A SEMI-ANNOTATED BIBLIOGRAPHY OF BARRIER ISLAND STUDIES APPLICABLE TO GEORGIA BACK-BARRIER ISLANDS

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INTRODUCTION

This semi-annotated bibliography is a revision of the report “A Bibliography of Barrier Island Studies Applicable to Georgia Back-Barrier Islands”, submitted to the Georgia Coastal Zone Management Program in June 2004. The database is substantially the same as that of the earlier report, although several of the original references have been removed as not pertinent upon a more careful reading and several new references have been added. The annotated entries are intended only to provide enough information so that users can determine if a reference is pertinent to and worth acquiring for a given investigation.

The literature in this report is divided into four groups: Geology, Hydrology, Biology and Ecology/Miscellaneous. Copies or originals of most documents listed are held at the Georgia Southern University Applied Coastal Research Laboratory. The Georgia Southern University Library and Skidaway Institute Library house a few materials as indicated. We were not able to acquire a small number of potentially useful items that are denoted with an asterisk (*).

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Geology


Data collected from coastal South Carolina and Georgia on directional orientation of fracture sets was used to describe the regional contemporary stress field.
Sediment cores were taken on St. Catherines Island, Georgia in order to determine ages, environment at time of deposition, and correlation with other coastal and inland locations.

A collection of radiocarbon dates from several areas around Sapelo Island, Georgia. Locations are given descriptively and with latitude and longitude coordinates.

A discussion of the dynamics involved in coastal plain terrace formation including both terrestrial and marine processes.

An early report on coastal Georgia geology with information specifically regarding fossil remains discovered around Brunswick and Skidaway Island, Georgia.

Vibracores collected from back-barrier areas around Kiawah Island, South Carolina were used to describe the complex stratigraphy of the area. Specific data is presented related to depositional patterns and settings of the back-barrier environment.

The formation of Kiawah Island, South Carolina and the associated back-barrier environment is described from stratigraphic analysis of vibracore samples from around the island.

Unable to acquire


A literature review and evaluation of theories regarding the origin of Pleistocene features along the Atlantic Coastal Plain.


Biogenic sedimentary structure is described as it occurs in the various regions of Holocene barrier islands and the associated salt marsh area. Preservation of biogenic sedimentary structure may be maintained in the rock record of earlier environments.


Provides a comprehensive discussion of how sedimentary features and depositional environments are distributed along the Georgia coast.


A geologic guide for Cumberland Island, Georgia with descriptions of overall processes as well as detailed information about specific locations on the island.


The mean high water shoreline of Georgia was examined using a collection of historical topographic, hydrographic and orthophotographic maps and aerial photos. The study
identifies time periods during which the coast demonstrated erosion, progradation, as well as times of dynamic stability.


Barrier island and salt marsh lagoon sediments were collected from coastal Georgia to evaluate the ability of statistical parameters to discriminate among sedimentary environments with the goal of applying these techniques to the rock record.


Kiawah Island, South Carolina was evaluated prior to resort development for ecological features and coastal processes of the island to create a development model for barrier islands. Areas of the island designated as ecologically sensitive and areas designated as having a high risk of erosion were excluded from the development plan.


Holocene beach environments in Georgia and South Carolina are described in detail with specific features of interest identified for each island.


An exhaustive summary of the geology of the barrier island system in Georgia and South Carolina presented in a textbook format. Other barrier systems are treated in separate chapters and are available for comparison.

This paper discusses the barrier island, lagoon and marsh complex found along the U.S. east coast between Long Island, New York and Miami, Florida.


This paper provides a comprehensive overview of the geology of Chatham County, Georgia.


This field trip guidebook provides detailed information regarding the geology and physical processes associated with 11 locations around Jekyll Island, Georgia.


This field trip guidebook provides information about the geologic setting of coastal Georgia, and the physical processes affecting the coast. Specific information is presented for locations on Sapelo Island, Georgia.


Pleistocene deposits were examined from well cuttings taken in 28 coastal Georgia counties. The data describes a general dip in the deposit toward the coast with the thickest deposit found in southeastern Charlton and Camden counties.


Pleistocene age coastal terraces in Georgia were reviewed and examined with regard to the origin of these depositional features.

(24) Hippensteel, S.P. and R.E. Martin. 1999. Foraminifera as an indicator of overwash deposits, barrier island sediment supply and barrier island evolution: Folly Island,

Vibracores were taken from the back barrier marshes behind Folly Island, South Carolina to examine barrier island washover intervals. Foraminifera species found in the cores support the hypothesis that much of the sediment involved in barrier island migration comes from offshore.


