They publish research findings in professional journals. The Institute also hosts meetings of scientists, educators and students on Sapelo Island.

VI. REFERENCES CITED

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Sapelo Island

National Estuarine Research Reserve

Management Plan Appendices

National Estuarine Research Reserve Program

Sapelo Island

U.S. Department of Commerce

Sapelo Island

Appendix A:

Lease between DNR and Board of Regents

STATE OF GEORGIA,

COUNTY OF FULTON:

LEASE AGREEMENT

THIS LEASE AGREEMENT made this 21st day of December, 197 6 by and between the DEPARTMENT OF NATURAL RESOURCES, an agency and department of the State Government of Georgia, acting for and on behalf and in the name of the State of Georgia, whose business address is 270 Washington Street, S. W., Atlanta, Georgia 30334 (hereinafter sometimes referred to either as "the Lessor" or as "the Department") and the BOARD OF REGENTS OF THE UNIVERSITY SYSTEM OF GEORGIA, an agency of the State Government of Georgia, whose business address is 244 Washington Street, S. W., Atlanta, Georgia 30334 (hereinafter sometimes referred to either as "the Lessee" or as the "Board of Regents").

W I T N E S S E T H:

WHEREAS, by virtue of that certain December 8, 1975 Option To Purchase Properties, as amended, granted by the Sapelo Island Research Foundation, Inc. (hereinafter referred to as "the Foundation"), the State of Georgia acting by and through the Department, has an option to purchase all of the real property, together with all personal property located thereon (which is owned by the Foundation); said real property constituting a portion of what is known as Sapelo Island and Meridian Dock Landing (except for that area known as Hog Hammock); all of said properties being more particularly described in said Option, and (except for said personal property) being hereinafter collectively referred to as "the South End Properties"; and

WHEREAS, since July 1, 1953 Regents, acting by and through the University of Georgia, a unit of the University System of Georgia, and pursuant to agreements between Regents and the Foundation, has conducted an institute being located on the southerly portion of the South End Properties which are located

on Sapelo Island; and

WHEREAS, the real property facilities utilized by the Regents in the conduct of said institute are subject to the terms of said Option; and

WHEREAS, subsequent to the exercise of said Option, if any, and a purchase by the State of Georgia pursuant thereto, if any, all said real property and facilities, as well as the personal property of the Foundation located thereon and therein, shall be owned by the State of Georgia and shall be within the custody, control and management of the Department; and

WHEREAS, the State of Georgia, the Foundation, the Department and Regents mutually desire that Regents continue to utilize said properties (both real and personal) and facilities in the conduct of said institute for scientific research and educational activities;

NOW, THEREFORE, pursuant to the authority vested in the State of Georgia and the Department by Ga. Laws 1974, page 273 (Ga. Code Ann. §43-1707), in order to enable the Board of Regents to continue said scientific research and educational activities without interruption subsequent to the purchase, if any, of the South End Properties by the State of Georgia, and in consideration of the mutual covenants, conditions, obligations and agreements herein contained, the parties hereto do hereby agree as follows:

1. DEFINITIONS. The following words and terms, when used in this lease agreement, shall have the following meanings unless other meanings are otherwise clearly apparent from the context:

A. The work "land" shall mean the real property referenced in paragraph 2 hereof, and more particularly described in EXHIBIT "A" hereof, together with all structures and other improvements located under, on or above the land as of the effective date of this lease agreement.

B. The word "premises" shall mean the land, together with all and singular the rights, members and appurtenances

thereunto belonging, or in any wise appertaining, and the facilities (as the word "facilities" is defined herein) and the personalty (as the word "personalty" is defined herein), all as more fully described in EXHIBIT "A".

C. The word "facilities" shall mean any and all structures and other improvements which are now (as of the effective date hereof) or which may hereafter be located upon the land described in EXHIBIT "A".

D. The word "personalty" shall mean all of the personal property located on the land described in EXHIBIT "A" hereto and which will be conveyed to the State of Georgia by that certain BILL OF SALE OF PERSONAL PROPERTY, the form of which is attached to said Option as EXHIBIT "D-1" thereto and a copy of which is labeled EXHIBIT "C", attached hereto and by reference incorporated herein.

E. The words "terminate" or "termination" shall mean the end of this lease agreement whether due to the expiration of the term hereof or to an earlier end of the term, whether by reason of an uncured default hereunder or otherwise.

2. LAND & PERSONALTY LEASED. Lessor, for and in consideration of the rents herein reserved, and the covenants, agreements, duties and obligations herein made and agreed to be performed, observed and kept by the Lessee, and subject to the provisions, terms and conditions hereinafter set forth, and subject to the disputed outstanding claim of an undivided one-half interest in that area of the South End Properties commonly known and referred to as the "Lighthouse Tract" by Marianne O'Brien Reynolds Meyers and subject further to those title exceptions set forth in said December 8, 1975 Option as amended, as "Permitted Title Exception" as well as to any other exceptions to title which may be waived by the State of Georgia prior to its purchase of said South End Properties, has let, leased and demised and by these presents does let, lease and demise unto the Lessee and the Lessee

does hereby take, lease and hire from the Lessor, upon the covenants, agreements, duties and obligations herein made and agreed to be performed, observed and kept by the Lessee, and subject to the provisions hereinafter set forth, and land more particularly described in EXHIBIT "A" attached hereto, incorporated in and by reference made a part hereof, together with the personalty.

3. TERM. This lease agreement shall be for a term of 50 years beginning on the effective date hereof, unless sooner terminated as hereinafter provided.

4. EFFECTIVE DATE. The effective date of this lease agreement if any there be, shall be the second calendar day following (and not including) the day upon which the State of Georgia, acting by and through the Lessor, shall accept delivery of one or more warranty deeds, conveying to the State of Georgia the South End Properties. Notice of the effective date hereof shall be given to the parties by the State of Georgia Department of Law.

5. ESTATE FOR YEARS. It is the specific intent and agreement of the parties hereto that this lease agreement, as of the effective date hereof, grants and conveys from the Lessor and vests in the Lessee an estate for years in the premises.

6. RENTS. Lessee covenants and agrees to pay as rental during the full term of this lease agreement, the sum of $1.00 per year, said sum to be paid on the effective date of this lease agreement and on or before the anniversary thereof for each year thereafter during the term hereof.

7. PURPOSES FOR WHICH THE PREMISES ARE LEASED. It is understood and agreed by and between the Lessor and the Lessee that the premises are leased solely for the purpose of enabling the Lessee to conduct scientific research and educational activiti projects. Lessor agrees that it will cooperate with and will aid and assist Lessee's scientific research and educational

activities by taking such action as shall be reasonably necessary to provide security for Lessee's scientific research and educational activities projects against damage, destruction or other interference or interruption. Lessor further hereby agrees that Lessee may permit persons other than personnel of Lessee to use the premises on a limited basis; provided that any such use is restricted to uses in furtherance of the conduct of said scientific research and educational activities. Except as may be herein otherwise provided, no other use whatever shall be made of the premises by any person, including the Lessee, without the prior written consent of the Lessor.

8. MAINTENANCE AND USE OF PREMISES.

A. Lessee accepts the land in its present condition as suited for the use intended by the Lessee. Lessee shall not commit or suffer to be committed any waste upon the premises and Lessee shall, at its own cost and expense, maintain the premises in good order and repair. Upon termination of this lease, the premises shall be returned to the Lessor in as good or better condition than when received pursuant hereto, natural wear and tear of the facilities and personalty excepted. Lessee agrees that all personal property of Lessee on the premises is located thereon at Lessee's own risk and Lessor shall not be liable for any damage thereto or loss thereof.

B. Notwithstanding Lessee's obligations to maintain the premises, as set forth in subparagraph 8(A) above, Lessee shall not be obligated to maintain the roads, road ditches, bridges, and tide gates at bridges, all of which the Lessor hereby agrees to maintain in good order and repair during the term hereof.

C. It shall be the responsibility of Lessee, at its own cost and expense, at all times during the term hereof, to pay the premiums and to take such other actions as may be necessary to cause the premises to be insured against loss or damage by fire or other casualty. Lessor acknowledges and agrees that said insurance shall be obtained by Lessee through the State of Georgia insurance program; provided however, that said insurance shall insure both the Lessor and the Lessee as their respective interests in the premises may appear. Lessee agrees that it will not do or permit to be done in, on, upon, from, to or about the premises, any act or thing which would invalidate any insurance contract pertaining to the premises.

D. In the event the facilities shall be wholly or partially damaged or destroyed by fire, lightning, windstorm, hurrican tornado, cyclone, hail, explosion, riot, civil commotion, aircraft, smoke, land vehicle, boiler explosion or any other like or different type or kind of catastrophe during the term of this lease agreement, Lessee shall, unless the partic shall mutually agree otherwise, at its sole cost and expense and within a reasonable period of time following such damage or destruction, repair, restore or replace the damaged or destroyed facilities in accordance with plans and specifications which shall be developed by the Lessee, but which shall be subject to the approval of the Lessor. In the event that Lessor and Lessee shall mutually agree that any such damaged or destroyed facilities should not be repaired or replaced, all insurance proceeds received by the Lessee on account of such damage or destruction shall be paid by the Lessee to Lessor. Notwithstanding the fore-

going to the contrary, if the facilities shall be wholly or partially damaged or destroyed as a result of any of the catastrophes hereinabove mentioned during the last five (5) years of the term hereof, it shall be the option of Lessee, by notice to the Lessor within thirty (30) days of the date of settlement of the claim for such damage or destruction, to pay over to Lessor the entire sum of insurance proceeds payable on account of such loss or damage, or to repair or rebuild the damaged or destroyed facilities in accordance with plans and specifications developed by the Lessee and approved by the Lessor.

E. In the event of damage or destruction of any of the lease personalty as a result of any of the aforementioned catastrophes, Lessee shall repair or replace the same or shall pay over any insurance proceeds payable to Lessee upon such loss or damage to the Lessor, at the option of the Lessor.

F. It is understood and agreed between the parties that the term "waste" as used in subparagraph 8(a) above, shall not include the felling of trees by the Lessee if necessitated by Lessee's scientific research and educational activities and so long as such felling is consistent with accepted (in the reasonable opinion of the Lessor) forestry management practices and Lessor hereby expressly reserves the right to enter upon the premises for the purpose of applying such accepted forestry management practices, including, but not limited to the felling of trees when, in the reasonable opinion of the Lessor, such entry and application of forestry management practices are necessary in order to protect the property within Lessor's custody, control and management.

G. Lessee covenants and agrees that it shall not, without the prior written consent of the Lessor, utilize the Marine

Railway, designated by the number "79" on EXHIBIT "B" hereto, for any craft except craft being used by the Lessee directly in connection with and in support of Lessee's scientific and educational research. However, Lessor and Lessee agree that Lessor shall have, upon request and if available, the right to utilize the Marine Railway for the drydocking, repair and maintenance of craft used by the Lessor in connection with its custodial duties and obligations with respect to the South End Properties, as well as that property earlier acquired by the State of Georgia and located on the northern portion of Sapelo Island (said South End Properties and said northern portion being hereinafter collectively referred to as "the Sapelo Island area").

H. Lessee shall be solely responsible for and shall pay promptly when due any and all charges for utilities incurred or assessed in connection with Lessee's use and occupancy of the premises.

9. MUTUAL USES OF PREMISES.

A. Marine Railway. Use of the Marine Railway by the parties shall be as set forth in paragraph 8(G) hereinabove.

B. Marine Laboratory Auditorium. Lessee hereby agrees that it will permit Lessor, upon request, and if available, to use the Marine Laboratory Auditorium.

C. "Big House". Lessee agrees that subject to Lessee's internal policies and regulations, it will permit the Lessor, upon Lessor's request and if available and upon payment by Lessor to Lessee of a user fee therefor, to utilize that building designated by number "48" on EXHIBIT "B" hereto, commonly known and referred to as the "Big House", for official functions of the Lessor.

D. South End Boat Basin & Bulkhead. Lessee covenants and agrees to permit Lessor at all times during the term hereof to use the bulkhead located at the South End Boat Basin for Lessor's docking purposes.

E. Residences. Lessee covenants and agrees to permit the Lessor to utilize, for occupancy by Lessor's personnel, upon Lessor's request and if available, not more than one (1) residence and related outbuildings) located on the leased premises, on a temporary basis. The specific terms of such use and occupancy shall be such as are mutually agreeable to the parties' respective resident representatives provided however that in any event, Lessor shall be solely responsible for maintaining said residence in good order and repair at all times during any occupancy thereof by Lessor's personnel. All other housing facilities located on the leased premises shall be used and occupied exclusively by personnel of the Lessee (and their immediate families, if any), and by Lessee's official visitors (and their immediate families, if any).

F. Wildlife Management. Lessor hereby reserves the right and Lessee hereby agrees that Lessor, its members, officers, agents and employees, have the right at all times during the term hereof, to enter upon the leased premises and to conduct wildlife surveys, research and management; to trap wildlife; to collect birds and mammals for scientific study and to remove and dispose of diseased or injured wildlife. Lessor further hereby reserves the right for itself, its members, officers, agents, employees and authorized (by Lessor) visitors, and Lessee hereby agrees that Lessor, its members, officers, agents, employees and authorized (by Lessor) visitors, shall have the right, as frequently as

may be necessary, to enter upon the leased premises for purposes of fulfilling the requirements of federal grant programs. Provided however, that the foregoing reservation by the Lessor of the right to enter upon the premises is not intended nor shall be construed as in any way limiting or modifying Lessor's obligations, as set forth in paragraph 7 hereof, to provide security for Lessee's research projects, and the exercise of the right hereinabove reserved by Lessor shall at all times be only such as shall be reasonably necessary and shall not unreasonably interfere with Lessee's use of the premises for scientific research and educational activities.

10. LAW ENFORCEMENT. The Lessee hereby acknowledges that Lessor will patrol all of the Sapelo Island Area, including the leased premises, for law enforcement and security purposes; provided, however, that nothing contained herein shall be deemed or construed to limit in any way the law enforcement powers of either the Lessor or the Lessee under the laws of the State of Georgia.

11. COVENANT OF QUIET ENJOYMENT. Lessee paying the rents herein reserved and fully performing, observing and keeping the covenants, agreements, duties and obligations by it to be performed observed and kept, may peaceably possess, enjoy and use the leased premises during the term of this lease agreement free from any claim or interference by Lessor, except as herein provided, or from anyone claiming by, under or through Lessor.

12. DISPOSITION OF FACILITIES AND PERSONALTY. In the event that at any time during the term hereof, the Lessee shall determine that any of the leased facilities or personalty is no longer of any value to the Lessee's program of scientific research and educational activities, the Lessee shall notify the Lessor in writing of Lessee's determination and shall recommend to Lessor the disposition of such facility or such personalty

or both. Upon the written authorization of Lessor, Lessee shall proceed with the authorized disposition in a timely manner; provided however, notwithstanding Lessee's recommendation and/or Lessor's authorization, Lessee shall take only such action with respect to such facility or personalty or both as Lessee shall be authorized by law to take and only in a manner authorized by law.

13. INGRESS AND EGRESS. Lessor hereby expressly covenants and agrees that the Lessee shall, at all times during the term hereof, have such right of ingress and egress to and from the leased premises, over the Sapelo Island area, as shall be necessary to the Lessee's full use and enjoyment of the leased premises. In connection herewith, the parties acknowlege that certain Operating Agreement also entered into by the parties on the date first above written, which Operating Agreement shall be effective as of the effective date hereof and which supplements the terms hereof in providing, among other things, the rendering by each of the parties hereto to the other of certain services necessary for the mutual enjoyment by the Lessee and the Lessor of the respective portions of the Sapelo Island area possessed, used and occupied by each. Said Operating Agreement is hereby incorporated and made a part hereof; a copy of the same being labeled EXHIBIT "D" and attached hereto. It is expressly understood and agreed by and between the parties that the terms and provisions of said Operating Agreement shall at all times be subject to and controlled by the terms of the Lease Agreement.

14. TERMINATION BY LESSEE. In the event that at any time during the term hereof the Lessee shall determine that it is no long feasible for Lessee to continue its program of scientific research and educational activities upon the leased premises, Lessee may terminate this lease agreement upon 90 calendar days written notice to Lessor of Lessee's determination. Upon the termination of this lease agreement, the Lessee shall promptly

vacate the premises removing all of Lessee's personnel, personal property, and trade fixtures, if any, therefrom. Any holding over of the premises by the Lessee after the termination of this agreement shall cause the Lessee to be a tenant at sufferance and not a tenant at will.

15. DISPOSITION OF PROPERTY ON TERMINATION. Upon termination of this lease agreement all rights and interests of the Lessee in the premises shall wholly cease and determine and the premises, including but not limited to, all facilities and leased personalty, as well as all fixtures, objects and articles or whatever nature attached to the premises shall thenceforth constitute the unencumbered property of the State of Georgia, under the custody and control of the Lessor, without further act or conveyance by the Lessee.

16. GENERAL CONDITIONS, COVENANTS, AGREEMENTS, PROVISIONS, TERMS AND CONDITIONS OF THIS LEASE AGREEMENT.

A. The captions which appear preceding the text of each paragraph of this lease agreement are for the purpose of convenience only and shall be completely disregarded in construing this lease agreement.

B. Whenever the signular or plural number, or masculine, feminine or neuter gender is used in this lease agreement, it shall apply to, extend to and include the other.

C. All time limits stated herein are of the essence of this lease agreement.

D. It is mutually covenanted, understood, and agreed by and between Lessor and Lessee that each of the covenants, provisions, duties, obligations, terms and conditions of this lease agreement shall apply, extend to, be binding upon and insure to the benefit of not only the Lessor and the Lessee but, subject only to the provisions of paragraph 19 hereof, to the successors and assigns of the Lessor and to the successors and assigns of Lessee and shall be deemed and treated as covenants real, running with the premises

during the term hereof. Subject only to the provisions of paragraph 19 hereof, whenever a reference to the Lessor or Lessee is made, such reference shall be deemed to include the successors and assigns of the Lessor and the successors and assigns of the Lessee.

E. No failure of Lessor or Lessee to exercise any right or power given to Lessor or Lessee under this lease agreement, or to insist upon strict compliance by the other party with its covenants, agreements, duties and obligations under this lease agreement, and no custom or practice of the Lessor or the Lessee at variance with the covenants, agreements, duties, obligations, terms and conditions provided for in this lease agreement, shall constitute a waiver of either Lessor's or Lessee's right to demand exact and strict compliance by the other party with that party's covenants, agreements, duties, obligations, terms and conditions of this lease agreement.

F. The word "notice" as used in this paragraph 16(G) shall include not only notices in the general sense, but also statements, demands, requests, consents, approvals and authorizations. Any notice given by either Lessor or Lessee to the other shall be in writing and shall be served by sending by United States Certified Mail, postage prepaid to the party to be notified addressed as follows:

To Lessor	Commissioner Department of Natural Resources 270 Washington Street, S.W. Atlanta, Georgia
with a copy to:	Regional Game Supervisor Game and Fish Division Department of Natural Resources Sapelo Island, Georgia 31327
To Lessee:	President University of Georgia Athens, Georgia 30602
with a copy to:	Director University of Georgia Marine Institute Sapelo Island, Georgia 31327

The day upon which any notice is so mailed shall be treated as the date of service thereof. Lessor and Lessee may from time

to time by notice to the other designate a different address to which notice hereunder shall be sent.

G. Except only for causes beyond the Lessee's control, and except as provided in paragraph 14 hereof, Lessee shall occupy the premises continuously throughout the term of this lease agreement and shall not for any cause whatever desert, abandon or cease its use of the premises.

H. Lessor reserves unto itself, its successors and assigns, all mineral rights of any nature whatsoever. However, Lessor covenants and agrees that any exploration for or extraction of any such minerals shall be conducted from surface points outside the boundaries of the leased premises (unless otherwise authorized in writing by the Lessee) and in such manner as will avoid damage to the premises or substantial interference with Lessee's operations on the premises.

17. ASSIGNMENT AND SUBLETTING. Except by operation of law, neither party hereto, without the prior written consent of the other party first having been had and obtained, shall assign or sublet to any other person, firm, association, corporation, agency, department, political subdivision, or any other legal entity, this lease agreement or any interest herein or any right or privilege appurtenant hereto. Any such assignment or subletting without the consent of the other party shall be void and shall, at the option of the other party, and upon notice to the assigning or subletting party of the other party's election to exercise this option, terminate this lease agreement. Any assignee or sublessee of an interest of either party hereto shall have power of assignment and subletting on the same conditions and subject to the same restrictions as herein imposed.

18. ARBITRATION. Whenever during the term hereof, a disagreement or dispute shall arise between the parties arising out of or in connection with this lease agreement which disagreement or dispute the parties' respective resident representatives,

after good faith negotiations, have been unable to resolve, the parties' respective resident representatives shall submit said disagreement or dispute in writing to the President of the University of Georgia and to the Commissioner of the Department of Natural Resources. In the event that said named individuals are unable, after good faith negotiations for a period of 30 days, to resolve such disagreement or dispute, either of said individuals may, by notice in writing to the other submit such disagreement or dispute to the Governor of the State of Georgia, who shall act as arbiter and whose findings and conclusion the parties hereto agree shall be final and binding upon the parties.

19. DEFAULT. In the event that either of the parties shall fail or, pursuant to paragraph 20 hereof, be determined by the Governor to have failed, fully to perform all of the covenants, agreements, obligations, provisions, terms and conditions of this lease agreement by it to be performed, such failure shall constitute an event of default hereunder. Upon written notice of said default by the other party, the defaulting party shall have 30 days (or such other period as may be specified in said notice, but in any event not less than 30 days) from the date of said notice within which to cure said default; provided however that in the event that a dispute as to whether a default has occurred has been submitted to the Governor for arbitration pursuant to paragraph 20 hereof, said period for cure shall not commence to run until that the party alleged to be in default has been determined by the Governor to be in default. Upon failure by the defaulting party to cure such default within the applicable period, the other party may, by notice to the defaulting party, immediately or at any time thereafter but only during the continuance of such default, terminate this lease agreement. Upon such termination, the non-defaulting party may avail itself of any and all remedies as are now or may hereafter by law be authorized.

20. SEVERABILITY. Notwithstanding any of the provisions hereof to the contrary, the performance of each of the parties hereto of its respective obligations hereunder is subject to the authorization of the respective parties, under the laws of the State of Georgia, so to do. In the event that a court of competent jurisdiction shall make a final determination that any undertaking of either of the parties hereto, required by a provision hereof, exceeds the power and authority of the obligated party, or that any other provision hereof is otherwise invalid, in whole or in part, then such provision or portion of such provision shall be void and of no legal force and effect and shall be severed from this lease agreement; and the other provisions hereof shall not be affected by such invalidity and severance and shall continue in full force and effect.

21. ENTIRE AGREEMENT. Except only for the hereinabove referenced Operating Agreement, this lease agreement constitutes the full, complete and entire agreement between the Lessor and the Lessee; no agent, officer or representative of the Lessor or of the Lessee has authority to make or has made, any statement, agreement, representation or contemporaneous agreement, oral or written, in connection herewith, modifying, adding to, or changing the covenants, agreements, provisions, obligations, terms and conditions of this lease agreement. No modification or amendment of this lease agreement shall be binding unless such modification or amendment shall be in writing, signed by both the Lessor and the Lessee, attached to this lease agreement, incorporated in and by reference made a part hereof.

IN WITNESS WHEREOF, the DEPARTMENT OF NATURAL RESOURCES, acting for and on behalf of in the name of the State of Georgia, and the BOARD OF REGENTS OF THE UNIVERSITY OF GEORGIA, each by their proper officers duly authorized thereunto so to do, have caused these presents to be signed, sealed and delivered, all on the day, month and year first above written.

DEPARTMENT OF NATURAL RESOURCES

Signed, sealed and delivered in the presence of (as to the signature of Joe D. Tanner, Commissioner):

BY: _____
JOE D. TANNER, Commissioner in charge of the Department of Natural Resources

_____
WITNESS

_____
NOTARY PUBLIC

LESSOR

My Commission Expires:

Oct. 11, 1980

(NOTARY SEAL)

BOARD OF REGENTS OF THE UNIVERSITY SYSTEM OF GEORGIA

Signed, sealed and delivered in the presence of (as to the signatures of both John W. Hooper and Joe B. Lawley):

BY: _____
JOHN W. HOOPER, Vice-Chancellor, Board of Regents of the University System of Georgia

_____
WITNESS

ATTEST: _____
JOE B. LAWLEY, Assistant Executive Secretary, Board of Regents of the University System of Georgia

_____
NOTARY PUBLIC

My Commission Expires:

Notary Public, Georgia State at Large
My Commission Expires Aug. 31, 1979

(SEAL)

(NOTARY SEAL)

LESSEE

IN WITNESS WHEREOF, the State Properties Commission has caused these presents to be duly executed in its name this 21st day of December, 1976 for the purpose of approving the terms and conditions of this Lease Agreement.

STATE PROPERTIES COMMISSION

Signed, sealed, and delivered in the presence of: (as to the signatures of both Governor George Busbee, Chairman and Secretary of State Ben W. Fortson, Jr., Secretary)

BY: _____
Name: GEORGE BUSBEE, GOVERNOR
Title: Chairman

ATTEST: _____
Name: BEN W. FORTSON, JR.
Title: Secretary of State

_____
WITNESS

(SEAL)

_____
Notary Public

My Notary Public, Georgia State at Large
My Commission Expires Aug. 31, 1979

IN WITNESS WHEREOF, Governor George Busbee, as Governor of the State of Georgia, and under the provisions of Title 91-402 of the 1933 Code of the State of Georgia, as general supervisor of all of the property of the State of Georgia, has duly executed this Lease Agreement this 21st day of December, 1976 for the purpose of acknowledging the terms and conditions of this Lease Agreement.

George Busbee L.S.
GEORGE BUSBEE
Governor of the State of Georgia

Signed, sealed and delivered in the presence of:

Witness

Notary Public

My Commission Expires:

Notary Public, Georgia State at Large
My Commission Expires July 1, 1979

(NOTARY SEAL)

EXHIBIT "A"

DESCRIPTION OF THE PREMISES LEASED

All that certain tract or parcel of land situate, lying and being on the southern portion of that island known as Greater Sapelo Island, McIntosh County, Georgia, containing 1,575 acres, more or less, of upland and marshland, together with all high tidal marshes, low tidal marshes, lowlands, coastal beaches, beachland, hammocks, bluffs, fields, patches, bottoms, bogs and waters appurtenant, adjoining and adjacent to each; said parcel being shown and delineated on that certain map of the southern portions of Greater Sapelo Island, prepared for the Department of Natural Resources, by S. Higgins, dated August, 1976, as revised on September 15, 1976 and on September 28, 1976 and entitled "EXISTING FACILITIES", which map is labeled EXHIBIT "B", attached hereto and by reference incorporated in and made a part hereof; said parcel being more particularly described as follows: BEGINNING at the point of intersection of the centerline of Marsh Landing Road and the extreme east end of the Marsh Landing Dock, said POINT OF BEGINNING being designated by the letter "A" on EXHIBIT "B" hereof; thence in a southeasterly direction along and with the centerline of said Marsh Landing Road (being a paved road except at Central Canal) approximately 4,100 feet to the intersection of said Marsh Landing Road with a shell road; said point of intersection being designated by the letter "B" on EXHIBIT "B" hereof; thence along the centerline of said paved road in a generally southerly direction approximately 2,300 feet to the intersection of said paved road with the centerline of a dirt road locally known and referred to as "the Autobahn"; said point of intersection being designated by the letter "C" on EXHIBIT "B" hereof; thence continuing along the centerline of said paved road in a southeasterly direction approximately 3,400 feet to the intersection of the centerline of said paved road with the centerline

of Root Patch Road; said point of intersection being designated by the letter "D" on EXHIBIT "B" hereof and being a point approximately 600 feet north of the Azalea Cottage (designated by the number "53" on said EXHIBIT "B"); thence due east approximately 2,000 feet to a point near the marsh, said point being designated by the letter "E" on said EXHIBIT "B"; thence due south approximately 3,000 feet to a point on the Beach Road; said point being designated by the letter "F" on said EXHIBIT "B"; thence in a southeasterly direction with the centerline of said Beach Road approximately 2,500 feet to the mean low water marsh of the Atlantic Ocean; said point being designated approximately by the letter "G" on said EXHIBIT "B"; thence continuing southerly, westerly, northwesterly, and northerly with the mean low water line of the Atlantic Ocean, Doboy Sound and the Duplin River, respectively, approximately 4.5 miles to the POINT OF BEGINNING, TOGETHER WITH: All those certain buildings, structures, fences, roads, equipment, fixtures, wells, pipelines, docks and other facilities located in, on or above the hereinabove described parcel of real property and waters adjacent, and adjoining thereto, (said facilities being designated by the numbers "21" through "66", inclusive, and by numbers "71", "73", "79" and "80" on EXHIBIT "B" hereof) and, in addition thereto, the South End Bulkhead, the South End Boat Basin, and various utility systems (said facilities not being designated by number on said EXHIBIT "B") and further in addition thereto, any other miscellaneous facilities located in, or upon the hereinabove described parcel of real property AND TOGETHER WITH all items of personal property located in, on, or around said hereinabove described buildings, facilities, other structures and improvements, including, but not limited to household furnishings, tools and equipment, said personal property being more particularly described in that inventory labeled EXHIBIT "C", attached to and made a part of this EXHIBIT "B" and this Lease Agreement, EXCEPTING, however, from the premises

above described, the disputed outstanding claim of an undivided one half interest in that area of the above-described premises commonly known and referred to as the "Lighthouse Tract" by Marianne O'Brien Reynolds Meyers AND FURTHER EXCEPTING from the premises above-described, those exceptions set forth as "Permitted Title Exceptions" in that certain December 8, 1975 Option to Purchase Properties, as amended, granted to the State of Georgia by the Sapelo Island Research Foundations, as well as any other exceptions to the title to the South End Properties which may be waived by the State of Georgia prior to its purchase of the said South End Properties.

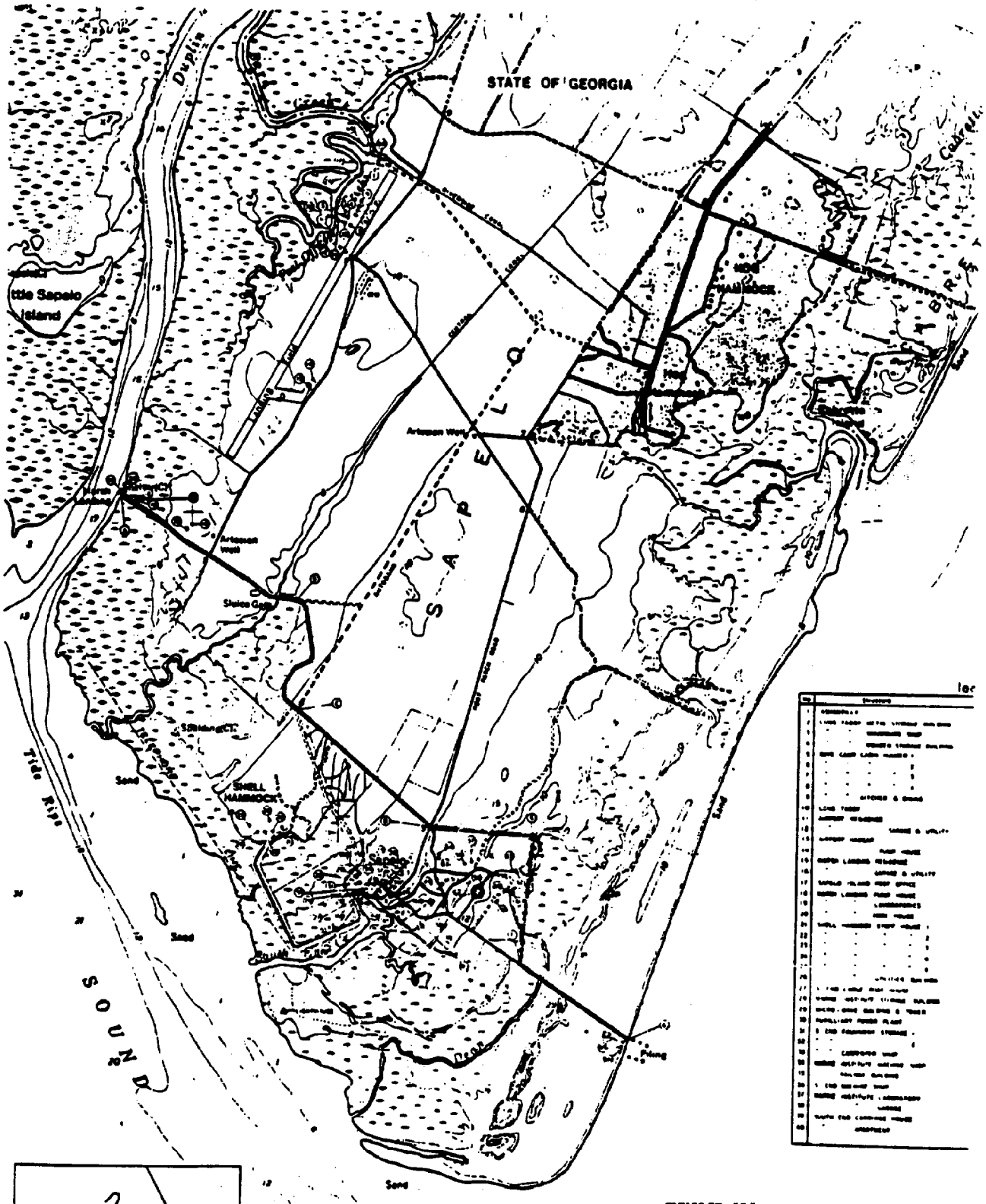


EXHIBIT "D"

Page 1 of 1 Page

Page 22 of 61 Pages

VICINITY MAP

MAP REVISIONS	
DATE	NAME
9 15 76	S HIGGINS
9 28 76	S HIGGINS

EXISTING F

Appendix B:

Operating Agreement between DNR and Board of Regents

COUNTY OF FULTON:

OPERATING AGREEMENT

THIS AGREEMENT, made and entered into this 21st day of December, 1976, by and between the DEPARTMENT OF NATURAL RESOURCES, an agency of the State of Georgia, acting for and on behalf of the State of Georgia, (hereinafter referred to as "Department") and whose business address is 270 Washington Street, S.W., Atlanta, Georgia 30334 and the BOARD OF REGENTS OF THE UNIVERSITY SYSTEM OF GEORGIA, an agency of the State of Georgia, whose business address is 244 Washington Street, S.W. Atlanta, Georgia 30334 (hereinafter referred to as "Regents").

W I T N E S S E T H:

WHEREAS, by virtue of that certain December 8, 1976 Option To Purchase Properties, as amended, granted by the Sapelo Island Research Foundation, Inc. (hereinafter referred to as "the Foundation"), the State of Georgia, acting by and through the Department, has an option to purchase all of the real property, together with all buildings, structures and other improvements located thereon and together with all personal property located thereon, (which is owned by the Foundation); said real property constituting a portion of what is known as Sapelo Island and Meridian Dock Landing (except for that area known as Hog Hammock); all of said properties being more particularly described in said Option, and (except for said personal property) being herein after collectively referred to as "the South End Properties"; and

WHEREAS, since July 1, 1953, Regents, acting by and through the University of Georgia, a unit of the University System of Georgia, and pursuant to agreements between Regents and the Foundation, has conducted an institute for the purposes of scientific research and educational activities; said institute being located on Sapelo Island; and

WHEREAS, the real property, facilities and certain of the personalty currently utilized by the Regents in the conduct of said institute are subject to the terms of said Option; and

WHEREAS, subsequent to the exercise of said Option, if any, and a purchase by the State of Georgia pursuant thereto, if any, all said real property and facilities, as well as personal property located thereon and therein, shall be owned by the State of Georgia and shall be within the custody, control and managemen of the Department; and

WHEREAS, the State of Georgia, the Foundation, the Departmen and Regents mutually desire that Regents continue to utilize said properties (both real and personal) and facilities in the conduct of said institute for scientific research and educational activities; and

WHEREAS, for the purpose of enabling the Regents to continue said scientific research and educational activities, the Department, acting for and on behalf of the State of Georgia, as lessor, and Regents, as lessee, have as of the date hereof entered into a lease agreement for a term of 50 years, leasing to the Regents certain premises, including real property, improvements and other facilities and personalty therein described; said lease agreement to be effective on the second calendar day following (and not including) the day upon which the State of Georgia, acting by and through the Department, accepts delivery of warranty deeds from the Foundation conveying all of its interests in Sapelo Island, except Hog Hammock Subdivision, and Meridian Dock Landing, (and being hereinafter referred to as the "Lease Agreement"); and

WHEREAS, both the Department, in the performance of its management and custodial responsibilities with respect to Sapelo Island, and Regents, in its use and occupancy of the premises

leased to it, will benefit from certain mutual understandings and agreements regarding services which may be supplied by each t the other and further by agreements respecting the use by Regents of real property and facilities within the custody and control of the Department and not leased to Regents; and

WHEREAS, the parties do further mutually desire to supplement the terms of the Lease Agreement with certain express understandings and agreements and to establish a framework for their common occupancy of Sapelo Island, Georgia:

NOW, THEREFORE, pursuant to the authority vested in the parties by Article VII, Section VI, Paragraph I of the Constitution of the State of Georgia (Ga. Code Ann. §2-5901), for and in consideration of the sum of One Dollar ($1.00) by each party to the other in hand paid, at and before the signing, sealing and delivery of these presents, and in further consideration of the mutual covenants, agreements and provisions herein contained and the benefits by each to be derived therefrom and for other good and valuable consideration, the parties do hereby agree as follows:

I. TRANSPORTATION.

A. Department covenants and agrees that it will, at all times during the term of this agreement, provide regularly scheduled twice daily (except Sundays and holidays) boat transportation between Sapelo Island and the mainland of McIntosh County for commuting Regents personnel, personnel of Regents who are resident on Sapelo Island (and their families) and for visitors authorized by Regents to visit Regents' leased premises on Sapelo Island. Such transportation shall be between the Marsh Landing Dock on Greater Sapelo Island and Meridian Dock Landing on the mainland of McIntosh County, said docks being designated by the numbers "68" and "78" respectively on that certain August 1976 map of the southern portion of Greater Sapelo Island prepared

for the Department of Natural Resources by S. Higgins, as revised on September 15, 1976 and September 28, 1976 and entitled "EXISTING FACILITIES", said map being labeled EXHIBIT "A", attached hereto and by reference incorporated in and made a part hereof, (for a fee, if any be charged, to be agreed upon by the parties' respective resident representative). Department further agrees that it will provide such passenger boat transportation to and from Sapelo Island and the mainland on Saturdays as may be necessary in connection with public education programs of either the Department or the Regents or both, subject to the availability of a boat and crew.