This paper provides a detailed description of coastal depositional processes involved in Holocene coastline development in Georgia.


A collection of reprinted papers assembled for use as relevant background information about barrier islands in the form of a field trip guidebook for Sapelo Island, Georgia.


Coastal islands in Georgia were studied to describe the complex developmental history of the islands and associated depositional environments. Four ancient shorelines are described and discussed in terms of the major barrier island environments.


The islands along the Georgia coast provide excellent characteristics to study barrier island formation. Features and characteristics of these islands may be used to recognize ancient barrier islands in the geologic record.

Internal stratigraphy in modern beaches was described from trenches established on Sapelo Island, Georgia and compared with the internal stratigraphy from Pleistocene beaches.


Pleistocene and Holocene sediments were compared with shoreline morphology in coastal Georgia to describe six major Pleistocene shorelines below 100 feet in elevation.


Radiocarbon dating of shoreline sediments from coastal Georgia was used to correlate glacier development with sea-level position.


Describes and identifies several Pleistocene fossils found at back barrier locations in Coastal Georgia.


Ground penetrating radar is described as a new tool for stratigraphic studies of coastal barrier islands. Applications from several locations, including coastal Georgia, are described.
Core data was used to investigate and describe the detailed stratigraphy of Sapelo Island, Georgia.

Sediments obtained from vibracores around St. Catherines Island, Georgia were used to classify two distinct depositional systems: salt marsh tidal creeks and beach ridge complexes.

Pleistocene shorelines were examined in coastal Georgia and Florida for possible relationship with land pebble phosphate deposits of southern Florida. No relationship was found to support this claim.

This paper discusses paleontological analysis of sediments from Cape Fear, North Carolina to Cape Canaveral, Florida. Pliocene sediments from Georgia were found to produce very few fossils.

A detailed investigation of the Geology of Cumberland Island, Georgia with information on the fauna, lithology, and sedimentary structures of individual sedimentary formations.

A detailed study of the subsurface stratigraphy of Cumberland Island, Georgia for use in planning and applied management of the island.


Data from sediment cores taken on Kiawah and Seabrook Islands, South Carolina was analyzed to provide a model for Holocene barrier island growth.


A collection of radiocarbon dates from several areas around Sapelo Island, Georgia. Locations are given descriptively and with latitude and longitude coordinates.


Coastal morphology and vegetation patterns are described for Pleistocene and Holocene beach complexes in Georgia.


Shoreline change and subsidence on Sea Island, Georgia were studied to determine which factors were most significant. Excessive withdrawal of groundwater, erosion and accretion of shoreline, decreased sediment influx, sea level rise, and shifting longshore currents are the most important variables affecting the shoreline of the island.


Unable to acquire

The volume of reservoir quality sand was estimated from barrier islands, ebb tidal deltas, sand flats, tidal point bars, and tidal sand ridges along the South Carolina coast.


Sand dunes on St. Catherines Island, Georgia were monitored for 15 months in order to describe erosion and accretion patterns.


This study examines how vegetation and disturbance are related on two barrier islands: South Core Banks, North Carolina and Sapelo Island, Georgia.


Wave cut terraces and scarps around Old Island, South Carolina were used to show at least two higher than present Holocene sea level events.

(49) Sullivan, J.D. 1988. Late Pleistocene – Holocene Transgressive Barrier Island Sequence: Evidence for a Fluctuating Sea Level, Hilton Head Island Area, South Carolina. Masters Thesis. Georgia State University, Atlanta.

Stratigraphic analysis of Hilton Head Island, South Carolina supports other evidence suggesting sea level fluctuations over the past 7000 years.


Layers of dune and beach sand impregnated and cemented with organic material are discussed in terms of their formation processes.

A brief description of humate soil layers present throughout the coastal plain of the southeastern United States.


This study provides a detailed analysis of the components and formation of shell deposits near Wassaw and Cabbage Islands, Georgia.


Unable to acquire


Depositional processes involved with the concentration of heavy mineral were studied on Sapelo Island, Georgia. Moderate surf energy and aeolian processes were found to be the most efficient.


The southeastern coast between Winyah Bay, South Carolina and the Florida border were described and studied in terms of possible processes that may have formed the coastal islands. Islands along this area of the coast were characterized as either erosion remnant islands, marsh islands, or beach-ridge islands.