Department hereby further agrees that it will provide personnel necessary to restrict such passenger boat transportation as hereinabove provided and to oversee and control visitors to Sapelo Island.

B. Regents covenants and agrees that it will provide barging service for fuel, supplies and equipment for both parties hereto; said barging service to be supplied with such frequency as shall reasonably fulfill the needs of the parties, (for a fee, if any be charged therefor , to be agreed upon by the parties' respective resident representatives).

C. Regents further agrees that it will permit Department personnel and visitors authorized by the Department to travel, on a space-available basis, (for a fee, if any be charged therefor, to be agreed upon by the parties' respective resident representatives), on scheduled trips of the Regents' research boats to and from the mainland and Sapelo Island.

D. Department agrees that Regents personnel and other persc authorized by Regents may utilize the airstrip located on the southern portion of Sapelo Island (designated as the "Landing Field" on EXHIBIT "A"); provided however, that Regents and any such persons authorized by Regents shall first obtain permission and clearance for such use from the Department's agent or employee in charge of the airstrip at such times. Department hereby further agrees that it will maintain the Landing Field lighting system as it exists as of the effective date hereof; provided however, said obligation to maintain shall not obligate the Department to install a new or replacement lighting system.

II. MAIL SERVICE. Department covenants and agrees that it will, during the term hereof, but only for so long as the Department shall maintain a contractual agreement with the United States Postal Service so to do, provide mail service between the mainland of McIntosh County and the Sapelo Island Post Office (said Post Office being designated by the number "17" on EXHIBIT "A"). Regents agrees that it will, upon request by the Department, and subject to the availability of the same (for a fee, if any be charged therefor, to be agreed upon by the parties' respective resident representatives), provide a boat, without crew, to be utilized in emergencies occuring in connection with Department's provision of mail service.

III. DOCKAGE & STORAGE

A. Department hereby expressly agrees and gives its permission to Regents, for the duration of this agreement, to dock its boats at the Meridian Dock and the Marsh Landing Dock; provided however, Regents expressly recognizes and acknowledges that said docks shall also be utilized throughout the term hereof by the Department and provided further

that the parties agree that Regents' space utilization at said docks shall not be less than Regents' level of utilization as of the effective date hereof. Notwithstanding Regents' utilization of such dockage space pursuant hereto, it is hereby expressly agreed by the parties that said docks shall be maintained in good order and repair at the sole cost and expense of the Department during the term hereof.

B. Department hereby agrees and gives its permission to Regents to utilize and to occupy and possess, exclusively, during the term hereof that dock known as Boys Camp Dock (also known as the Long Tabby Dock and designated by number "70" on EXHIBIT "A"). It is expressly agreed by the parties that maintenance of said Boys Camp Dock in good order and repair shall be the responsibility of and shall be at the sole cost and expense of Regents for the duration of Regents' possession and occupancy.

C. Department hereby agrees and gives its permission to Regents to possess and to use and occupy, exclusively, during the term hereof, the large garage at Meridian Dock (designated by number "76" on EXHIBIT "A"). It is expressly agreed by the parties that the maintenance of said Meridian Dock large garage in good order and repair shall be the sole responsibility and shall be at the sole cost and expense of Regents for the duration Regents' possession and occupancy thereof.

D. Department hereby agrees and gives its permission to Regents to possess and to use and occupy, exclusively, during the term hereof, that dock known as Ashantilly Dock (designated by the number "74" on EXHIBIT "A"). It is expressly agreed by the parties that maintenance of said

Ashantilly Dock in good order and repair shall be the responsibility of and shall be at the sole cost and expense of Regents for the duration of Regents' possession and occupancy thereof.

E. Department hereby further agrees that it will permit Regents to use and occupy storage areas within buildings and other facilities in the custody of the Department and located outside of the premises leased to Regents under the Lease Agreement specifically including but not limited to the Airport Hangar (designated by the number "13" on EXHIBIT "A"). ~~Such use and occupancy by Regents shall be subject to the availability of such space for Regents' utilization.~~ The parties hereby agree that arrangements for such storage space, including but not necessarily limited to, the location(s), the period(s) of occupancy, the materials and/or equipment to be stored, the exclusivity or non-exclusivity of such occupancy and security measures, if any, shall be such as shall be mutually agreeable to the parties' respective resident representatives.

F. Department hereby further agrees that it will permit Regents to utilize the parking areas adjacent to the Meridian Dock and the Marsh Landing Dock; the details of such usage to be such as shall be mutually agreeable to the Parties' respective resident representatives.

IV. RESIDENCE FACILITIES. Department and Regents hereby acknowledge and agree that, as of the date hereof, there are, or may be Regents personnel possessing, using and occupying the following residences and related facilities, to-wit:

(1) that residence and dock known as Ashantilly and Ashantilly Dock, respectively, (and designated by numbers "1" and "74", respectively, on EXHIBIT "A" hereof), together with all related facilities;

(2) that residence and outbuilding known as the Airport Residence and the Airport Residence Garage and Utility Building, respectively, (and designated by numbers "11" and "12", respectively, on said EXHIBIT "A"); and

Department hereby covenants and agrees with Regents that it will permit such personnel of Regents who are, as of the effective date hereof, possessing, using and occupying said herein above specified residences and related facilities to continue to possess, and use and occupy said residences and related facilities. At such time as said Regents personnel shall vacate said residence(s) and related facilities the absolute possession, custody and control of said residence(s) and related facilities shall be in the Department. Provided, however, that it is expressly understood and agreed that such vacation of the residences and related facilities may not occur simultaneously for all of said Regents personnel and provided further that it is mutually understood and agreed between the parties that the Department may, at any time following the vacation of any of said residences and related facilities by the Regents personnel occupying said residence(s) and related facilities as of the effective date hereof, pursuant to this agreement, permit such residence(s and related facilities to be possessed, used and occupied by oth personnel of Regents upon such terms and conditions as shall be mutually agreeable to the parties' respective resident managers. The parties do hereby further agree that during the period of an occupancy of said residences and facilities by Regents personnel they shall be maintained in good order and repair at the sole cost and expense of Regents.

V. SANITATION SERVICES. Department covenants and agrees that it will at all times during the term hereof provide and maintain a site for a sanitary land fill to be utilized by the

Department and by Regents (in connection with both the premises leased to Regents under the Lease Agreement and the real property and facilities used and occupied by Regents pursuant hereto). The terms of such mutual usage by the parties of said sanitary land fill, as well as the collection of trash and garbage and any other related sanitation services shall be such as shall be mutually agreeable to the parties' respective resident representatives.

VI. EQUIPMENT SHARING. It is understood and agreed by and between the parties hereto that each may permit the other to use, on a temporary basis, equipment and/or vehicles such as road graders, bulldozers, et cetera, in order to facilitate either party in its respective operations on Sapelo Island. The lending of any such equipment shall be on such terms and conditions as shall be mutually agreeable to the parties' respective resident managers.

VII. RESEARCH ACTIVITIES OF REGENTS.

A. It is hereby acknowledged and agreed by the Department and Regents that personnel of Regents are, as of the date of this agreement, and may be, as of the effective date hereof, conducting scientific research and educational activities at sites on Sapelo Island located outside of the boundaries of the premises described in the Lease Agreement, which sites are as of the date hereof, or will be, as of the effective date hereof, under the custody, control and management of the Department. It is further acknowledged, understood and agreed by and between the Department and Regents that, during the term of the Lease Agreement, Regents may, in its reasonable judgment, determine that,

for certain scientific research projects or educational activities there are no suitable sites located on the leased premises or that there may be sites more suitable than those located on the leased premises. Department therefore hereby covenants and agrees that it will permit Regents personnel to continue to use and occupy the sites within Department's custody, control and management upon which scientific research activities or educational activities are being conducted by Regents personnel as of the effective date hereof, until such activities are concluded. Department further hereby consents and agrees that Regents personnel shall have, at all times during the term hereof, the right of ingress and egress to and from the leased premises over the lands within the Department's custody, control and management for purposes of locating suitable sites for the conduct of particular scientific research and educational activities and upon its prior written consent, Regents may utilize such sites for such periods as may be necessary to complete the scientific research there undertaken. It is the understanding of the parties and the intent of the Department that such consent shall not be unreasonably withheld, provided that Regents shall fully and accurately describe the nature and extent of the scientific research and/or educational activities to be undertaken, any special needs of Regents in connection therewith, e.g. security, equipment, access, et cetera, and shall identify the location of the site selected in a written request to the Department for said site, and provided further that such activity shall not be inconsistent with the obligations which the Department has or may have under federal grant conditions, or with the Department's general game and fish management obligations by law imposed upon

the Department with respect to the lands upon which such sites shall be located. Requests by Regents for such site or sites shall be sent by United States Certified or Registered Mail and addressed to the Commissioner of the Department of Natural Resources, Room 815, Trinity-Washington Building, 270 Washington Street, S.W., Atlanta, Georgia 30334 (or to such other address as the Commissioner of the Department of Natural Resources may hereafter designate in writing to the Regents' resident representatives), with a copy of each such request addressed to the Department' resident representative at his address as hereinafter set forth. Requests for such site or sites shall be sent no later than 30 days in advance of Regents' need therefor and Department hereby agrees to act upon any such request within said 30 day period.

B. Department hereby covenants and agrees that it will take such action and measures as shall be reasonably necessary to provide and maintain security for the sites upon which Regents is conducting such scientific research projects and/or educational activities.

C. In order to enable Department to fulfill its obligations pursuant to subparagraph B. above, to provide and maintain security for Regents' scientific research and educational activities' sites, Regents hereby covenants and agrees that it will, within 30 days of the effective date hereof, and on or about the anniversary thereof each year during the term of this agreement, submit to the Department a list of Regents' scientific research and educational activities being conducted at sites outside the leased premises; said

list to briefly describe said projects and activities and to identify (by location) the sites thereof. This paragraph is not intended, nor shall the same be in any way construed, to limit or otherwise to modify the provisions of subparagraph A of this paragraph VII.

D. The parties hereto agree that they will, during the term hereof, furnish to each other copies of studies or reports prepared by the parties concerning scientific and/or educational objectives or accomplishments within their respective areas of interest on Sapelo Island; provided however that the agreement herein contained shall be subject to requirements imposed on either party by patent or copyright agreements, including but not limited to agreements with the federal government concerning patents or copyrights on inventions and materials resulting from federally funded research.

VIII. INSURANCE. It is hereby understood and agreed between the parties that, notwithstanding the use and occupancy by Regents of buildings and facilities under the custody and control of the Department, fire and extended casualty insurance coverage for said buildings and facilities shall be maintained by the Department at the cost and expense of the Department. Provided however, Regents covenants and agrees that no use shall be made of the buildings and facilities nor act done upon the premises which would cause a cancellation of such insurance and Regents further agrees not to keep or permit to be kept in, on, or about said buildings and facilities, any article or articles which may be prohibited by standard form fire insurance policies. In the event of the damage or destruction, by fire or other casualty, of any of the facilities used and occupied by Regents pursuant hereto, whether such use be exclusive or non-exclusive the Department shall have no obligation to Regents under this agreement to rebuild, restore or replace any such facility; provided

however, that if the Department shall elect to rebuild, restore or replace a facility theretofore jointly used and occupied by Regents and the Department, Department agrees that it will permit Regents to use and occupy such rebuilt, restored or replacement facility to the same extent (relative to Department's previous use) as Regents used and occupied the damaged or destroyed facility immediately prior to such damage or destruction.

IX. NO ESTATE OR INTEREST CONVEYED. Notwithstanding the use, possession and occupancy by the Regents of certain buildings and other facilities pursuant hereto, it is expressly recognized and acknowledged by the parties that no estate or other interest whatsoever in said buildings and other facilities or the real property upon which the same are located shall pass to the Regents hereunder nor is this agreement in any way intended nor should it be construed to be or constitute a conveyance of any estate or interest whatsoever in said buildings, facilities and/or real property;

X. LEASE AGREEMENT SUPERCEDES. It is hereby acknowledged and agreed between the parties that this agreement is entered into for the purposes of establishing an operating framework for the mutual occupancy by the parties of the South End Properties, together with the northern portion of Sapelo Island, Georgia and thereby to supplement the terms of the Lease Agreement. However, it is further recognized and agreed between the parties hereto that this agreement is in all respects subject to the Lease Agreement and that to the extent of any conflict between the provisions of this agreement and terms of the Lease Agreement, the terms of the Lease Agreement shall prevail.

XI. ARBITRATION. Whenever during the term hereof, a disagreement or dispute shall arise between the parties arising out

of or in connection with this agreement concerning the existance, construction, validity, interpretation or meaning, performance, non-performance, enforcement, operation, breach, continuance or termination hereof, which disagreement or dispute the parties' respective resident representatives, after good faith negotiations have been unable to resolve, the parties' respective resident representatives shall submit said disagreement or dispute in writing to the President of the University of Georgia and to the Commissioner of the Department of Natural Resources. In the event that said named individuals are unable, after good faith negotiations for a period of 30 days, to resolve such disagreement or dispute, either of said individuals may, by notice in writing to the other submit such disagreement or dispute to the Governor of the State of Georgia, who shall act as arbiter and whose findings and conclusion the parties hereto agree shall be final and binding upon the parties.

XII. RESIDENT REPRESENTATIVES. Department and Regents each hereby authorize and appoint the following named individuals as their respective resident representatives to carry out the responsibilities herein specifically delegated to them:

REGENTS:	Resident Manager Marine Institute Sapelo Island, Georgia 31327
DEPARTMENT:	Regional Supervisor Game and Fish Division Department of Natural Resources Sapelo Island, Georgia 31327

Either party may, by notice in writing to the hereinabove named resident representative of the other party, designate a new resident representative and/or a different address for said resident representative. It is the intent of the parties hereunder that said resident representatives shall cooperate with ea

other and work together in attempting to coordinate the mutual occupancy by the parties of Sapelo Island, Georgia and their respective activities thereon.

XIII. TERM. This agreement shall be for a term of fifty (50) years commencing on the effective date hereof and of the Lease Agreement and running concurrently with the term of the Lease Agreement; termination of the Lease Agreement at any time during the term thereof shall automatically and without any further action on the part of the parties hereto cause and effect a termination of this agreement;

XIV. EFFECTIVE DATE. The effective date of the agreement, if any there by, shall be the second calendar day following (and not including) the day upon which the State of Georgia acting by and through the Department, accepts delivery of a warranty deed or warranty deeds, to the South End Properties, said second calendar day (i.e., the effective date hereof) also being the effective date of the Lease Agreement. Notice of the effective date hereof shall be given by the State of Georgia Department of Law to the parties hereto.

XV. TERMINATION. Upon termination of this agreement (pursuant to the provisions of paragraph XIII hereinabove), Regents shall forthwith vacate any of the buildings and/or other facilities located on the South End Properties or any other area of Greater Sapelo Island, outside the boundaries of the leased permises, removing all of Regents' personnel and personal property therefrom. Department shall have no obligation to Regents or its personnel for any such personal property not removed within 90 days of the date of such termination.

XVI ASSIGNMENT. Except by operation of law, neither the Department nor Regents shall have the right to transfer or to assign this agreement or any interest herein, or right or privilege appurtenant hereto, unless the prior written consent

of the non-assigning party shall first have been had and obtained; any assignment or transfer without such consent shall be void.

XVII. ANNUAL MEETING. At least once annually, on or about the anniversary of the effective date hereof, the parties' respective resident representatives shall meet to discuss the working relationships of the parties, housing, maintenance scheduled and other topics of joint interest. Recommendations, if any, to the governing authorities of the parties concerning modifications or amendments of this agreement, shall be made at said annual meeting.

XVIII. ENTIRE AGREEMENT. Except to the extent that the subject matter of this agreement may also be the subject of the Lease Agreement, this agreement constitutes the full, complete and entire agreement between the Department and Regents; no agent, employer, officer or representative of the Department or of Regents has authority to make or has made, any statement, agreement, representation or contemporaneous agreement, oral or written, in connection herewith modifying, adding to, or changing the covenants, agreement, provisions, duties, obligations, terms and conditions of this agreement. This agreement may be modified or amended by the parties hereto, but only by a writing signed by both the Department and the Regents, attached to this agreement, incorporated in and by reference made a part hereof.

IN WITNESS WHEREOF, THE DEPARTMENT OF NATURAL RESOURCES, and the BOARD OF REGENTS OF THE UNIVERSITY SYSTEM OF GEORGIA, each by their proper officers duly authorized thereunto so to do, have caused these presents to be signed, sealed and delivered, all on the day, month and year first above written.

DEPARTMENT OF NATURAL RESOURCES

Signed, sealed and delivered in the presence of (as to the signature of Joe D. Tanner, Commissioner):

WITNESS

NOTARY PUBLIC

My Commission Expires:

OCT. 17 1990

(NOTARY SEAL)

BY: Joe D. Tanner
JOE D. TANNER, Commissioner in charge of the Department of Natural Resources

BOARD OF REGENTS OF THE UNIVERSIT SYSTEM OF GEORGIA

Signed, sealed and delivered in the presence of (as to the signatures of both John W. Hooper and Joe B. Lawley):

WITNESS

NOTARY PUBLIC

My Commission Expires:

Notary Public, Georgia, State at Large
My Commission Expires

(NOTARY SEAL)

BY: John W. Hooper
JOHN W. HOOPER, Vice-Chancello Board of Regents of the University System of Georgia

ATTEST: Joe B. Lawley
JOE B. LAWLEY, Assistant Executive Secretary, Board of Regents of the University System of Georgia

(SEAL)

[The map labeled Exhibit "A", attached hereto and by reference incorporated in and made a part hereof, does not bear a Page Number.]

Appendix C:

Grant Award Agreement for SINERR

Land Acquisition

SPECIAL AWARD CONDITIONS FOR THE SAPELO ISLAND NATIONAL ESTUARINE SANCTUARY (Grant Award #04-5-158-12001)

1. Programmatic Conditions

a. Description of the Sanctuary

The Sapelo Island National Estuarine Sanctuary (the Sanctuary) shall consist of so much of Sapelo Island, McIntosh County, Georgia, as is indicated by the diagonally hatched area, on the attached map, designated Appendix A and made a part of the grant award.

As a separate project, the Sapelo Island Natural Area, hereafter called the "Natural Area", to be concurrently established with assistance from the Land and Water Conservation Fund, is also shown on Appendix A.

b. Sanctuary Management Procedures

(1) Sanctuary Management Official - The Department of Natural Resources will be responsible for management of the sanctuary, in accordance with the Management Objectives and Statement of Uses hereinafter set forth. That agency will in turn designate a Resident Manager. Management procedures will be worked out through an Inter-agency Agreement between the Office of Planning and Budget (OPB), Department of Natural Resources (DNR) and Board of Regents of the University System of Georgia (the Regents).

(2) Appeal Procedure - Any individual or organization which is concerned about possible improper use or restriction of use of the Sanctuary may petition DNR first, then OPB second, then the Office of Ocean and Coastal Resource Management (U. S. Department of Commerce) thirdly, for review of any alleged improper use or restriction.

(3) Sanctuary Policies and Administration - The Resident Manager shall be responsible for day-to-day administration of the policies, plans and procedures imposed by the Commissioner of DNR. The Commissioner will establish these plans consistent with policies established by the Board of Natural Resources and other responsibilities imposed upon DNR by law.

(a) The Department of Natural Resources is responsible to assure that its management decisions reflect adequate consideration of scientific data.

(b) Written plans and policies of the Department and rules and regulations of the Board of Natural Resources shall be reviewed by the National Oceanic and Atmospheric Administration in its annual review in order to assure that Sanctuary policies and administration are consistent with the management objectives of the Sanctuary.

c. Management Objectives of the Sanctuary

(1) The primary management objective shall be to maintain the integrity of the Sanctuary for research and educational purposes. and to protect it from both internal and external sources of stress which may alter or affect the nature of the ecosystems. The management policy shall be designed to reduce, minimize or avoid artificial or manipulative management control or techniques, to promote and protect natural processes and systems, and to promote and encourage attainment of scientific objectives.

(2) It is recognized by the parties to this Agreement that the Natural Area shall be managed for overall DNR objectives, where the objective is to preserve the scenic or natural values, including the areas of physical or biological importance and wildlife areas, in such a manner that it complements and is compatible with the purposes of the Sanctuary and under such rules and regulations as the Board of Natural Resources may promulgate. These areas must be open to the general public for outdoor recreation use to the extent that the natural attributes of the areas will not be seriously impaired or lost.

d. Scientific Objectives

The primary scientific objectives of the Sanctuary are:

(1) To enable a better understanding of estuarine ecosystems. Studies may include productivity measurements, distribution and life history studies of estuarine organisms, energy flow dynamics, modeling, etc., as well as physical, chemical and hydrographic studies;

(2) To make baseline studies by defining the natural conditions in this sanctuary, and by monitoring the sanctuary to detect subsequent changes;

(3) To develop policy and management criteria, and to use the Duplin River estuarine ecosystem as a control with which changes in other estuaries can be compared as they may undergo development as coastal zone management programs are implemented; and

(4) To allow any qualified scientist to conduct research, provided that such research is compatible with (i) other research being conducted in the Sanctuary, and (ii) the management and other scientific objectives of the Sanctuary as set out above.

e. Statement of Uses

(1) The following uses shall be allowed in the Sanctuary:

(a) Scientific and archaeological research;
(b) Education and nature interpretation; and
(c) Low intensity recreation, including hunting, fishing, wildlife observation and esthetic enjoyment.

(2) The following uses shall be allowed on a restricted basis in the Sanctuary:

(a) Residential use at the level extant as of the date of the grant award, except that there shall be allowed such increase in residential use as is necessary in connection with the management of the Island.

(b) Motorized land, water or air vehicles under the regulation of the Resident Manager.

(c) The use of pesticides, herbicides, biocides and fertilizers

(i) only in the immediate vicinity of residences for household purposes; or

(ii) in an approved research project or program in the laboratory or controlled field application where the effects can be circumscribed and/or confidently reversed, provided that such activities shall be restricted to an area of less than one-tenth (1/10th) of one percent of the total core area; or

(iii) in instances where an imminent threat to the flora and/or fauna of the Island exists.

(d) Commercial timber harvesting at commercial maturity in the area of the existing pine plantation, which area subsequently will be managed with the objective of encouraging succession to a typical oak forest climax.

(3) The following uses shall be prohibited in the Sanctuary:

(a) Motorized land, water or air vehicles, commercial timber harvest and prescribed burning, except as any or all of these are allowed by the Manager pursuant to Sections 1(e)(2)(b) and 1(e)(2)(d) above;

(b) Mineral removal;

(c) Control of predators through use of poisons except as permitted under 1(e)(2)(c) above;

(d) Dredging, except as, in the opinion of DNR, is necessary at Marsh Landing, in Barn Creek, or in South End Creek, in order to provide usual and historic access to Sapelo Island, which opinion shall be based upon careful consideration of scientific data pertaining to the possible impact of any such dredging on the Management Objectives of the Sanctuary, and a copy of which opinion shall be sent to the Office of Ocean and Coastal Resource Management;

(e) The deposit of fill in any marsh or estuary;

(f) Chemical or pollutant discharge except as permissible under Georgia water quality laws; and

(g) Other alterations of the natural environment which are inconsistent with the purposes for which the Sanctuary was established.

(4) A use of any part of the Sanctuary which is not specifically permitted and which is inconsistent with the purposes for which the Sanctuary was established is prohibited.

(5) With regard to the land adjoining and contiguous to the landward boundary of the Sanctuary, which land will be purchased by the State from the Sapelo Island Research Foundation (SIRF) at the same time at which the land to be used in the Sanctuary is to be purchased by the State from SIRF, and/or which boundary appears on Sheet Two of the Plats of Survey of certain lands on Sapelo Island, McIntosh County, Georgia, dated April 2, 1976, and signed by G. P. Underwood, Jr., which land shall be termed the "Natural Area", and is so referred to in the Environmental Assessment portion of Land and Water Conservation Project Agreement No. 13-00349 submitted to the State by

the Heritage Conservation and Recreation Service of the U. S. Department of the Interior (HCRS), the State shall manage and maintain such land as prescribed in such Environmental Assessment--incorporated herein by reference--particularly as set out below. This obligation so to manage and maintain such land shall run from the State to the Office of Ocean and Coastal Resource Management until such time as, and to the extent that, HCRS implements such Project Agreement.

The Natural Area, with over one and one-half miles of beach fronting the Atlantic Ocean, will be a key element in the overall plan for the conservation and utilization of the natural resources of the island. The ocean beach, in association with the upland forests, cleared lands, ponds and sloughs, is ideally suited for a variety of recreation pursuits. To protect them against abuse and over-exploitation, DNR proposes to carefully regulate the recreation use of these resources in accordance with the following guidelines.

(a) The following uses shall be encouraged within the Natural Area:

(i) Scientific research (including archaeology).

(ii) Education and nature interpretation.

(iii) Low intensity recreation, including, but not limited to, hunting, fishing, wildlife observation and esthetic enjoyment, to the extent that the natural attributes of the areas will not be seriously impaired or lost, and that the adjoining sanctuary will not be adversely affected by any such use.

(iv) Forest and game management in accordance with sound disciplinary principles, and consistent with the purposes for which the Natural Area was established, to the extent that they will not be detrimental to the environment.

(b) The following uses shall be allowed on a restricted basis within the Natural Area:

(i) The use of a motorized air, land or water vehicle under the regulation of the Manager; and

(ii) The use of the ocean beach for public recreational purposes in a manner consistent with the purposes for which the Natural Area was established.

(c) The following uses shall be prohibited within the Natural Area:

(i) Motorized land, water or air vehicles, except as allowed under regulation of the Department of Natural Resources.

(ii) Mineral removal inconsistent with purposes for which the Natural Area was established.

(iii) Control of predators through use of poison, except in instances where flora and/or fauna of the Island are endangered.

(iv) Chemical or pollutant discharge except as permissible under Georgia water quality laws.

(v) Other alterations of the natural environment which are inconsistent with the purpose for which the Natural Area was established.

f. Reports

(1) The State shall report annually on June 30 to the Office of Ocean and Coastal Resource Management on the management of the Sanctuary. The report shall describe the uses which have been allowed and allowed on a restricted basis during the report year, shall assess the degree to which the major objectives of the Sanctuary have been fulfilled, shall state any problems which have been encountered in the management of the Sanctuary--and any steps taken in their regards--and shall make such recommendations and such commentary as the State deems appropriate.

(2) Representatives of the Office of Ocean and Coastal Resource Management may make such visits to the Sanctuary for purposes of assessing the effectiveness of its management and making such recommendations with regard thereto as that Office deems appropriate.

(3) The State shall procure copies of any study or report reflecting scientific endeavor in the Sanctuary, and shall provide a copy of such study or report to the Office of Ocean and Coastal Resource Management and make copies available to the public.

g. Hunting Camps

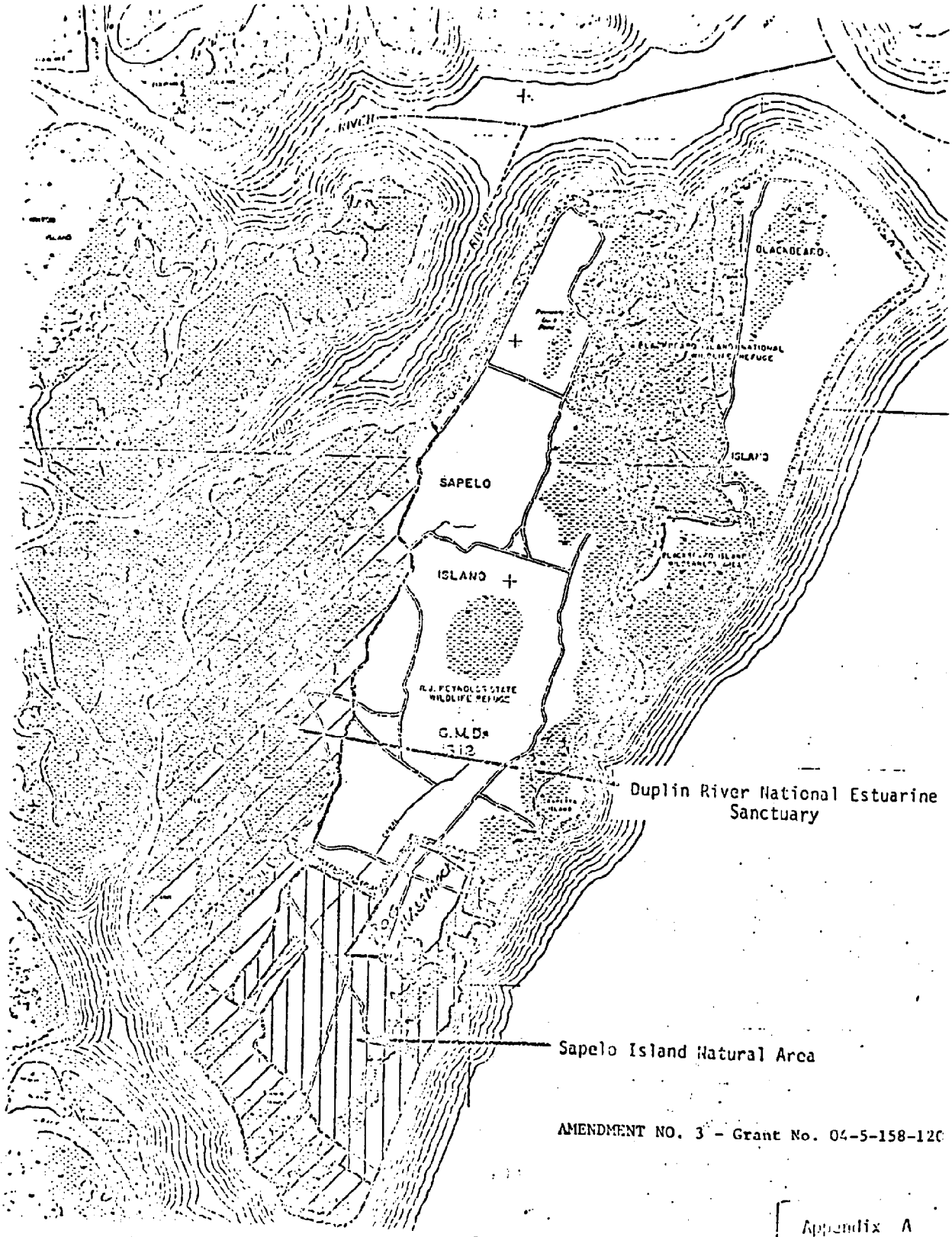
The hunting camp presently located in the Sanctuary will be moved if an acceptable site can be found. This site must be mutually agreeable to both the State of Georgia and the Office of Ocean and Coastal Resource Management. If no acceptable site can be found, use of the present camp will be restricted to managed quota hunts for the minimum number of days necessary to achieve sound game management. Until and if the hunting camp is moved, the present camp will be operated under the above conditions. No additional camps of any kind will be located inside the Sanctuary.

h. Monitoring

Uses of the Sanctuary and related land and water shall be monitored for their possible or actual impact on the existing estuarine ecosystem and resources. The basic monitoring program shall include measurements and samples of water quality, hydrographic and biological parameters taken at appropriate and regular intervals.

i. Amendments

Any request by OPB, DNR, or the Regents for an amendment to the foregoing special award conditions shall be given prompt consideration by the Office of Ocean and Coastal Resource Management, and such request shall not be unreasonably denied.



AMENDMENT NO. 3 - Grant No. 04-5-158-120

Appendix A

Appendix D:

Memorandum of Agreement

STATEMENT OF AGREEMENT
BETWEEN
THE DEPARTMENT OF NATURAL RESOURCES
OF THE STATE OF GEORGIA
AND
THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
CONCERNING THE ADMINISTRATION OF THE
SAPELO ISLAND NATIONAL ESTUARINE RESEARCH RESERVE

WHEREAS, the State of Georgia has determined that certain waters and related coastal habitats of Sapelo Island provide unique opportunities to study natural and human processes occurring within an estuarine ecosystem; and

WHEREAS, it is the finding of the Department of Natural Resources that the resources of Sapelo Island and the values they represent to the citizens of Georgia and the United States benefit from the management of a portion of the Island as a National Estuarine Research Reserve; and

WHEREAS, the National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce, has concurred with that finding and pursuant to its authority under Section 315 of the Coastal Zone Management Act of 1972 designated a portion of Sapelo Island as a National Estuarine Sanctuary in December 1976, which is now known as a National Estuarine Research Reserve; and

WHEREAS, the Department of Natural Resources, Game and Fish Division, as the agency designated in the Sapelo Island National Estuarine Research Reserve Management Plan (hereinafter "the Plan") and by the State of Georgia responsible for managing the Sapelo Island National Estuarine Research Reserve, acknowledges the need and requirement for continuing State-Federal cooperation in the long-term management of the site in a manner consistent with the purposes sought through its designation.

NOW, THEREFORE, in consideration of the mutual covenants contained herein it is agreed by and between the Department of Natural Resources and NOAA, as follows:

ARTICLE I: State-Federal Roles in Reserve Management

A. The Georgia Department of Natural Resources, Game and Fish Division, as the principal contact for the State of Georgia in all matters concerning the Sapelo Island National Estuarine Research Reserve, will serve to ensure that the Reserve is managed in a manner consistent with the goals of the National Estuarine Research Reserve System and the management objectives of the Plan. Its responsibilities for Plan implementation will include the following:

1. Use its best efforts to effect and maintain a process for coordinating and facilitating the roles and responsibilities of all State and local agencies involved in the management of the Reserve, including but not limited to:

   a. Enforcement programs regulating water quality, fish and wildlife habitat protection, sport and commercial fisheries, and non-consumptive recreational activities;

   b. The on-site administration of facilities, programs, and tasks related to Reserve management; and

   c. Research and educational agendas developed and implemented in accordance with corresponding elements of the proposed Plan;

2. As the State entity designated by the Governor in matters concerning all financial assistance awards authorized under Section 315 of the CZMA, apply for, budget, and allocate such funds as are received for acquisition and development, operation and management, and research, monitoring and education;

3. Serve as principal negotiator on issues involving proposed boundary changes and/or amendments to the Plan; and

4. Submit annual reports to NOAA on the Reserve, describing program performance in Plan implementation and a detailed work program for the following year of Reserve operations, including budget projections and research efforts;

B. Within NOAA, the Marine and Estuarine Management Division (MEMD), Office of Ocean and Coastal Resource Management (ORCM), will serve to administer the provisions of Section 315 of the CZMA to ensure that the Sapelo Island National Estuarine Research Reserve is managed in accordance with the goals of the National Estuarine Reserve Research System and the Plan. In carrying out its responsibilities, the MEMD will:

1. Subject to appropriation, provide financial assistance to the State for acquisition, development, management and operation of the Reserve;

2. Subject to appropriation, provide financial assistance for research and monitoring and education programs at the Reserve in accordance with the provisions of Section 315 of the CZMA;

3. Serve as the point-of-contact for NOAA in discussion regarding applications for and any financial assistance received by the State under Section 315 of the CZMA, including any and all performance standards, compliance schedules, or Special Award Conditions deemed appropriate by NOAA to ensure the timely and proper execution of the proposed work program;

4. Participate in periodic evaluations scheduled by OCRM in accordance with Section 312 of the CZMA to measure the State's performance in Plan implementation and its compliance with the terms and conditions prescribed in financial assistance awards granted by NOAA for the purposes of the Reserve; and

5. Establish an information exchange network cataloging all available research data and educational material developed on each site included within the national system of estuarine research reserves.

ARTICLE II: Disposal of Real Property. Real property must be used for the authorized purpose of the original grant as long as needed. When no longer needed for the original grant purpose, the State may seek approval from NOAA, which approval shall not be unreasonably withheld, for the use of real property in other Federal Aid projects or in programs that have purposes consistent with these grants. When real property purchased in part with NOAA funds is no longer needed, and if prior approval by NOAA has been obtained, the State may eliminate the Federal interest by compensating the program for its fair share of the property or sell the property and compensate NOAA as described in Subpart C of Circular A-102. The Federal share is the amount computed by applying the percentage of the Federal participation in the total original cost of the project to the current fair market value of the property. Further guidelines are provided in Attachment N of Circular A-102.

ARTICLE III: Program Evaluation

A. During the period that Federal financial assistance is available for Reserve operations and management, OCRM will schedule, pursuant to 15 CFR 921.34, periodic evaluations of the State's performance in meeting the conditions of such awards and progress in implementing the Plan and the provisions of this Agreement.

B. In accordance with Section 315 of the CZMA, OCRM will evaluate, pursuant to Section 312 of the CZMA and the corresponding provisions of 15 CFR 921, the Department of Natural Resources, Game and Fish Division's performance in implementing the Plan and strategy committing the State to the long-term management of the Sapelo Island National Estuarine Research Reserve.

IN WITNESS THEREOF, the parties hereto have caused this Agreement to be executed.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

BY: Timothy R. E. Keeney
Director
Office of Ocean and Coastal Resource Management

STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES

BY: Joe D. Tanner
Commissioner

Appendix E:

Members of SINERR Advisory Committee and Task Forces

SAPELO ISLAND NATIONAL ESTUARINE RESEARCH RESERVE ADVISORY COMMITTEE--BACKGROUND

The people listed on the following pages serve on the SINERR Advisory Committee appointed by the Department of Natural Resources (DNR). The members represent various professional disciplines and public-interest groups. The Committee will advise DNR regarding the operation, management, maintenance, conservation and interpretation of the National Estuarine Research Reserve. The Committee's balance of interests and expertise ensures appropriate input into the State's operation of the Research Reserve.

To manage the SINERR effectively, DNR and the National Oceanic and Atmospheric Administration must fulfill their appropriate roles. DNR and NOAA officials serve as ex officio members of the Advisory Committee, because DNR manages the island and the Federal government has certain oversight responsibilities for activities occurring within the Reserve. These agencies have the following roles:

- DNR implements and operates programs designed to interpret, manage, conserve and maintain the natural and cultural resources of Sapelo Island in a manner consistent with applicable State and Federal laws, guidelines, grant conditions, and sound principles of resource management.