**Hydrology**


Wastewater treatment problems on South Carolina barrier islands are an increasing concern as coastal populations continue to grow. Fripp Island, Hunting Island, and Harbor Island are described and compared for various treatment techniques and for
wastewater disposal strategies. Several alternatives are discussed for disposal to be environmentally satisfactory.


A sediment core taken from a freshwater pond on St. Catherines Island, Georgia was examined in order to reconstruct the paleoecology of the wetland. The palynology of the core demonstrates that the site had experienced several depositional environments during its formation.


Unable to acquire


Groundwater problems associated with Atlantic coast barrier islands are discussed with case studies of specific locations and recommendations towards development.


Pre-development, recent, and future groundwater flow were modeled to simulate saltwater intrusion patterns on the north end of Hilton Head Island.


This paper discusses laboratory and field studies in which pesticide impact to coastal wetlands was assessed. Specific examples are provided from North Carolina, South Carolina, and Florida.

This detailed report describes the overall geology and hydrogeology of Coastal Georgia with detailed plates.


Unable to acquire


Wastewater treatment by septic systems on Atlantic coastal barrier islands was evaluated to determine the effects of water table height and wastewater loading rate to groundwater.


Physical testing and computer models were used to study fresh water lens formation on barrier islands. Permeability was found to be the most dominant control in fresh water lens formation.


Unable to acquire


Unable to acquire

This report summarizes the results of several studies conducted on Cumberland Island, Georgia investigating groundwater, surface water and ecological features in 1999 and 2000.


A test well was located on Colonels Island, Georgia to gather data about vertical groundwater flow patterns and quality. Increased pumpage of the principal artesian aquifer allows vertical migration of saltwater.


Tidal effect on artesian water wells was evaluated for several wells at different distances from tidal bodies of water. A formula was derived from this data to rapidly calculate tidal efficiency.


The interface between fresh and salt water beneath Hatteras Island, North Carolina was investigated in terms of the permeability of sediments at depth. Permeable sediments were found to contain less chloride than non-permeable sediments.


In order to determine how channel dredging may affect groundwater in the Pliocene-Miocene aquifer, 10 wells were installed at different cluster sites on Cumberland Island, Georgia. Data was collected from the Miocene sand aquifer, the Pliocene-Miocene
aquifer, and the surficial aquifer. Analysis of data suggest that saltwater intrusion into the Pliocene-Miocene aquifer was not significant.


To gain a more accurate understanding of the hydrogeology of coastal Georgia a test well was placed on Colonels Island, GA. This report provides information regarding the well logs and geochemistry of the water samples.


This article discusses a progressive wastewater management program in use on Dewees Island, South Carolina.


Baseline data on depth and 14 water chemistry characteristics was collected over a 5 year period for 3 interdunal ponds on Cumberland Island, Georgia. This study allows for seasonal as well as annual fluctuations in the ponds ecology to be considered.


This report discusses the impact on water levels at locations around Liberty and McIntosh counties as a result of increased pumping near Riceboro, Georgia.


This report provides a comprehensive overview of Floridan aquifer characteristics in Georgia, Florida, and South Carolina.
Capture zone delineation for coastal wells was estimated using a combination of models designed to evaluate groundwater flow. Both analytical and numeric models indicate the current 100 foot radius of protection around a well underestimates the groundwater capture zone.

Measurements taken during this study and others found radiocarbon and $\delta^{13}C$ values varied among different locations on Hilton Head Island, South Carolina. The differences suggest these types of data may be useful indicators of groundwater mixing from different sources and for determining recharge-discharge patterns.

A test well was installed to evaluate the potential of the Cretaceous aquifer beneath Hilton Head Island, South Carolina as a groundwater source. Results from the test showed the water to be non-potable.

The Pliocene-Miocene confined aquifer beneath the southern end of Cumberland Island, Georgia was investigated for saltwater intrusion. Measurements of hydraulic head were taken every half hour for 3 days in order to construct potentiometric maps displaying groundwater flow orientation at various times of the tidal cycle. The dominant direction of flow to the west appears to serve as a barrier to saltwater intrusion.

A National Park Service report presenting data from a Masters thesis focused on salt-water intrusion (see entry #81).
A monitored watershed on a South Carolina barrier island was used to collect data regarding the relationship between surface water and groundwater.

Groundwater patterns were examined and modeled for coastal barrier islands with a width less than 1 kilometer. These islands exhibit dynamics which differ from typical scenarios.

Young barrier island marshes were studied at two locations: Hog Island, Virginia, and Pritchards Island, South Carolina, for characteristics of hydrology and nutrient export using flux of water, ammonium and phosphate.