- NOAA provides financial and technical support to the State of Georgia, to fulfill the purpose and objectives under which the SINERR was designated. NOAA also evaluates programs and activities to ensure that the SINERR continues to be operated and maintained consistently with the SINERR management plan and with the policies and guidelines of NOAA's National Estuarine Reserve Research Program.

SAPELO ISLAND NATIONAL ESTUARINE RESEARCH RESERVE ADVISORY COMMITTEE--MEMBERSHIP

Dr. Vernon J. Henry, Chairman, Department of Geology
Georgia State University

Dr. Forest E. Kellogg, III, Research Associate
Southeastern Cooperative Wildlife Disease Study

Dr. Joe L. Key, Vice President for Research
University of Georgia

Honorable David Earl Lane, Chairman
Board of Commissioners, McIntosh County

Dr. Benjamin F. Lewis, Founder and Member
Hog Hammock Community Foundation

Mr. Jerry McCollum, Executive Director
Georgia Wildlife Federation

Ms. Kathleen Varnell, Secondary Schools Science Consultant
Georgia Department of Education

Mrs. Jane Yarn, Conservationist and Citizen Member

Leon Kirkland, Director of DNR's Game and Fish Division, serves as liaison among DNR, NOAA, USFWS and the Advisory Committee. Mr. Kirkland has full responsibility and authority for addressing the issues and recommendations identified by NOAA and for ensuring DNR compliance with the SINERR Management Plan.

SAPELO ISLAND NATIONAL ESTUARINE RESEARCH RESERVE ADVISORY COMMITTEE--BIOGRAPHICAL INFORMATION

Dr. Vernon J. Henry

Dr. Henry is Chairman of the Department of Geology at Georgia State University. He has served as a member of the Coastal Marshlands Protection Committee and the Shore Assistance Committee. He has been Director of the Marine Institute at Sapelo Island and Coordinator of the University of Georgia's marine geology program at the Skidaway Institute of Oceanography.

Dr. Henry recently chaired the Tybee Island Technical Task Force on a major beach renourishment project and currently heads a DNR Advisory Committee studying the possible use of materials dredged from harbors to renourish three coastal islands in Glynn County. He is widely respected for his knowledge of environmental science and the dynamics of coastal sand-sharing systems along Georgia's coast.

Dr. Forest E. Kellogg, III

Dr. Kellogg is Research Associate for the Southeastern Cooperative Wildlife Disease Study at the University of Georgia and co-staff with the UGA School of Forest Resources. He has served as a member of the faculty since 1969. He holds an undergraduate degree in forestry, a Master of Science degree in wildlife management and a Doctorate in parasitology.

Dr. Kellogg has earned wide recognition for his efforts to acquire and protect lands for wildlife and forest management purposes throughout the Southeast. He is considered to be one of the top professionals in the country on forest-resource management. His expertise is especially useful in decisions regarding forest management on Sapelo Island.

Dr. Joe L. Key

As Vice President for Research at the University of Georgia, Dr. Key administers research activities at the University. The Marine Institute at Sapelo Island is one of his responsibilities. Dr. Key came to the University since 1969. Before that, he served as professor of biology and botany at Purdue University. He has conducted symposia and lectured throughout the U.S. and overseas.

Dr. Key has secured many research grants from organizations such as the National Science Foundation, the National Institutes of Health (NIH), and the U.S. Department of Education (DOE). He has also served as Executive Vice President for Agrigenetics Corporation in Boulder, Colorado.

Dr. Key's research in botany is supported by grants and contracts with DOE, NIH, and Agrigenetics, totalling $2.28 million for the period 1982-87. He has a worldwide scientific reputation in plant cellular and molecular biology in the areas of heat shock and auxin-regulated gene expression in plants.

David Earl Lane

Mr. Lane has served as Chairman of the McIntosh County Board of Commissioners since 1985. He was originally elected to the Commission in 1979. As Chairman and Commissioner-At-Large, Mr. Lane is responsible for McIntosh County governmental operations, including the representation of private citizens who live in the Hog Hammock Community on Sapelo Island.

Dr. Benjamin F. Lewis

Dr. Lewis was born on Sapelo Island. He owns a home and spends much of his time in the Hog Hammock Community. He is the founder and a member of the Hog Hammock Community Foundation, an organization of residents. They created the Foundation in 1975 to stabilize the community and to encourage enough economic development to help support the community.

Dr. Lewis retired from the U.S. Postal Service after 30 years of service. His final post was as Equal Employment Opportunity (EEO) Coordinator for the Atlanta Region. He had also served as acting EEO Specialist for the U.S. Postal Service Headquarters in Washington, D.C. After retirement, he spent 11 years as Director of Development for Savannah State College. At present, Dr. Lewis devotes most of his time to serving the needs of and seeking solutions to problems confronting the residents of the Hog Hammock Community.

Mr. Jerry McCollum

Mr. McCollum is Executive Director of the Georgia Wildlife Federation (GWF). At more than seven thousand members, the GWF is Georgia's largest organization of hunters and fishermen. Mr. McCollum worked for DNR's Game and Fish Division from 1975 to 1987. During this time, he served as senior wildlife biologist at Ossabaw Island--the senior DNR employee responsible for on-site management of that barrier island. He is intimately familiar with coastal barrier island environments and natural processes. He holds bachelor's and master's degrees in biology. His knowledge and expertise on wildlife issues will be extremely valuable to the management of the SINERR.

Ms. Kathleen Varnell

Ms. Varnell has been an educator for 16 years. She has 12 years' classroom teaching experience in high schools in Dougherty County. She also directed a science and math program for a middle school for three years. As Secondary Schools Science Consultant for the Georgia Department of Education, she is provides consultative services to all high schools and school systems in Georgia, regarding science instruction. She holds a bachelor's degree in biology and a master's degree in science education.

Mrs. Jane Yarn

Mrs. Yarn was a member of the U. S. Council on Environmental Quality (CEQ) during the Carter administration. She founded and directed Save America's Vital Environment, one of Georgia's foremost environmental legislative lobbying groups. She was one of the leading lobbyists for passage of Georgia's Coastal Marshlands Protection Act of 1970.

Mrs. Yarn played a central role in acquiring two Georgia coastal islands (Egg and Wolf) for inclusion into the National Wildlife Refuge System. She was also instrumental in negotiating for State acquisition of Ossabaw Island. Mrs. Yarn has been a leading member of the Georgia Conservancy, a Trustee of The Nature Conservancy, and Chair of the Georgia Heritage Trust Commission. She presently serves on the Governor's Growth Strategy Commission. She is one of Georgia's best known and respected conservationists.

MEMBERSHIP OF SINERR TASK FORCES

Research and Monitoring Task Force

CHAIR:
Dr. Jim Alberts, Director
University of Georgia
Marine Institute
Sapelo Island

Marshall Gaddis, Program Manager
Water Quality Management Program
DNR--Environmental Protection
Division
Atlanta

Dr. Elizabeth Gordon
Department of Geology
University of Georgia
Athens

Noel Holcomb, SINERR Manager
DNR--Game and Fish Division
Sapelo Island

Todd Holbrook, Assistant Chief
Game Management Section
DNR--Game and Fish Division
Atlanta

Dr. Lewis Larson
State Archaeologist
Department of Sociology and
Anthropology
West Georgia College
Carrollton

Dr. Stuart Stevens
Shellfish Program Manager
DNR--Coastal Resources Division
Brunswick

Task Force on Education and Interpretation

Ruth Gebel, Curator of Exhibits
Scripps Aquarium
La Jolla, California

Dr. Jay Calkins, Director
Marine Extension Service
Skidaway Institute
of Oceanography
Savannah

Dr. James Claiborne
Department of Biology
Georgia Southern College
Statesboro

Bill Eswine, Chairman
Department of Biology
Savannah Country Day School
Savannah

Noel Holcomb, SINERR Manager
DNR--Game and Fish Division
Sapelo Island

Lisa Reynolds Hammett, Executive
Director
Madison/Morgan County Cultural
Center
Madison

Dewey Hulsey, Principal
Claxton High School
Claxton

Handy Johnson, Landscape
Architect
DNR--Parks and Historic Sites
Atlanta

Ken Riddleberger, Coordinator
Project WILD
DNR--Game and Fish Division
Social Circle

Dr. Susan Walraven
McIntosh County Board of
Education
Darien

Appendix F:

Agreement between DNR and McIntosh County Chamber of Commerce

TICKET SALES AGREEMENT

THIS AGREEMENT, made and entered into this 7th day of September, 1984, by and between the DEPARTMENT OF NATURAL RESOURCES of the State of Georgia, hereinafter "DNR", and McINTOSH COUNTY CHAMBER OF COMMERCE, herinafter the "Chamber",

WITNESSETH:

WHEREAS, DNR desires to promote and provide tours and managed deer hunts on Sapelo Island; and

WHEREAS, DNR operates a ferry service to Sapelo Island; and

WHEREAS, the Chamber has the purpose and desire to promote tourism and visitors to McIntosh County and believes the promotion and provision of tours and managed deer hunts on Sapelo Island will accomplish same.

NOW, THEREFORE, for and in consideration of the mutual benefits flowing to each as hereinafter appear, DNR and the Chamber agree as follows:

1. The term of this agreement shall be from two (2) weeks after the day and year first above written until June 30, 1985. The parties may, by mutual written consent, agree to extend this agreement on a yearly (July 1 to June 30) basis provided such consent is given by both parties prior to June 15th of each expiring term.

2. The Chamber shall:

A. Act as ticket agent for DNR's ferry service to Sapelo Island by providing the physical facilities and staff to accomplish the responsibilities imposed by this paragraph 2.

B. Take calls from the public and schedule boat passengers on DNR's ferry service for participation in DNR's Sapelo Island Sanctuary Tour program and managed deer hunts.

C. Provide and staff an office open for the selling of tickets to the public on all week days from 7:30 a.m. to 5:00 p.m. and on Saturdays from 8:00 a.m. to 12:00 noon.

D. Sell, in consecutive order, pre-numbered tickets at the rate of five dollars ($5.00) per ticket; provided, however, this rate may be changed by fifteen (15) days written notice from the Commissioner of DNR to the Chamber.

E. Retain one dollar and fifty cents ($1.50) for each ticket sold.

F. Account for all ticket sales and transmit all monies received (less the $1.50 per ticket to be retained by the Chamber) to DNR in a monthly report to be delivered to DNR no later than the tenth day following the last day of each month of the term of this Agreement. Said report shall be filed with the Department of Natural Resources, Cash Management, 270 Washington Street, S.W., Room 802, Atlanta, Georgia 30334.

G. Maintain and make available accurate records of all ticket sales for inspection by DNR representatives or the State Auditor during all normal business hours.

H. Assume full responsibility for all tickets issued to it by DNR under this Agreement and make full payment for any tickets that cannot be accounted for to the sole satisfaction of DNR.

I. Handle refunds on behalf of DNR which refunds shall be given only if DNR is unable to provide transportation on the day scheduled.

J. Handle ticketing for any special group tours arranged by DNR.

K. Sell only such a number of tickets as to not exceed the ferry's hauling capacity as determined solely by DNR.

3. DNR shall:

A. Provide to the Chamber a monthly schedule of tours or hunts. Schedules may be provided or changed by telephone or written notice from the DNR Tour Guide or Coastal Region Supervisor.

B. Provide ferry service to and from Sapelo Island.

C. Provide the Chamber with consecutive pre-numbered tickets for the ferry service.

D. Review and submit in writing to the Chamber any objections to the monthly account and report provided by the Chamber pursuant to subparagraph 2F by the ninetieth (90th) day following the filing of the account and report.

E. Provide the Chamber with notice of any special group tours arranged by DNR which are to be ticketed by the Chamber pursuant to subparagraph 2J.

F. Provide the Chamber by telephone or written notice from the DNR Sapelo Island Tour Guide or Coastal Region Supervisor with the hauling capacity of the ferry which may fluctuate in the sole discretion of DNR due to other passenger and freight obligations of DNR.

4. Any ticket sold will be good only for the day of the scheduled trip.

5. The Chamber convenants that it presently has no interest nor shall acquire any interest, direct or indirect, which would conflict in any manner with the performance of it under this Agreement.

6. This Agreement and any proceeds of this Agreement may not be assigned, nor may the performance thereunder be assigned, except with the prior written consent of the Commissioner of DNR.

7. If the Chamber is a nonprofit contractor as defined in O.C.G.A. § 50-20-2, then the Chamber agrees to comply with the provisions of O.C.G.A. §§ 50-20-1 through 50-20-8, and in particular the requirements of O.C.G.A. § 50-20-3, and with such further instructions as the State of Georgia may subsequently require in the implementation of said provisions.

8. The parties of this Agreement certify that the provisions of prohibiting full and part-time appointive

officials and employees of the State from engaging in certain transactions affecting the State contained in O.C.G.A. §§ 45-10-20 through 45-10-28 have not and will not be violated in any respect in regard to this Agreement.

9. The failure of DNR at any time to require performance by the Chamber of any provision hereof shall in no way affect the right of DNR thereafter to enforce that same provision or any part of the Agreement, nor shall the failure of DNR to enforce any breach of any provision hereof be taken or held to be a waiver of such provision, or as a waiver, modification or rescission of the Agreement itself.

10. This Agreement and rights, privileges and responsibilities shall be interpreted and construed according to the laws of the State of Georgia.

11. This Agreement represents the sole and complete understanding of the terms of this Agreement between the parties hereto and may be amended, changed or modified only by a written document signed by the parties hereto.

12. All notices, except as specifically provided otherwise in this Agreement, which shall include statements, demands, requests, consents, approvals, terminations and authorizations, given by either party or its designated representative to the other shall be in writing and sent by United States Certified Mail, postage prepaid, to the party to be notified at such party's address as is set forth below. The sender of such notice shall require the United States Postal Service to "Show to whom, date and address of delivery" of said notice. The day upon which any such notice is so mailed shall be treated as the date of service. Either party may from time to time by notice to the other designate a different address to which notices shall be sent:

DNR: Director, Game and Fish Division
270 Washington Street, S.W., Room 710
Atlanta, Georgia 30334

Chamber: McIntosh County Chamber of Commerce
Post Office Box 734
Darien, Georgia 31305

13. This agreement is executed in two (2) counterparts, each of which is deemed an original of equal dignity with the other and which is deemed one and the same instrument as the other.

14. Either party may terminate this Agreement by sixty (60) days written notice to the other party.

IN WITNESS WHEREOF, the parties have hereunto set their hands and affixed their seals the day and year first above written.

DEPARTMENT OF NATURAL RESOURCES
State of Georgia

By J. Leonard Ledbetter
J. Leonard Ledbetter
Commissioner

(Department Seal Affixed Here)

McINTOSH COUNTY CHAMBER OF COMMERCE

BY A. H. Voltz
(name)
Chairman, McIntosh County Chamber of Commerce

Attest: Mary J. Zeh Secy.
Title

(Chamber Seal Affixed Here)

McINTOSH COUNTY
CHAMBER OF COMMERCE
DARIEN, GEORGIA 31305

State of Georgia

County of Fulton

Amendment No. 1 to Ticket Sales Agreement

THIS AGREEMENT is made and entered into this 30th day of July, 1985, by and between the Department of Natural Resources, State of Georgia, hereinafter "DNR," and the McIntosh County Chamber of Commerce, hereinafter "Chamber."

WITNESSETH:

WHEREAS, by instrument dated September 7, 1984, the parties did enter into an agreement whereby the Chamber and DNR would cooperate in the provision of ticket sales, tours and managed deer hunts relating to Sapelo Island.

NOW, THEREFORE, for and in consideration of the mutual benefits flowing to each party, the adequacy of which is hereby acknowledged as sufficient, the parties do mutually agree to amend their original agreement dated September 7, 1984, as follows:

1.

Paragraph 1, page 1, is amended by striking this paragraph in its entirety and substituting in lieu thereof the following language:

"1. The term of this agreement shall be for a period not to exceed fifty years from the day and year first above written. The parties may terminate any time within this term subject to the provisions of paragraph 14 hereof."

Paragraph 2, subparagraph E and F, are amended by striking the provisions "one dollar and fifty cents ($1.50)" and "$1.50", respectively, and substituting in lieu thereof "one dollar and seventy-five cents ($1.75)" and "$1.75", respectively.

-3-

All of the terms and conditions of the original agreement shall remain in full force and effect.

IN WITNESS WHEREOF, the parties have caused this Amendment No. 1 to be signed the date and year first above written.

DEPARTMENT OF NATURAL RESOURCES
State of Georgia

By J. Leonard Ledbetter
J. Leonard Ledbetter
Commissioner

(Department Seal Affixed Here)

McINTOSH COUNTY CHAMBER OF COMMERCE

By B. T. B. Wade
(name)
Chairman, McIntosh County Chamber of Commerce

Attest: Mary J. Hatcher
Title

(Chamber Seal Affixed Here)

McINTOSH COUNTY
CHAMBER OF COMMERCE
DARIEN, GEORGIA

Appendix G:

Goals and Objectives for Research and Monitoring

GOALS AND OBJECTIVES FOR RESEARCH AND MONITORING

Mission Statement

1. Provide long-term protection to the Sapelo Island National Estuarine Research Reserve, to support and promote basic and applied scientific research.

2. Provide researchers and managers with baseline data on certain physical, chemical and biological parameters obtained through an onsite monitoring program.

3. Communicate the significant results of research to the public and to coastal managers and decision-makers, through a program of information and education.

SINERR Research Program

Goal I: **Cultural-resource Research:** Assess the cultural resources within the SINERR.

Obj. A: Assess the buried archaeological resources.
1. Perform a preliminary (Phase I) archaeological survey of all unsurveyed upland areas within the SINERR, including the marsh islands within the Duplin River.
2. Using Phase I survey data, develop priorities for Phase II testing and mapping of all sites whose significance and physical extent need to be established.

Obj. B: Assess the submerged archaeological resources.
1. Perform a Phase I archaeological survey of all accessible submerged areas within the SINERR.
2. Using Phase I survey data, develop priorities for Phase II testing and mapping of all sites whose significance and physical extent need to be established.

Obj. C: Assess the historic ruins and historic standing structures, together with their archaeological components.
1. Using the methodology for systematic field work prescribed by the Georgia Survey Manual, perform a basic historic-resources survey of all extant historic structures and ruins within the SINERR.
2. Evaluate the survey data to determine which resources meet the criteria for listing on the National Register of Historic Places.

Obj. D: Use the data from the Phase I and Phase II assessments to manage the cultural resources within the SINERR.
1. Develop strategies for recording, protecting and interpreting the significant cultural resources onsite.
2. Formulate specific research problems to address the management and interpretive needs of the SINERR.

Goal II: Water Processes: Increase knowledge of the basic processes involving water movement, water mixing and natural variations in water parameters within the SINERR.

Obj. A: Measure the relative contributions which upland runoff from the SINERR, freshwater exchanges from mainland rivers, and waters from the open ocean make to the Duplin River's waters.

Obj. B: Estimate the effects of changes in climate on the Duplin River's hydrologic cycle.

Obj. C: Determine the effects of seasonal and storm-event flooding on the marshes within the SINERR.

Obj. D: Determine the relative effects of manmade and natural disturbances to water flow to the salt marsh.

Obj. E: Quantify subsurface water movement into and through the SINERR.

Obj. F: Determine the effect of the natural hydrologic cycle on water quality, as water floods into and ebbs from the marsh.

Goal III: Sediment Processes: Increase knowledge of how sediments are transported and transformed within the SINERR.

Obj. A: Determine current and historical accretion and erosion trends in the SINERR.

Obj. B: Determine the baseline sediment quality in the SINERR.

Obj. C: Determine the sedimentary processes which affect the expansion and contraction of salt marshes.

Obj. D: Determine sedimentation dynamics in the SINERR, including sedimentation rates, effects of natural

animal populations, effects of upland utilization, and effects of human activities within the Duplin River.

Obj. E: Determine the effects of sediments and suspended particulate matter on biota and biotic processes within the water column and sediments.

Goal IV: Nutrients and Other Chemical Inputs: Increase knowledge of the natural variability of nutrients and other chemical inputs to the salt marsh, and of the mechanisms by which the undisturbed salt marsh within the SINERR functions.

Obj. A: Determine the fate of synthetic chemicals introduced into salt marshes.

Obj. B: Determine the long-term baseline fluctuations of nutrients and chemicals, and their response to physical and biological processes.

Obj. C: Determine the variability of nonpoint source contributions to undisturbed salt marshes.

Obj. D: Estimate the effects of watershed management practices on nutrient flows.

Obj. E: Determine natural cycles of nutrients and other chemicals in undisturbed salt marshes.

Obj. F: Determine the effects on biotic communities of changes in nutrient quantities and the introduction of chemicals from outside the SINERR.

Obj. G: Determine the effects on water and sediment quality of nonpoint sources of nutrients, biochemical oxygen demand, bacteria, metals, and organics from the SINERR upland.

Goal V: Primary and Secondary Production, and Fishery Habitat Requirements: Improve knowledge of life cycles of important species which depend upon salt-marsh estuaries, and quantify the importance of the salt marsh and related upland areas.

Obj. A: Determine the importance of the marsh to estuarine and coastal fisheries through direct food-web and habitat interactions.

Obj. B: Determine biotic resources and dynamics in the SINERR, with emphasis on fisheries and recruitment issues.

Obj. C: Determine the extent of coupling and the effect of physical processes on primary and secondary production.

Obj. D: Determine responses of primary and secondary production to inputs of human origin.

Obj. E: Determine the effects of upland management practices on marine and non-marine wildlife species in the upland/marine transitional zone of the SINERR.

Goal VI: Management-related Research: Evaluate the effects of management decisions on the health and stability of the SINERR's ecosystem.

Obj. A: Conduct research on methods of improving monitoring capabilities within large estuarine ecosystems.

Obj. B: Estimate the effects which current upland management practices, including forest management, and vessel traffic in the Duplin River have on the SINERR.

Goal VII: Data Storage-Retrieval System: Establish a comprehensive database of baseline and research data, which allows rapid access to historical and future research and monitoring information gathered within the SINERR.

Obj. A: Design and implement "user-friendly" software for entering and retrieving research and monitoring data.

Obj. B: Construct a database bibliography of publications which have resulted from research and monitoring work in the SINERR, a bibliography which a computer can search.

Obj. C: Increase cooperative efforts between the Marine Institute and DNR to collect and enter all historical and future data in a usable format.

Obj. D: Establish a position to coordinate with all researchers to format and enter their results into the database as it becomes available to the scientific community.

Obj. E: Establish a separate computerized database for archaeological findings.

GOALS AND OBJECTIVES FOR RESEARCH AND MONITORING

SINERR Monitoring Program

Goal I: **Meteorological Monitoring:** Collect meteorological data on an hourly basis at several locations in the SINERR.

Obj. A: Incorporate into the SINERR monitoring database the following meteorological data from two stations operated by the University of Georgia Marine Institute (UGMI) at Marsh Landing and at Moses Hammock: wind speed and direction, air temperature, incident solar radiation, relative humidity, and precipitation. UGMI collects the data remotely and tabulates the data hourly.

Obj. B: Incorporate into the SINERR monitoring database 24-hour measurements for the following parameters which UGMI collects at the South End weather station: wind speed and direction, minimum and maximum air temperatures, and total precipitation.

Obj. C: Develop a fourth automated collection site midway up the Duplin River, at the Kenan Field timber dock or other suitable location, which DNR and UGMI will jointly operate to complement the existing sites operated by UGMI near the river's upper and lower ends.

Goal II: **Hydrological Monitoring:** Collect hydrological data at various sampling sites in the SINERR.

Obj. A: Incorporate into the SINERR monitoring database tide-height data collected by UGMI at stations at Marsh Landing and Moses Hammock.

Obj. B: Add a third tide gauge midway up the Duplin River, which DNR and UGMI will jointly operate in conjunction with the proposed meteorological station at the Kenan Field timber dock.

Obj. C: Incorporate into the SINERR database the following hydrological data which UGMI currently collects at Marsh Landing and Moses Hammock, using Hydrolab 2020 or comparable equipment: water temperature, salinity, conductivity and pH. Collect the data hourly.

Obj. D: Add a third hydrological station at the Kenan Field timber dock, using Hydrolab 2020 or comparable equipment, which DNR and UGMI will jointly operate. Develop this station at the same time as the proposed meteorological station and tide gauge.

Obj. E: Continue quarterly collection of water quality parameters by DNR's coastal water quality monitoring project, using stations near Marsh Landing and Moses Hammock as well as 12 other sampling locations throughout Georgia's estuaries.

Goal III: Biological Monitoring: Collect biological data at various sampling sites within the SINERR.

Obj. A: Continue to collect water-quality data and fecal coliform measures every two months, as part of DNR's shellfish sanitation project. Continue using four collection sites within the SINERR: near Marsh Landing dock, near the mouth of Barn Creek, near the headwaters of Barn Creek, and near Moses Hammock.

Obj. B: Complete a full shoreline reconnaissance for possible pollution sources every four years as part of DNR's shellfish sanitation project.

Obj. C: Continue to collect annual pesticide and metal data from oyster samples (one station) and sediment samples (both stations) as part of DNR's coastal water quality monitoring project. The collection sites within the SINERR are the Duplin River three-quarters of a mile upstream from Marsh Landing and near Moses Hammock.

Obj. D: Seek the Department of Commerce's cooperation in placing a monitoring site for the national status and trends monitoring program at a site within the SINERR at which DNR currently gathers data for the coastal water-quality monitoring project. If feasible, gather data for the national status and trends program about six months after the annual collection of pesticide and metal data for DNR's coastal water quality monitoring project.

Goal IV: Data Management, Analysis and Reporting: Make historical monitoring data available to scientists, and analyze the data collected to enable SINERR managers to detect unusual changes within the SINERR.

Obj. A: Develop a comprehensive management system for the monitoring data collected within the SINERR.

Obj. B: Work with UGMI to store and retrieve data collected by the meteorological and hydrolab stations.

Obj. C: Develop a systematic approach to analyzing and reporting key water quality parameters such as pesticide and metal concentrations, to allow DNR to detect unusual values and investigate their causes if necessary.

Obj. D: Distribute annual reports on all monitoring tasks to the members of the SINERR research task force, to UGMI, to SINERR managers, and to the U.S. Department of Commerce.

Appendix H:

Goals and Objectives for Education and Interpretation

GOALS AND OBJECTIVES FOR EDUCATION AND INTERPRETATION

Mission Statement

Communicate to various publics, through the Sapelo Island National Estuarine Research Reserve, the value of estuarine areas and the roles they play in the quality of life, so that informed decisions can be made about the use of estuarine areas.

Goals and Objectives

Goal I: **Content:** Through SINERR programs, develop the message that Georgia's coastal area is a product of natural forces, modified by human activities which require effective, long-term management.

Obj. A: Describe the natural history of the SINERR in terms of:
1. The relationship between estuaries and the other elements of the coastal ecosystem.
2. The similarities and differences between the SINERR and other estuaries.
3. The natural forces which have shaped and continue to shape the coastal area.
4. The plants and animals of this ecosystem.

Obj. B: Describe the human activities which have occurred within the SINERR and how these activities have modified the natural system, including:
1. The cultural history of Sapelo, and how it relates to the other barrier islands.
2. Identification and explanation of the altered and relatively unaltered parts of the SINERR.
3. The role of scientific research in helping people understand the functions of estuaries.

Obj. C: Describe how decisions are made about the use of Georgia's coastal resources on a federal, state and local level, in terms of:
1. Laws and regulations that protect the coastal area.
2. Goals, objectives and policies of the National Estuarine Reserve Research Program.
3. How coastal decisions are affected by economic considerations such as recreation and commercial fishing.
4. How businesses, organizations and individuals affect such decisions.
5. The challenges of coastal resource management, and identification of additional areas for scientific research.

GOALS AND OBJECTIVES FOR EDUCATION AND INTERPRETATION

Goal II: **"Multiplier" Audiences:** Concentrate educational and interpretive resources on reaching audiences who will communicate their knowledge about estuarine and other coastal resources to many other people.

Obj. A: For academic instructors:
1. Develop facilities (an interpretive center and a nature trail) and curricula for grades kindergarten through twelve, consistent with State instructional requirements, which teachers may use for classroom instruction and in guiding field trips to the SINERR.
2. Develop facilities and interpretive materials which instructors of post-secondary students may use to enrich classroom instruction and in guiding field trips to the SINERR.

Obj. B: For leaders of groups interested in coastal resources and their conservation: develop training programs, facilities and interpretive materials which such leaders can use for half-day or full-day guided tours within the SINERR.

Obj. C: For elected and appointed officials who administer programs which affect estuaries and other coastal resources: develop a briefing on the value of estuarine and other coastal resources, focusing on sound management practices and their benefits.

Obj. D: For media representatives: develop a coastal wetlands briefing packet to educate journalists.

Obj. E: For researchers/scientists:
1. Develop a briefing program regarding research history and opportunities at the SINERR.
2. Develop a program of archaeological excavation in which the interested public can participate as volunteer labor.

Obj. F: For "alumni" (individuals who have visited the SINERR and wish to remain involved in the educational and interpretive program): develop a periodic newsletter which contains information about the SINERR and any special public programs.

Obj. G: Make available to all targeted groups (e.g. hunters, campers) educational and interpretive resources developed for general public tours (see Goal III).

GOALS AND OBJECTIVES FOR EDUCATION AND INTERPRETATION

Goal III: The General Public: Communicate with the general public through effective educational and interpretive programming.

Obj. A: Re-evaluate on a regular basis the current schedule and content of guided public tours within the SINERR.

Obj. B: Develop printed materials and other interpretive tools, including:

1. Exhibits, graphic displays and signage.
2. Nature trails, for use on guided tours.
3. Video, film and audio-tape presentations.
4. Publications.
5. Offsite presentations.
6. Publicity with press packets and news releases.

Goal IV: Educational and Interpretive Resources: Extend the SINERR' educational and interpretive program by cooperating with other organizations which perform related tasks.

Obj. A: With other operating units within DNR:

1. Work with staff of State parks and historic sites in the coastal area to interpret the SINERR and distribute SINERR publications at these recreation areas.
2. Place SINERR exhibit materials and publications at the DNR coastal headquarters building in Brunswick when that building is complete.
3. Work with Project WILD in developing curriculum material.

Obj. B. With the Georgia Department of Education:

1. Obtain guidance in developing classroom materials and field activities which are compatible with State educational requirements.
2. Obtain guidance in developing a teachers' and administrators' training course which will offer staff development units.

Obj. C: With the Georgia Department of Industry and Trade, explore the possibility of placing interpretive exhibits and educational publications in highway welcome centers.

Obj. D: With the University of Georgia Marine Institute:
1. Assist in providing guided tours for guests of the Institute.
2. Continue making the Institute's grounds a stop on the Department's general public tours, and incorporate a discussion of the Institute's research as appropriate.

Obj. E: With the University of Georgia Marine Extension Service:
1. Obtain guidance in developing guided tour facilities.
2. Obtain assistance in training teachers and leaders of special tours.
3. Cooperate on joint interpretation of Gray's Reef Marine Sanctuary and the SINERR.
4. Obtain guidance on exhibit development.

Obj. F: With Georgia Southern College and Savannah State College:
1. Explore the possibility of using the colleges' museum resources to interpret the SINERR.
2. Offer educational opportunities to students of the colleges, in the form of classroom materials and the opportunity to use the SINERR as outdoor laboratory.

Obj. G: With the Fernbank Museum of Natural History:
1. Obtain guidance with exhibit development.
2. Assist with coastal exhibits produced at Fernbank.

Obj. H: With the McIntosh County Chamber of Commerce:
1. Coordinate informational publications about the SINERR.
2. Continue the Chamber's role of scheduling general public tours and distributing SINERR information.
3. Explore the possibility of placing exhibits and other interpretive materials at the Darien welcome center.

Obj. I: With local (coastal) conservation groups:
1. Actively solicit volunteer guides from groups including, but not limited to:
   a. Coastal chapters of the Audubon Society
   b. Coastal chapter of The Georgia Conservancy
   c. The Nature Conservancy
   d. The Georgia Wildlife Federation
   e. Ocmulgee Audubon Society
   f. Sierra Club
   g. Georgia Botanical Society

2. Seek other program assistance from the above groups.

Goal V: **Program Evaluation:** To evaluate, through the SINERR annual report, the effectiveness of the educational and interpretive program and its effect on SINERR resources.

Appendix I:

Sapelo Island Access Policies

SAPELO ISLAND

General Operating and Access Policies
May 15, 1990

I. Introduction

The State of Georgia owns most of Sapelo Island. The island consists of three management units assigned to the custody of the Department of Natural Resources (DNR):

- Richard J. Reynolds Wildlife Management Area (Reynolds WMA): management of forest and wildlife resources; public hunting, fishing, camping and beach use.
- Sapelo Island National Estuarine Research Reserve (the SINERR): protection of the Duplin River estuary; scientific research; public education; public hunting and fishing.
- Sapelo Island Natural Area (the Natural Area): public education; low-intensity recreation; scientific research.

There is a considerable public interest in Sapelo Island, which is created by the value of its natural resources, the amount of State investment in the island, and the benefits which members of the general public receive from visiting it. The State, acting through DNR, is responsible to protect the public interest in this unique island.

State lands surround private lands known as the Hog Hammock Community. Its current residents and their forbears have lived on Sapelo for generations. The State has acknowledged its duty to protect Hog Hammock's heritage by creating the Sapelo Island Heritage Authority, which furthers the preservation of the community's cultural and historic values (Official Code of Georgia Annotated (O.C.G.A.) § 12-3-440 et seq.).

The State provides certain essential services, including scheduled water transportation, for permanent residents and State employees living on Sapelo Island. O.C.G.A. § 12-2-5 grants DNR the authority to provide these services.

The public interest in Sapelo Island requires that DNR establish policies for operation of and access to the island. The policies which follow are established to protect Sapelo Island for the public's benefit while protecting the rights of private property owners on the island. The policies are set forth in writing to guide island managers in performing their duties and to give public notice of the policies.

II. Definitions

A. Classes of Island Users. The following terms when used in these policies have the meanings indicated below:

1. Island Manager: the DNR employee who has responsibility for managing Sapelo Island on a daily basis. The Island Manager may be reached at the following address:

Island Manager
DNR--Game and Fish Division
Post Office Box 15
Sapelo Island, GA 31327
Phone: (912) 485-2251

2. Island landowner: a person or other legal entity which has title to real property on Sapelo Island.

3. Island resident: a person who (a) is domiciled on Sapelo Island or (b) has executed an affidavit claiming Sapelo Island as his or her permanent place of residence. Such persons include individuals who live in the Hog Hammock community; employees of DNR or Board of Regents (Regents) who are required as a condition of employment to reside on the island; individuals who are continuously quartered on the island while performing research or employment lasting longer than three consecutive months; immediate family members domiciled with the aforementioned individuals; and/or children residing off the island attending school or college and receiving their support from an island resident.

4. Official visitor: a person who is not an island resident but who temporarily visits the island at the invitation of DNR or the University of Georgia Marine Institute (UGAMI) for official State business or for federal or local governmental business. This class does not include invited guests or members of the general public who are participating in tours, managed hunts, camping activities or conferences unrelated to official state business.

5. Invited guest: a person whom a Sapelo Island landowner or resident invites to visit the island but who is not engaged in official federal, state or local business.

6. General public: a member of the general public is a person who is not included in any of the above classes.

B. Official State Business. The term "official State business," when used in these policies, means any or all of the responsibilities and activities described in this section.

Regents operates UGAMI, which is located on the south end of Sapelo Island, under the terms of a 50-year lease with DNR. Regents also provides certain barge services to DNR, island residents, and island landowners.

DNR operates the Reynolds WMA, the SINERR and the Natural Area. DNR also provides for island residents both water transportation to Sapelo and essential services on the island. These services include:

1. Transporting mail for DNR and for island residents;

2. Transporting school children of island residents between the island and the mainland, under contract with the McIntosh County Board of Education;

3. Providing volunteer fire protection and waste disposal services on the island;

4. Maintaining the State-owned roads on the island;

5. Providing the residents of the Hog Hammock community with a drinking-water system;

6. Providing law enforcement services as authorized by the Game and Fish Code (O.C.G.A., Title 27). These services include enforcing:
   a. All State laws on property owned or controlled by DNR; and
   b. All State laws pertaining to functions assigned to DNR;
   c. Any State law when the violation of that law is committed in conjunction with a violation of State law pertaining to functions assigned to DNR; and
   d. Any State law on orders from the Governor or to protect any life or property when the circumstances demand action; and

7. Removing willing persons from Sapelo Island in the event of a life-threatening emergency such as an individual health crisis, uncontrollable wildfire or a major storm.

Official State business includes business conducted by federal and local governmental officials in performance of their official duties.

III. Authorized Uses of Sapelo Island

A. Residential Use. Residential use of Sapelo Island is restricted to the following individuals or groups:

1. Island landowners;

2. Island residents;

3. Official visitors, such as research scientists associated with UGAMI, or DNR employees who are not domiciled on the island;

4. Invited guests;

5. Conference groups associated with UGAMI or DNR; and

6. Persons authorized to camp during the annual managed hunts or within the primitive camping area operated by DNR.

B. Personal Business by Island Landowners or Residents. DNR does not regulate personal business conducted entirely on private property by Sapelo Island landowners. DNR authorizes other activities on State-owned lands as follows:

1. Island residents may gather deadwood and handicraft materials on Sapelo as individually approved by DNR's island manager or his designee, so long as these activities do not conflict with DNR program goals.

2. Island residents may fish from docks, bridges and beaches within the Reynolds WMA and may also gather oysters and clams within approved shellfish harvesting areas, as authorized by DNR's island manager or his designee. These activities are generally authorized on all other parts of the island.

3. Island residents may use DNR's boat hoist for work on their small boats, as individually authorized by DNR's island manager or his designee.

4. Permanent residents of the Hog Hammock community may hunt on State-owned land during legal seasons as individually authorized by DNR's island manager or his designee.

5. Activities other than the above by island landowners or residents, including any use of the Reynolds WMA,

will be only as specifically authorized by DNR's island manager or his designee.

C. Personal Business by Persons Who Do Not Own Land or Reside on Sapelo Island. DNR does not regulate personal business conducted entirely on private property by invited, non-paying guests of island landowners. They may fish from docks, bridges and beaches within the Reynolds WMA and may gather oysters and clams within approved shellfish harvesting areas, only as specifically authorized by DNR's island manager or his designee. Such non-paying guests may accompany their hosts as the latter travel about the island or may use transportation which their hosts provide for them to use.