Several test wells were located on Hilton Head Island, South Carolina to determine how salt water intrusion may affect drinking water wells on the island. Test wells were nested with individual wells monitoring the upper and lower Floridan aquifer, the surficial aquifer and the Hawthorn formation. Studies include the evaluation of porosity and investigate inter-relationships between the various aquifers.

A model was created to evaluate hypothetical scenarios of increased and decreased pumping activity in and around Brunswick, Georgia. Increased withdrawal in areas near Brunswick, Georgia would result in a water-level decline in the city. A slight increase in
water-level was predicted when there was a decrease in public pumping supply in Brunswick.


This article provides a historical summary of existing and ongoing work dealing with the numerical analysis of saltwater-freshwater interactions. Specific discussion is presented dealing with the simplifications and assumptions necessary for analysis of these complex interactions.


Several factors were investigated which may have influence on the particular shape of the freshwater lens beneath St. Georgia Island, Florida. A combination of site specific physical factors is the most likely cause for the asymmetrical shape of the freshwater lens. Results from this study demonstrate the need for caution when making assumptions about freshwater beneath barrier islands.


Several methods of testing were applied to determine hydraulic parameters at the upland-estuary interface on Sapelo Island, Georgia. Results showed a significant difference in hydraulic conductivity on either side of this boundary.


Tidal fluctuations are shown to influence the hydraulic magnitude and gradient in a confined aquifer in Atlantic City, New Jersey. Methods for calculating the mean hydraulic gradient in these environments are presented.

Data were collected and interpreted regarding the geology and hydrogeology around Parris Island, South Carolina to supply basic water records for later studies.


A 14-acre wastewater disposal site on Hilton Head Island, South Carolina was studied to collect data on water level and quality of the surficial aquifer.


A test well on Hilton Head Island, South Carolina was drilled to evaluate the usefulness of the Upper Cretaceous as a possible groundwater source. A suite of petroleum-industry based logging and sampling techniques were used for analyses to reduce the expense of conventional coring, and flow testing of the well. Results of the testing found water quality to be higher than expected.


The hydrology of barrier islands is modeled to include salt water head variation across the upland of the island.


This paper discusses the dynamics of fresh and salt water within coastal aquifers. Specific examples are presented from locations in North Carolina, South Carolina, Georgia, and Florida.


A detailed report discussing groundwater conditions at specific well locations throughout Southeast Georgia.
Unable to acquire


Water chemistry was sampled and analyzed on Cumberland Island, Georgia to understand the mixing dynamics of the confined aquifer with salt water.

**Biology**


This study presents data on vegetation inventory and quantity for 11 back-barrier islands near Sapelo Island, Georgia. Vegetation surveys were conducted to evaluate the mean species richness for 4 size categories of islands. Data suggests a positive relationship between island area and vascular plant diversity.


Small mammals were captured on Bulls Island, South Carolina to evaluate abundance and habitat use. Habitats sampled included, fore and rear sand dunes, salt spray forest, maritime live oak forest, freshwater marsh, salt marsh, old-field, and residential. 4 species of mammals were collected during the study. A relative abundance value is presented to reflect the degree to which a species uses a particular habitat.


Prey species for reintroduced bobcats on Cumberland Island, Georgia were evaluated for abundance and selection 3 times per year during a 2-year study. Several hypotheses were
examined with data collected from various habitats on the island. The results suggest diet optimization and functional responses are the most useful models for describing bobcat-prey relationships.


A decline in White Ibis (Eudocimus albus) populations at two South Carolina nesting locations, Drum Island and Pumpkinseed Island, from 1984 to 1985 was evaluated with respect to climate patterns and available prey. 1984 was a very wet year and 1985 a dry year. Declines in nesting numbers and hatching success were related to reduced freshwater wetlands and the associated reduction of crayfish for the ibises diet.


This paper describes three new species of eriophyid mites collected on two back barrier coastal islands, in Georgia. Most mites were found on Wilmington Island, a residential suburb of Savannah, Georgia with a large variety of introduced non-native vegetation. Very few plant-feeding mites were found on McQueens Island perhaps due to the type of vegetation present or phase of faunal development.


Unable to acquire


The vegetation history of Fort Frederica is examined with regard to aboriginal and colonial use of the land, examining how human disturbance has affected the current vegetation structure.

Unable to acquire


Live oak, laurel oak, and red bay trees were assessed for post burn survivorship following three natural fires on Cumberland Island, Georgia. Amount of crown scorch for oaks and degree of basal scorch for red bay trees were used as indicators for mortality rates. Data indicates that prescribed fire would probably have little effect on forest structure.