Members of the general public may engage in the following activities on Sapelo Island:

1. Participating in tours, managed hunts or primitive camping offered by DNR;

2. Attending conferences hosted by UGAMI or DNR;

3. Gathering oysters in the Duplin River;

4. Fishing, hunting waterfowl, or operating boats in the tidal waters surrounding Sapelo Island; and

5. Using the beach below the high water mark.

Activities other than the above by persons who are not landowners or residents of Sapelo Island, including any use of the Reynolds WMA, will be only as specifically authorized by DNR's island manager or his designee.

D. Public Tours, Hunting, Camping and Conferences. Individuals may participate in these activities only as authorized by UGAMI or DNR, as applicable. The McIntosh County Chamber of Commerce (phone 912-437-6684) handles reservations for regular DNR tours. DNR schedules special tours through its office on Sapelo Island.

Persons who participate in hunts at the Reynolds WMA may camp in the Moses Hammock hunting camp for the duration of the hunt and must remain within designated hunting areas while actually hunting. When not hunting, they may fish from docks within the WMA and use the beach.

DNR limits use of the primitive camping area to organized groups, scheduling its use through the DNR office on Sapelo Island. Campers may use the designated primitive camping area, open portions of the Reynolds WMA, and the

beach. Access to other parts of Sapelo Island for members of such groups will be only as specifically authorized by DNR's island manager or his designee.

Conference participants may use buildings and lands under the control of DNR and UGAMI as authorized by those agencies. They may also use the State-owned roads south of the Reynolds WMA, and the beach.

Use of Sapelo Island other than the above by members of tour groups, hunters, campers and conference participants will be only as specifically authorized by UGAMI or DNR, whichever agency is responsible for managing the property in question.

IV. Access and Transportation Policies

A. Boats

1. Ferry Service. DNR provides regularly scheduled ferry service between Sapelo Island and the mainland. Prior written requests and approval by DNR are required for invited guests of island landowners. Other terms and conditions of ferry service are provided under the terms of an operating agreement between DNR and UGAMI. These provisions are attached hereto as Exhibit "A" and are by reference incorporated herein.

   DNR further reserves the right to provide ferry service to invited guests of island landowners only as space is available and only in the order of receipt of written requests for such ferry service.

   Participants in regularly scheduled DNR tours, hunters and users of the primitive camp must all purchase trip tickets at the McIntosh County Chamber of Commerce to be eligible to ride the ferry. Participants in unscheduled DNR tours may ride the ferry by pass.

   Requests for boat runs other than those regularly scheduled must be made through the boat captain and his superiors and must be approved by the Director of the Game and Fish Division.

   DNR operates a small patrol boat which may be used for emergency transportation to or from the island.

2. Barge Operations. Under the terms of an operating agreement with DNR, UGAMI operates barges to transport heavy freight, motor vehicles, bulk fuel and other cargo between the mainland and Sapelo Island.

UGAMI offers transportation for vehicles for its or DNR's official use; vehicles belonging to those UGAMI or DNR employees domiciled on Sapelo Island; and vehicles belonging to Sapelo Island landowners who are permanent residents of the island.

Before employees or permanent residents may use the UGAMI barge to transport a vehicle for their personal use on Sapelo Island, they must complete an affidavit stating that they are permanent residents of Sapelo island and what specific vehicle they propose to bring to the island They must also complete a permit application to use the UGAMI barge.

DNR may authorize persons under contract with the State to remove timber from Sapelo Island using a barge. They may also bring to the island equipment which is necessary for the timber harvesting operations.

Island landowners who are not permanent residents of Sapelo may engage a private barge to transport a vehicle or other cargo to the island. Landowners must first obtain DNR's written permission to use DNR-operated docks for loading and unloading and DNR-maintained roads for access to his property.

3. Small Boats. DNR and UGAMI operate research vessels, patrol boats and other small watercraft for official State business, docking these vessels at designated island and mainland locations. These docks are identified on Exhibits "B" and "C", attached hereto and incorporated herein by reference. Other authorized uses of small watercraft at Sapelo Island are as follows:

   a. Island residents or landowners may operate small boats to and from the island. Landowners and their invited guests must use the Foundation dock located in Barn Creek immediately behind the post office.

   b. Participants in the managed hunts on Sapelo Island may use the Moses Hammock dock during their stay.

   c. Members of the general public may use boats in the tidal waters surrounding Sapelo Island. They may anchor boats off the beach for access to the beach below the high water mark, during daylight hours. They may not beach or dock their boats on State-owned property without specific permission from DNR's island manager or his designee.

d. Any uses of docks other than as specified above will be only as specifically approved by DNR or UGAMI, whichever agency has responsibility for managing the dock in question.

B. Motor Vehicles DNR and UGAMI operate motor vehicles for official State business on Sapelo Island. Other uses of motor vehicles on the island are authorized as follows:

1. Employees of either agency and their dependents who are domiciled on the island, and their invited guests may with prior authorization by DNR operate privately owned vehicles on the open portions of the DNR-maintained road system.

2. Island landowners who are permanent residents of Sapelo Island and their invited guests may operate motor vehicles on the island as authorized by DNR.

3. Island landowners who are not permanent residents of Sapelo Island and their invited guests may operate motor vehicles on the island, with DNR's written permission to use the open portions of the State-owned road system.

4. As authorized by contract, persons harvesting timber for DNR may bring to the island motor vehicles necessary for their operations. These vehicles will be removed from the island upon expiration or termination of the contract or when said vehicles become unserviceable.

C. Aircraft. DNR and UGAMI use the Sapelo Island airstrip and associated facilities for official State business. Other uses of aircraft at Sapelo Island are as follows:

1. Single-trip use of the airstrip and associated facilities is authorized by advance written permission from the Game Management coastal regional supervisor. DNR authorizes such use for official State business and for personal business by residents of Sapelo Island or their guests, when they cannot feasibly conduct such business without the use of aircraft.

2. DNR allows the U. S. Army to use the airstrip as part of its Military Assistance to Safety and Traffic (MAST) Program housed at Fort Stewart. The MAST Program enables military personnel to provide emergency medical assistance to persons on Sapelo Island.

3. DNR may authorize other landing sites for temporary use by helicopters.

4. The Federal Aviation Administration has designated the airstrip for emergency use. DNR allows use of the strip in the event of an aviation emergency, at the pilot's own risk.

V. Obtaining Permission to Use Sapelo Island

The island manager or his designee can provide details about receiving permission to use Sapelo Island in the ways outlined above. Uses of Sapelo Island not specifically mentioned in the terms of this policy will require submittal of a written request for same to the Island Manager, for DNR's consideration.

Approved this 15th day of May, 1990.

Leon Kirkland

Leon Kirkland, Director
Game and Fish Division
Department of Natural Resources

EXHIBIT "A"

SAPELO ISLAND FERRY

Transportation of authorized personnel to and from the Meridian Dock and Sapelo Island will be provided by the DEPARTMENT in accordance with the following policies and in consideration of payment of the fees indicated below.

BOAT FEES AND PASSES

1. MARINE INSTITUTE

(a) Personnel assigned/employed by the INSTITUTE and others as identified below may be provided a non-transferable boat pass, or may be covered by letter request to the DEPARTMENT at the discretion of the INSTITUTE.

(1) INSTITUTE staff, faculty, students and technicians who are Island residents and their dependent family members residing in such person's home and/or children residing off the Island attending school or college and receiving their support from such person.

(2) Scientific personnel not directly employed by the INSTITUTE but who are Island residents while carrying out research programs at the INSTITUTE and family members residing in such person's home and/or children residing off the Island attending school or college and receiving their support from such person.

(3) Staff and faculty members from the University of Georgia who are required to make official visits to the INSTITUTE.

(4) Faculty, students and technicians, from any institution, who are involved in ongoing research programs at the INSTITUTE.

(5) All employees of the INSTITUTE who commute daily to and from the facility.

(6) All University of Georgia students doing course-related work at the INSTITUTE, including authorized field trips and their supervisors.

(7) Repairmen who come to the INSTITUTE facility regularly for performing repair work. Restricted to those whose names are submitted to the DEPARTMENT and listed on passenger list.

(b) The following individuals will be required to pay a fee as set forth in Item 7 below:

(1) Unofficial guests of the INSTITUTE, including personal guests of INSTITUTE staff, personnel, students and technicians.

(2) Faculty, students and technicians from any institution, except those individuals covered by paragraph 1 (a).

(3) INSTITUTE related groups and/or individuals on personal (non-official) visits to the Island.

(c) The INSTITUTE will issue passes to the INSTITUTE related personnel outlined in Section 1 (a) and will provide the DEPARTMENT with a list of names to whom these passes are issued. At such times as names are added and/or deleted the INSTITUTE will inform the DEPARTMENT by letter that a name(s) should be added or deleted and will collect the passes previously issued to individuals whose names are deleted.

(d) The INSTITUTE will follow existing policy involving guests, i.e., a "Boat Request" form will be sent to the DEPARTMENT office two (2) days in advance of proposed visits. This procedure will enable the DEPARTMENT to keep load limits within U. S. Coast Guard Regulations and will indicate to the boat captain that the visitor(s) has been permitted to ride the boat.

2. DEPARTMENT OF NATURAL RESOURCES. DEPARTMENT personnel will be governed by the following:

(a) DEPARTMENT personnel and their immediate family residing on the Island will be issued a non-transferable boat pass and will not be required to pay a fee. Such passes will be restricted to dependent family members residing in the employees' home and/or children who reside off the Island attending school or college and who receive their support from an employee of the DEPARTMENT.

(b) DEPARTMENT personnel who are non-Island residents but who must, from time to time, travel to the Island for meetings and/or to carry out work activities, will be issued a non-transferable boat pass and will not be required to pay a fee.

(c) All DEPARTMENT personnel will follow the procedure in effect at present, in that they will submit a "Boat Request" form for any invited guest(s) two (2) days prior to the proposed visit.

3. U. S. POSTAL SERVICE.

(a) U. S. Postal Service employees will continue to be transported in accordance with the provisions of their contract with the DEPARTMENT.

4. SCHOOL CHILDREN.

(a) Island children attending school on the mainland will be provided one (1) roundtrip per school day to and from the Island to attend school under the existing contract between the DEPARTMENT and McIntosh County Board of Education.

5. SAPELO ISLAND RESIDENTS.

(a) Island residents not otherwise provided for in the University contract or the DEPARTMENT pass system will pay a fee of $1.00 each way or may purchase a $25.00 per year pass which will entitle him to ride on any scheduled trip.

6. OTHER PASSENGERS.

(a) Repairmen who commute to DEPARTMENT facilities on a regular basis for performing repair work will be placed on the passenger list and issued a pass to ride the boat.

(b) Participants in field trips to the refuge portion of the Island will be required to pay a fee of $1.00 each way or purchase an annual pass for $25.00.

7. GUESTS.

(a) Guests include all person(s) not covered by the provisions of paragraphs 1 - 6 above. All such persons will pay a fee of $1.00 each way or may purchase an annual pass for $25.00. In addition, such person(s) must have prior written approval from the DEPARTMENT.

8. CHILDREN.

(a) Children under six (6) years of age may ride free. Children six (6) years of age or older will pay a fee of $1.00 each way or purchase an annual pass for $25.00.

PASSENGER PRIORITY

U. S. Coast Guard regulations limit the number of passengers that may be transported on the boat(s) operated by the DEPARTMENT that services Sapelo Island. To insure the maximum availability

of space for key personnel while simultaneously complying with Coast Guard limitations, the priority system outlined below is hereby established. This system will be applied by the Boat Captain at any time passenger demand exceeds rated passenger capacity of the boat in service.

PRIORITY NO. 1.

Personnel identified below will be issued a "Priority No. 1" pass and will be entitled to first consideration whenever an "overload" situation becomes evident.

1. All INSTITUTE and DEPARTMENT personnel and authorized family members residing on the Island.

2. INSTITUTE and DEPARTMENT employees residing off the Island who require daily transportation to and from their work area.

3. Repair/service technicians going to and from the INSTITUTE or DEPARTMENT facilities for the purpose of performing repair work.

PRIORITY NO. 2.

The following personnel will be issued a "Priority No. 2" pass and may board the vessel after all Priority No. 1 passengers have embarked.

1. State employees other than those covered by Priority No. 1, who must visit the Island for official business.

2. Staff and faculty members from the University of Georgia who are required to make official visits to the INSTITUTE.

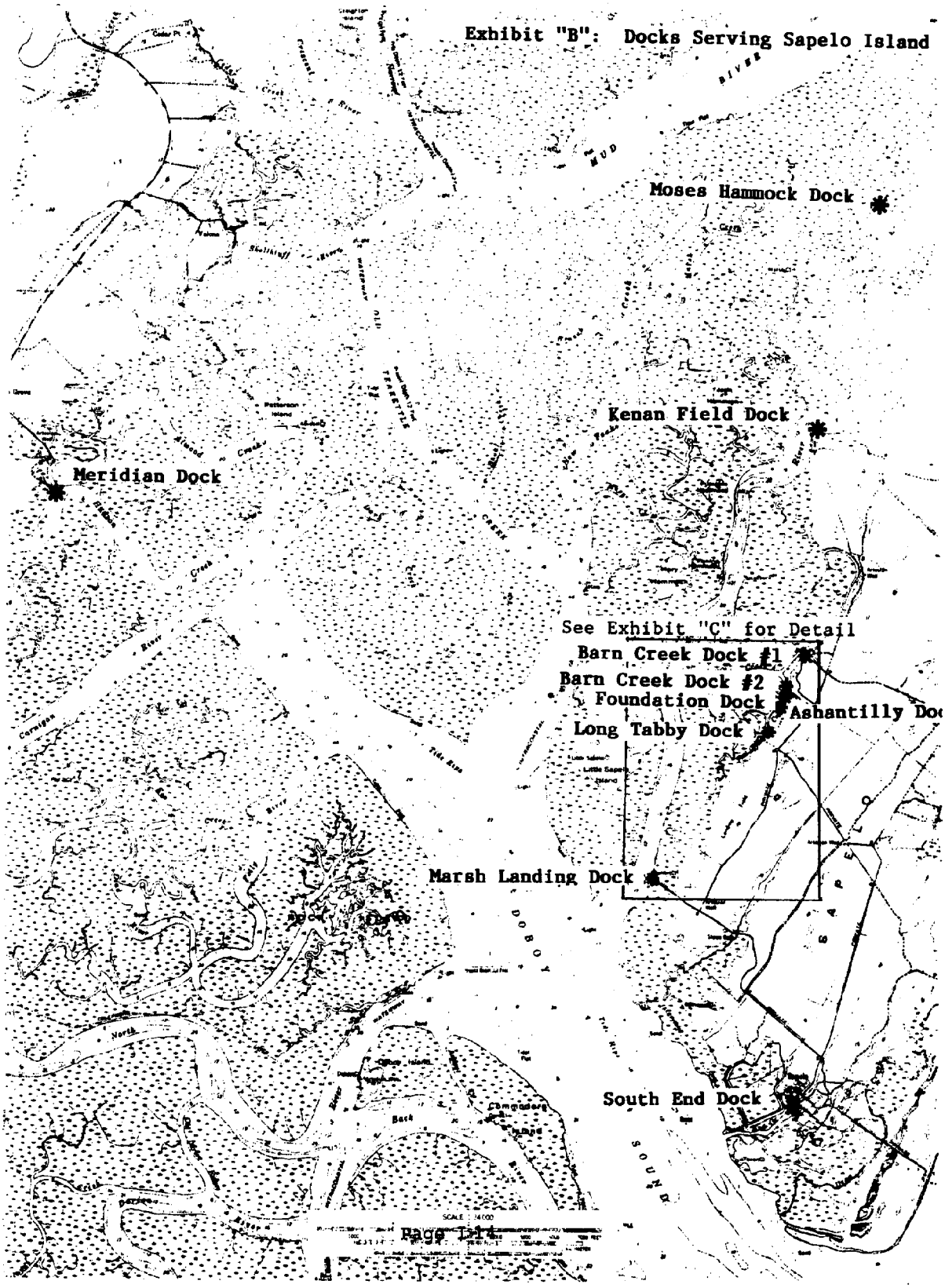
3. University of Georgia students visiting the INSTITUTE on official business or an authorized field trip.

4. Residents of Sapelo Island not otherwise covered will be considered equally with other Priority No. 2 passengers upon presentation of a valid ticket.

PRIORITY NO. 3.

All guests and visitors not included under the provisions of Priority No. 1 or Priority No. 2.

Exhibit "B": Docks Serving Sapelo Island



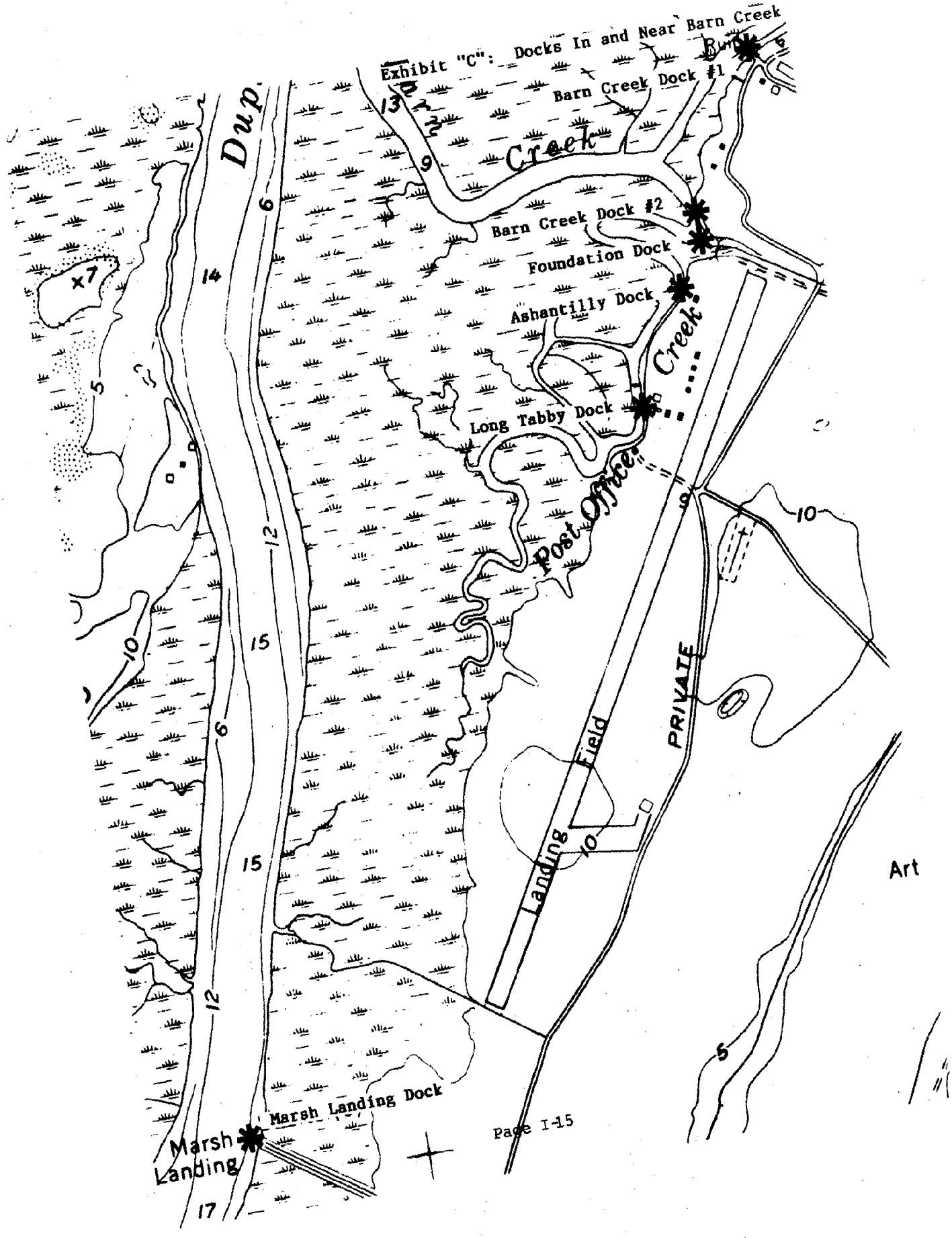


Exhibit "C": Docks In and Near Barn Creek
Barn Creek Dock #1
Barn Creek
Barn Creek Dock #2
Foundation Dock
Ashantilly Dock
Long Tabby Dock
Post Office Creek
Dup.
PRIVATE
Landing Field
Marsh Landing Dock
Marsh Landing
Art

SAPELO ISLAND FERRY SERVICE

SCHEDULING POLICY

December 1, 1988

1. The normal operating schedule for the Sapelo Island ferry shall be as follows:

Day of the Week	Leaves Sapelo	Leaves Meridian
Monday, Wednesday, Friday	7:00 a.m., Noon, 4:30 p.m.	8:30 a.m., 3:30 p.m., 5:15 p.m.
Tuesday, Thursday	7:00 a.m., 2:30 p.m., 4:30 p.m.	8:30 a.m., 3:30 p.m., 5:15 p.m.
Saturday	8:00 a.m., 12:30 p.m.	9:00 a.m., 5:15 p.m.
Sunday (first and second weeks of the month)	4:00 p.m.	4:30 p.m.
Sunday (fifth week of the month, fourth week of May and fourth week of October)	8:30 a.m., 4:00 p.m.	9:00 a.m., 4:30 p.m.