Unable to acquire


Data was obtained on prey selection of five species of bats with fecal samples of 132 individuals. Four orders of insects dominated the diet of these bats: Coleoptera, Hymenoptera, Lepidoptera, and Hemiptera. All five bat species exhibited significant selection for and against certain insect orders.


Kiawah Island, South Carolina was studied for 13 months to document the status and distribution of bird life on the island. Detailed information is provided for each species observed including behavior traits and preferred habitats.

This study documents avian density in maritime forest on two South Carolina barrier islands. Capers Island experiences light recreational use and Kiawah Island experiences greater developmental pressure and recreational use. Transects crossed each island through a variety of habitats and were sampled bi-weekly between March and September.


This early report identifies the vegetation present on the Isle of Palm, South Carolina. Vegetation is grouped into several habitat categories: upper beach, dunes, fresh marsh, forest, hammocks, salt flats and marshes.


Using point count surveys small and large maritime hammocks in northeastern Florida were studied to evaluate use of habitat by migrating, resident, and over-wintering birds. Large hammocks exhibited the greatest species richness and many species showed preference for either large or small hammocks. The forested areas of large hammocks appears to be important habitat for migrating warbler species.


This study provides data regarding mercury and cesium-137 levels in raccoons sampled from 4 southeastern locations.


Patterns of response and re-growth were monitored following a natural fire on Cumberland Island, Georgia. The proportion of most species post-fire growth resembled that of pre-fire composition within 2 years.

Vegetation surveys and soil samples were surveyed for 2 years following a fire on Cumberland Island, Georgia. Data was compared with measurements taken from unburned, old burn, and prescribed burn locations. Mature hardwood species were little affected by the fire. Mature pine species exhibited high mortality rates. All species of scrub vegetation was present among the regrowth.

(118) Duncan, W.H. 1982. The Vascular Vegetation of Sapelo Island, Georgia. Botany Department, University of Georgia and Georgia Department of Natural Resources, Atlanta. 75 pp.

This study provides information about the vegetation types and species occurring on Sapelo Island, Georgia.


Barrier island vegetation is examined with regard to the complex environmental conditions of maritime forests. Emphasis is placed on the ways barrier island vegetation responds to abiotic and biotic factor interaction.


Although not specific to southeast coast, this paper recommends relevant management strategies for osprey habitat.


Biological surveys of marshland hammock islands in Georgia were conducted between October 2001 and September 2002. Data was collected pertaining to habitat use by various species of plants and animals. Small hammocks were found to support a wide diversity of plants and animals.

Survey techniques and protocols are described for estimating deer herd size through driving and spotlighting animals. The survey involves a driver and two observers who attempt to identify deer by age class and sex. Combining spotlight survey data with data from managed hunts will improve information for deer herd management decisions.


This article presents data regarding cloudless sulphur migration patterns along the South Carolina coast. The preferred area of travel appears to be over saltmarsh just inland of the barrier islands.


Wood stork habitat use and breeding success was examined at 3 coastal Georgia locations for 1 dry season and 2 normal rainfall years. During the dry season wood storks used estuarine habitats much more than freshwater habitats for foraging. The dry season breeding success was found to be less than half of a normal rainfall year.

(125) Griffin, J.C. 2001. Bobcat ecology on developed and less-developed portions of Kiawah island, South Carolina. Masters Thesis (Abstract), University of Georgia, Athens.

14 radio-collared bobcats were monitored for several attributes on Kiawah Island, South Carolina. The attributes were compared between bobcats that used the developed portion of the island versus the bobcats that used the undeveloped portion of the island. Bobcats in the developed portion of the island were found to have larger home and core range sizes, and increased movement rates.


This study documents the maritime forest of Bull Island, South Carolina. Permanent plots were created in pine stands, and oak/tallow stands. Measurements were taken for three classes, overstory, understory, and herbaceous layer strata.

Unable to acquire


An inventory of woody species of flora identified in the Charleston, South Carolina area have been grouped and listed as to the habitat type where they were located.


Unable to acquire


Tree cores were collected from Loblolly pine trees at coastal locations in Virginia, North Carolina, and South Carolina to compare growth ring width with storm occurrence. Association was observed in all sites of ring width and coastal storms, as well as increased ring width with lower latitudes. Assessment of tree ring width may be useful in evaluating storm impact to barrier island plant communities.