2. Under some circumstances, including emergencies, it may be necessary to vary the time of a normally scheduled ferry run. The Department of Natural Resources' manager for Sapelo Island has the authority to vary the time of a ferry run by not more than two hours from the normal schedule without approval from higher authority. Except for an emergency which threatens life, limb or property, such schedule variances will be posted so as to be clearly visible at Meridian Dock, at Marsh Landing Dock, and at the Department's administrative office on Sapelo Island, not later than twenty-four hours before the time of the normal run or of the varied run, whichever is earlier. The Island manager will also notify the McIntosh County Chamber of Commerce's welcome center and the office of the Director of the Game and Fish Division of the change not less than twenty-four hours in advance.

3. The Director of the Game and Fish Division or his designee will approve each change to the established ferry schedule which involves the deletion or addition of a scheduled run. Unless an emergency exists, the Island manager will forward to the

Director a written request to delete or add a run to reach the Director not less than one calendar week before the day of the proposed change. The Director or his designee will inform the Island manager by telephone of the decision. If the proposed change is authorized, notice of it will be posted at the locations noted above, and notice given to the McIntosh welcome center, not later than forty-eight hours before the time at which the change will occur. In an emergency, the Island manager will notify the Director as soon as possible by telephone or radio and post any approved change at the above locations as soon as practical.

4. The Director of the Game and Fish Division and his office staff will be made aware of deviations from the normal ferry schedule. Anyone wishing to verify the ferry schedule may call the Director's office at (404) 656-3523 or the Sapelo Island manager at (912) 485-2251.

Approved the 1st day of
December, 1988, by:

Leon Kirkland, Director
Game and Fish Division

Appendix J:

Estimated Costs for Recommended Improvements in Research and Education Programs at the SINERR

SAPELO ISLAND NATIONAL ESTUARINE RESEARCH RESERVE

Advisory Committee's Recommendations on Monitoring, Research, Education and Interpretation

Estimated Budget

MONITORING

Equipment	DNR/UGMI Shared Use	Fiscal Year
Hydrolab 2020 or 4000	$ 2,064	
Hydrolab Surveyor (portable)	6,000	
Weather station	5,072	
TOTALS	$ 13,136	Requested for FY-1992

EDUCATION AND INTERPRETATION

Personnel	Annual Salary	
Education coordinator (new)	$ 41,350	
Interpretive assistant (labor conversion)	22,010	
TOTAL	$ 63,360	FY-1991: Timber revenues
Governor's interns	$ 3,000	FY-1991

Interpretive Center	2200 sq. ft.	
Building with offices for above personnel, rest-rooms, audiovisual room, exhibit space and exhi-bits.	$240,000	Requested for FY-1992

		Fiscal Year
Interpretive Trail	**Cost, Installed**	
1. Layout (existing equipment and staff)	$ 0	
2. Boardwalks, dock and footbridge (materials only; construction by existing staff)	5,150	
3. Observation platform and wildlife blind (materials only)	4,000	
4. Picnic pavilion at beach (materials only)	4,000	
5. Saltmarsh interpretive display	1,800	
6. Interpretive signage for twelve 18x24-inch signs, installed	2,000	
TOTALS	$ 16,950	FY-1992: Nongame Fund
Exhibits		
1. Renovate exhibits at Meridian Dock (under current grant)	$ 0	
2. Place interpretive graphics on Sapelo Queen	1,800	
3. Build or buy portable exhibits	2,400	
TOTAL	$ 4,200	Requested for FY-1992
Curriculum Materials		
1. Development of materials	$ 8,000	FY-1992
2. Printing and mailing materials to schools (annual cost)	$ 5,000	FY-1992

		Fiscal Year
Audiovisual Materials		
Ten-minute videotapes a. SINERR overview for schools b. SINERR overview for older audiences c. Marine Institute research at the SINERR		
TOTAL	$ 60,000	FY-1993

GRAND TOTALS

ANNUAL EXPENSES	**$ 71,360**
ONE-TIME EXPENSES	**$102,286**
CAPITAL COSTS	**$240,000**

Appendix K:

Public Comments on the Management Plan

PUBLIC COMMENTS ON THE SINERR MANAGEMENT PLAN
AND
DNR'S RESPONSES TO COMMENTS

Summary of December 18, 1990

ADVISORY COMMITTEE

RECOMMENDATION: Expand membership of the AC and task forces to have a broader representation of SINERR's constituents, including fishermen.
RESPONSE: Dr. Stuart Stevens, of DNR's Coastal Resources Division, represents the interests of fishermen on the research task force. DNR has asked Dr. Margaret Robinson, Dean of the School of Science and Technology at Savannah State College, to join the education task force.

RECOMMENDATION: Open the meetings of the task forces and the Advisory Committee to the public, and allow public review of reports, findings and recommendations.
RESPONSE: Under Georgia's open-meetings law, such meetings are open to the public. DNR has placed the Committee's final recommendations as appendices in the SINERR management plan.

EDUCATION PROGRAM

RECOMMENDATION: Actively educate coastal managers and other multiplier audiences, using DNR staff.
RESPONSE: DNR will do this as stated in the SINERR plan.

RECOMMENDATION: Have the University of Georgia, rather than DNR, employ the Marine Educator.
RESPONSE: Since the Education Coordinator will report to and be supervised by the SINERR Manager, the Coordinator must be a DNR employee.

RECOMMENDATION: Ensure that the Education Coordinator works closely with educational personnel at the Marine Institute, the Marine Extension Service, Savannah State College, Georgia Southern College, and similar institutions.
RESPONSE: DNR will do this as stated in the SINERR plan on pages H-3 and H-4.

RECOMMENDATIONS: Ensure that interpretive programs for children reflect current knowledge about how to help children learn effectively. Consider including additional issues in the educational program, such as ballast islands, larval shrimp and oysters, and the importance of marshwrack.
RESPONSE: The Education Coordinator will be responsible for developing appropriate educational programs for the SINERR, as stated in the SINERR plan. This person will be a trained and experienced educator.

RECOMMENDATION: Evaluate further the role which docents may play in the SINERR program, including:

a. Determine whether DNR can provide liability insurance for docents.
b. Allow docents to lead camping trips for the public.
c. Develop details of a training program for docents.

RESPONSE: DNR will thoroughly evaluate the role of volunteers in the SINERR's educational and interpretive program. DNR will not allow untrained volunteers to act as guides or interpreters.

RECOMMENDATIONS: Publish a policy for rescheduling tours and inform the public about this policy. Continue the public tours during managed hunts.
RESPONSE: A policy for rescheduling tours appears in the SINERR management plan as an appendix. The SINERR office on Sapelo Island and the McIntosh County Chamber of Commerce also have copies of this policy.

RECOMMENDATION: Make tour presentations on the "Sapelo Queen".
RESPONSE: DNR will ask each tour group if it wants an informal presentation outside the cabin of the ferry. The cabin is not suitable for regular presentations. The engine is too loud for group presentations, and tour groups cannot be separated from the regular commuters and other riders.

RECOMMENDATION: Hold public tours on more days of the week.
RESPONSE: DNR reserves Tuesday, Thursday and Friday during the school year for student groups. Five tours a week are actually given from March through August. Student groups have significantly increased visitation to the SINERR.

RECOMMENDATION: Update the film "Spirit of Sapelo" for loan to schools and other groups. Show the film at Meridian Dock, rather than on the island.
RESPONSE: The current film does a good job of telling the story of Sapelo Island. It does not need updating for general circulation. There is too much light inside the visitors' center at Meridian Dock to show the film, and tour groups cannot be separated from other users of the center. The Education Coordinator and Reserve Manager will evaluate appropriate uses of the Meridian Dock facility.

RECOMMENDATION: Improve the exhibits at the Marine Institute.
RESPONSE: DNR will refer this recommendation to the Marine Institute.

RECOMMENDATION: Replace the interpretive center concept with that of a boat which operates on its own schedule to take visitors on tours of the estuary.
RESPONSE: A boat could not serve the multifaceted educational and interpretive objectives proposed for the interpretive center. The center will be designed for lectures, classroom activities,

reserve orientation and exhibits. A boat provides a different perspective of the estuary but does not replace the services provided at an interpretive center.

RECOMMENDATION: Leave the group campground at the Cabretta site.
RESPONSE: DNR will move the group campground into the Natural Area. The Cabretta site is more fragile and has no sanitary facilities. DNR staff must spend a great deal of time taking campers and drinking water to and from the Cabretta site.

The Natural Area contains sites which are near Nannygoat Beach but are also close enough to Marsh Landing dock that the campers can carry their own equipment. A site in the Natural Area will give campers easy access to the interpretive center and the nature trail. DNR will manage the camping program to protect research projects and the privacy of island residents.

HOG HAMMOCK COMMUNITY

RECOMMENDATION: Ask residents of the Hog Hammock Community for ideas about how the Community could be involved in the SINERR interpretive program, and decide which ideas it is feasible to carry out.
RESPONSE: DNR welcomes the involvement of the Hog Hammock Community and will seek their advice in the implementation of the interpretive program.

RECOMMENDATION: Identify and protect all significant cultural resources within the SINERR.
RESPONSE: DNR will do this, as stated in Appendix G of this plan.

RECOMMENDATION: Maintain the roads within the SINERR as required to give SINERR visitors and island residents acceptable access through the SINERR.
RESPONSE: DNR will do this in accordance with the Official Code of Georgia Annotated, Section 12-2-5, which grants the DNR the authority to provide these services as described in Appendix I of the management plan.

RECOMMENDATION: Inventory Afro-american cultural resources on Sapelo Island, nominate eligible resources for listing on the National Register of Historic Places, and give them protection. In particular:

(a) Protect the First African Baptist Church at Raccoon Bluff.
(b) Include the Masonic Lodge Hall in HHC.
(c) Document and preserve Afro-american folk culture and skills.
(d) Allow HHC residents to maintain and continue using Behavior Cemetery.

RESPONSE: DNR will inventory and protect cultural resources within the SINERR as stated in the SINERR plan. Cultural

resources outside the boundaries of the SINERR are outside the scope of SINERR management.

RECOMMENDATION: Keep roads within the HHC in good repair.
RESPONSE: DNR will maintain the roads within the HHC, under its authority to provide essential services to residents of certain coastal islands.

RECOMMENDATIONS: Prepare a management plan for the entire island, including HHC. Keep the HHC water system in good repair. Reestablish a grade school in HHC. Install and maintain street lights in the HHC at DNR's expense.
RESPONSE: Management of resources outside the boundaries of the SINERR is outside the scope of the SINERR plan.

RECOMMENDATION: Adjust the ferry schedule so HHC residents can commute to mainland jobs.
RESPONSE: The ferry chiefly provides daily access to Sapelo Island for those State employees who must work there but live on the mainland, and (under contract with McIntosh County) carries school children between Sapelo Island and the mainland. The present boat schedule balances the need for a normal work schedule on Sapelo Island with the need to minimize waiting time for school children at Meridian Dock and is therefore not appropriate to modify.

RECOMMENDATIONS: Provide scholarships and encouragement so that HHC residents can receive training in conservation fields. Tell HHC residents how a HHC resident can expedite moving a mobile home to Sapelo Island.
RESPONSE: DNR will seek participation of the HHC in the management of the Reserve. Information on DNR-sponsored training and employment opportunities is available from the SINERR offices. Moving mobile homes to the HHC is not appropriate to the estuarine research reserve plan.

RECOMMENDATION: Tell HHC residents how DNR will handle claims of private ownership on Sapelo Island.
RESPONSE: DNR will not address this issue in the SINERR plan. DNR informed HHC residents at a community meeting that it will be glad to consider acquiring any valid title on Sapelo Island.

MANAGEMENT PLAN

RECOMMENDATION: Hold meetings with residents of the HHC to receive their input regarding the SINERR plan and the nature trail.
RESPONSE: DNR will involve the residents of the HHC when preparing or revising plans for the SINERR.

RECOMMENDATION: Make minor corrections to the text of the plan:

a. Revise the organizational chart and appendices to say "SINERR" rather than "SINES".
b. Change p. 37 to show only <u>one</u> inoperative power plant.
c. Change pp. 38-39 description of the proposed use of the Main House to reflect the current situation.

RESPONSE: DNR will make these corrections.

RESOURCE MANAGEMENT

RECOMMENDATION: Acquire and protect the lighthouse tract.
RESPONSE: DNR will attempt to acquire the lighthouse tract if funds become available for land acquisition.

RECOMMENDATION: Stop timber harvest within the SINERR.
RESPONSE: DNR will continue to harvest timber within the SINERR in accordance with its forest management plan, developed in coordination with the Georgia Forestry Commission. This action is necessary to maintain forest health and will encourage succession to a climax forest community.

RECOMMENDATION: Identify and protect black gravesites as part of the cultural-resource management activities in the SINERR.
RESPONSE: DNR will do this as stated in the SINERR plan.

RECOMMENDATION: Include the SINERR as a unit of the Biosphere Reserve System.
RESPONSE: DNR will not include the SINERR as part of the Biosphere Reserve System. Such designation provides no additional protection to the site.

RECOMMENDATION: Include the SINERR under the provisions of the Coastal Barrier Resources Act of 1982.
RESPONSE: DNR will not include the SINERR under the provisions of the Coastal Barrier Resources Act.

RESEARCH AND MONITORING

RECOMMENDATION: Use timber harvest as an opportunity to monitor possible effects of the harvest on the estuary. Work with the Marine Institute and NOAA to establish a research project which will collect information on this subject.
RESPONSE: DNR will do this as stated in the SINERR plan.

RECOMMENDATION: Evaluate the feasibility of having commercial and recreational oyster harvest in the Duplin River.
RESPONSE: Recreational oyster harvest is already authorized in the Duplin River. DNR will not authorize commercial oyster harvest in the Duplin River. Adding commercial harvest in the Duplin River would compete with the limited recreational oyster

harvest in McIntosh County and could interfere with the SINERR's research and monitoring program.

Most oyster reefs in McIntosh County are controlled by private owners, who lease them to commercial harvesting operations. McIntosh County has a highly developed oyster industry, taking more oysters each year than the other five coastal counties combined.

Appendix L:

Operating Policy for Tours

SAPELO ISLAND NATIONAL ESTUARINE RESEARCH RESERVE

Operating Policy for Tours

May 15, 1990

I. Purpose

The purpose of holding tours in the Sapelo Island National Estuarine Research Reserve (SINERR) is to educate visitors about how estuaries work and what their values are. The objective of this education is to encourage good management of estuaries.

The Department of Natural Resources (DNR) wishes to make the most effective possible use of limited staff and other resources. DNR will emphasize educational tours for students and for persons such as teachers, journalists, and public officials who are responsible for managing estuarine resources. Such persons are called "multiplier audiences", because they can effectively share their knowledge of estuaries with other people.

The public tour program is an important part of the SINERR's educational program. It teaches members of the public about estuarine resources in ways which they are likely to remember. Tours for the public will be scheduled to balance the need for public access and education with the need to reach students and multiplier audiences.

II. Tour Schedule

The general schedule for tours of the SINERR will be as follows:

Sunday:	Maintenance, and tour staff days off
Monday:	Maintenance, and tour staff days off
Tuesday:	Tours for students and multiplier audiences
Wednesday:	Public tours
Thursday:	Tours for students and multiplier audiences
Friday:	Public tours, from the Friday before Memorial Day through the Friday before Labor Day. Tours for students and multiplier audiences, the rest of the year.
Saturday:	Public tours

III. Changes to Tour Schedule

DNR will reschedule a tour only when the tour conflicts unavoidably with other management needs. Typical situations include:

a. Public safety: when there is severe weather, or when managed deer hunts are occurring within the SINERR.

1

Each June, DNR will post dates upon which managed deer hunts will occur for the following hunting season and will notify the McIntosh County Chamber of Commerce of the dates at that time.

b. Equipment outage: maintenance or repair periods, when the ferry or on-island transportation is unavailable.

c. Personnel unavailability: periods when tour staff and certified guides are unavailable.

d. Priority tour scheduling: times when groups of students or multiplier audiences cannot be scheduled on a day which is normally reserved for their tours.

When DNR must reschedule a tour, it will take the following measures as soon as it knows a conflict is unavoidable:

a. If DNR scheduled the tour directly, DNR will notify the group. If the lead time is less than two weeks, DNR will notify the group first by telephone, then in writing.

b. If the McIntosh County Chamber of Commerce visitors' center scheduled the tour, DNR will notify the center. If the lead time is less than two weeks, DNR will notify the center first by telephone, then in writing. If a nearby date normally reserved for other tours is free, DNR may at its discretion offer the date to the Chamber to replace the tour which must be rescheduled.

c. DNR will make its own staff aware of any change in the tour schedule as required. DNR will also notify the office of the Director of the Marine Institute and the manager of the Hog Hammock Community Center.

d. DNR will post a notice of any tour rescheduling in plain view at the DNR office on Sapelo Island, at Marsh Landing dock, and at Meridian Dock.

IV. Approval

Approved this 15th day of May, 1990.

Leon Kirkland

Leon Kirkland
Director, Game and Fish Division
Department of Natural Resources

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