Several species of birds were mist-netted during fall migration on Jekyll Island, Georgia and Fort Morgan, Alabama. Tick infestations were found to be concentrated among specific species at both locations. Efforts to identify the primary agent for Lyme borreliosis among Ixodes species were unsuccessful.


Statistical analyses were performed comparing the Cumberland Island Pocket Gopher with 5 mainland species of pocket gophers. Results indicate coastal inland populations
are more similar to the Cumberland Island Pocket Gopher than to more inland populations.


Unable to acquire


Lake Whitney on Cumberland Island, Georgia was used to investigate the characteristics, succession patterns, and long-term stability of freshwater wetlands on barrier islands. Aerial photographs were used with a GIS for the construction of historic vegetation maps and spatial analysis of vegetation.


Cotton mice from Sapelo Island, Georgia were included in a study comparing samples from other regions to test for antibodies to Human Granulocytic Ehrlichiae (HGE). Tests may indicate endemic areas for the presence of HGE.


A brief description of collected species of herpetofauna found on Sapelo Island, Georgia. Collection includes 38 species of reptiles and amphibians.


Avian species richness and abundance data was collected from several naturally occurring maritime forest patches of various sizes. Collected measurements were compared with similar measurements from a large contiguous maritime forest. Patch size
was found to be a significant factor in both species richness and abundance of breeding
birds in this environment.

Seashore. University of Georgia Institute of Ecology. National Park Service,

Historical and recent aerial photographs, vegetation and soil descriptions, as well as soil
fertility measurements were interpreted to determine the role of disturbance in controlling
boundary environments on Cumberland Island, Georgia. Disturbance was found to be a
minor factor in the community dynamics, suggesting that wildfires in scrub and marsh
environments should not be suppressed.

(139) *Menzel, M.A., T.C. Carter and D.M. Krishon. 1995. Roosting, foraging and
habitat use by bats of Sapelo Island, Georgia. Final Report to the Georgia
Nongame Wildlife Program, Georgia Department of Natural Resources.

Unable to acquire


The Georgia coast east of Interstate 95 was searched for locations of heronries. Twenty-
five active sites were located and mapped. Data on species composition, approximate
abundance, stages of reproduction, nesting habitats, disturbance and colony size were
collected from site visits.


This paper documents the presence of a Wood Storks nesting colony in Camden County,
Georgia.

Coast colonies, 1975 and 1976. United States Fish and Wildlife Service
FWS/OBS-77/08.

This atlas provides maps and species information about 291 colonies of egrets, and
herons along the Atlantic United States Coast.

habitats around Cumberland Island, Georgia. Colonial Waterbirds, 15:33-42.
Data from wetland inventory maps was used in a geographic information system to classify feeding and roosting locations of wood storks on Cumberland Island, Georgia. The area near wood stork locations displayed differences in patch size and habitat diversity for both fresh and salt water wetlands. Habitat use by wood storks was found to be influenced by landscape level differences.


A reduction of the feral swine population on Cumberland Island, Georgia provided opportunity to collect data about species of the helminth communities present among the host population and compare with previously acquired data. 20 male and 28 female feral swine were collected between October 1984 and June 1986. This study recovered 9 species of helminthes.


Wax myrtle trees were evaluated for nitrogen fixation qualities as a possible alternative for biological forest fertilization. Experiments were conducted in a slash pine plantation near Gainesville, FL. Result indicate that wax myrtle significantly contributes to the nutrient cycle of forest soil by increasing nitrogen fixation.


Amphibians and reptiles were collected and identified from The Isle of Palms, South Carolina. Island Specimens were compared with mainland specimens to determine if there were differences between the populations.


Vegetation communities were identified and inventoried on 5 barrier islands and 1 mainland location in South Carolina. Site locations were relatively undisturbed and without significant development. Transect and quadrat sampling methods were used for data collection.
Five South Carolina islands and one mainland location were sampled for closed dune vegetation. Using transect and quadrat methods on the islands data was collected on vegetation type and vegetation community.

Vegetation was compared between two developed and two undeveloped Georgia barrier islands. Human disturbance was found to have a significant effect on the distribution of alien plant species.

Wood stork nesting was documented and observed between the years 1985 and 1987 on Cumberland Island, Georgia. Data is provided on nesting behavior and nesting success.

This study identifies species of mammals that were trapped or observed between June 1974 and May 1975 among the various habitats of Kiawah Island, South Carolina.

Diets of rice rats collected from Georgia saltmarshes were compared with laboratory reared animals to examine what portion of their diet was composed of animal food and what portion was composed of plant food. The study found a dominance of animal food in rats collected in the summer and fall. Conclusions indicate that rice rats serve as carnivores in saltmarsh ecosystems during the summer season.

This study looks at the changes in nesting bird activity before and after the 1989 Hurricane Hugo event in coastal South Carolina. The 1990 breeding season saw decreases in nesting numbers for Great Egrets and Tri-colored Herons but very little change in nesting numbers for Snow Egrets or Glossy Ibises. Most notably there was a dramatic change in nesting numbers of White Ibis from 10,000 pair in 1989 to 0 nesting pair in 1990.


This study examines the role large alligators play in the structure of their ecological community. Observations made on Cumberland Island, Georgia showed regular predation on deer and other mammals.


Permanent vegetation plots on Bull Island, South Carolina were studied following Hurricane Hugo. Investigation of succession patterns associated with this large disturbance show Live Oak tree structure changed very little while Loblolly Pine and Chinese Tallow were significantly impacted.


Vegetation on St.Catherine’s Island was examined and classified into 6 different physiognomic types. Area was calculated for each vegetation type, grasslands (8,032 acres), savanna (399 acres), scrub (245 acres), forest (5,537 acres), herbland (8 acres), and aquatics (18 acres). Species occurrence and abundance is discussed for each region of the island.


This study looks at the biogeographic interactions of landforms, geomorphic processes, and vegetation distributions on barrier islands. Data was collected from two islands with different soil properties and geomorphic processes. Soil variance structure was found to be a useful identifier of the influence landforms have on vegetation patterns.

This paper is a list of the specific species of flora identified and collected from Huntington Beach State Park, South Carolina.


This paper is a list of the specific species of flora identified and collected from Outer Otter Island, South Carolina.


This paper is a list of the specific species of flora identified and collected from Turtle Island, South Carolina.


Vegetation was sampled in 5 zones of coastal dunes in order to determine the dominant species in each zone.


Species of flora identified from surveys on 12 barrier islands in South Carolina are listed with identification of important habitats found on these islands.


Quadrats were established to identify and document the vegetation types and species found on Little Talbot Island State Park, Florida. Live oak trees were the dominant canopy tree species and red bay trees were the dominant subcanopy species. Vegetation patterns here are thought to be similar to those found on other coastal islands of the Southeast.
Bull Island, South Carolina was categorized into 3 major plant communities, salt marsh, oak forest, and sand dune, as well as 2 minor communities, freshwater marsh and scrub. Species of vegetation in each community was documented.

Woody fuel biomass was measured and evaluated for several sites on Cumberland Island National Seashore. Fuel loads were measured as one-hour, ten-hour, one hundred-hour, and thousand-hour estimates. Highest fuel loads were found in 5-year old regrowth forests and lowest fuel loads were found in 1-year old regrowth forests.

This study describes the investigation of two periods of oak decline along the South Carolina coast in the early 1980’s. Drought was considered the primary climatic trigger for oak mortality. The species most effected were red oaks.

This study examines the response of 5 species of vegetation found in barrier island swale habitat to fresh and salt water flooding. Of the vegetation sampled only Baccharis halimifolia was significantly affected by freshwater flooding. Saltwater flooding had variable affects on all vegetation at low, mid-range, and high salinity levels.
Data was collected from Cumberland Island, Georgia indicating the island had burned several times in the 20th century. Fire rotations were related to drought cycles, and lightning is likely the cause of ignition. This fire rotation may have influence on typical vegetation succession patterns.


Historic land use and climatic factors were examined to determine historic fire patterns on Cumberland Island, Georgia. Fire rotation for susceptible communities was estimated at 20 to 30 year cycles correlating with regional drought cycles.


Using fire and grazing as disturbance examples 3 conceptual hypotheses are discussed relating to the ways large scale landscape heterogeneity may influence disturbance patterns.


Unable to acquire


Unable to acquire


Lone star tick samples were collected from Sapelo Island, St. Catherines Island, and Fort McAllister, Georgia to test for the prevalence of Ehrlichia chaffeensis. The Sapelo
samples showed infection prevalence was 0.0%, St. Catherines samples showed infection prevalence was 0.9%, and Ft. McAllister samples showed an infection prevalence of 9.3%. Geographic isolation, human disturbance, and availability of suitable host species may all be factors influencing infection prevalence.


Three species of small shrubs found on coastal barrier islands at the saltmarsh-upland boundary were examined for distribution patterns related to salinity. Groundwater salinity and soil chlorides both showed considerable spatial and seasonal variation.


This checklist provides a detailed inventory of the flora and fauna found along South Carolina’s coast.


Unable to acquire

**Ecology and Miscellaneous**


Unable to acquire


The maritime forest community is described as occurring on barrier islands and adjacent mainland from North Carolina to Florida. This publication serves as a synopsis of
existing literature aimed towards understanding the unique character of maritime forest ecology. These habitats are described with regard to geology, flora, fauna, and management needs.


Various methods were assessed for removal of exotic tung trees. This report provides data on the survivorship percentage of each of the methods for different sized trees. Hand pulling was found to be most effective for small plants, and prescribed fire with subsequent hand pulling and girdling for larger stands.


A detailed compilation of research in 13 scientific disciplines was conducted on Kiawah Island, South Carolina to inventory the environmental characteristics of the island and examine relationships among the different ecosystems.


Unable to acquire


A comprehensive book describing the physical setting and processes, particularly erosion from hurricanes, storms and waves, affecting each of the barrier islands of Georgia.


Estuaries from North Carolina through Florida along the South Atlantic coast are classified into broad descriptive categories based on structure and composition. The status of these estuaries is discussed with respect to climate, productivity, natural phenomena, and human habitation.
Rising sea level is expected to have an impact on the available habitat for many threatened and endangered species of plants and animals. This paper examines the impact at the regional, state and local scale.


This article describes fire effects on Cumberland Island, Georgia and how fire management can be an important component of the resource management plan on the island.


An archeological survey was conducted in 1974 on 1500 acres of Skidaway Island, Georgia prior to development of the property. Over 100 archeological sites were located, nineteen test pits were excavated, and several sites were mapped.


Prehistoric sites surrounding and associated with Wassaw Island National Wildlife Refuge and Blackbeard Island National Wildlife Refuge were described and characterized in order to determine rates of shoreline progradation. This report provides maps with preliminary lines representing approximate placement of shoreline between 4500 years B.P. and 100 years B.P.

A detailed account of the pre-historic occupation patterns along the Georgia coast. Information is presented describing the natural setting of the coast as well as site descriptions from islands of various ages.


A comprehensive summary of Indian use and occupation along the Georgia coast based on geologic and archaeological evidence.


Archeological sites along the Georgia coast and the associated pottery found in those sites is used to suggest a regression in mean sea level at approximately 3000 years before present.


Development pressure along the southeast coastal mainland is instigating a change from traditional forestry and agricultural uses to non-traditional recreational and residential uses. This study examines the consequences of three scenarios of coastal development.


Cumberland Island was divided into 4 sections and surveyed to determine the size and structure of the feral horse population. The survey consisted of both ground and aerial observations. At the time of the survey the horse population was calculated to be at least 181 animals operating in 55 herds.
This report describes many aspects of the natural and cultural history of Wassaw Island, Georgia. Information is provided regarding landscape and vegetation characteristics as well as some of the implications of development on the island.

This report presents the work of the marsh hammocks advisory council. Topics discussed include definition of a marsh hammock, maps of hammocks, importance of hammocks for wildlife, development concerns, and research recommendations.

The management plan for Ossabaw Island, Georgia provides detailed descriptions of the managing departments and entities, descriptions and policies for the historical and natural resources, and management criteria for people and infrastructure.

This study provides data regarding aspects of the surficial aquifer on Sapelo Island, Georgia. Collection of data included monitoring wells and several geophysical techniques. Aspects of the study look at interactions of tidal creeks with the surficial aquifer, tidal pumping, freshwater input to the estuary, and salt water infiltration adjacent to the creek banks.

Barrier islands along the east coast of the United States are described focusing on similarities and differences in their ecological characteristics.
As a possible model for barrier island development, Kiawah Island, South Carolina was evaluated pre-development for the ecological features and coastal processes of the island. Areas of the island designated as ecologically sensitive and areas designated as having a high risk of erosion were excluded from the development plan.

The ecology of Cumberland Island, Georgia is described in a comprehensive text summarizing several research projects.

Prior to the development of Amelia Island, Florida detailed investigations were conducted by natural scientists to provide guidelines and recommendations for the application of sound ecological principles for this specific site.

The ecology of the Georgia and South Carolina coast are presented in a comprehensive format examining features over a wide range of scales.
The horse population of Cumberland Island was monitored to determine seasonal differences in diet and habitat preferences. Salt marsh and lawn areas were most heavily utilized during the spring, summer, and fall seasons. During winter months the horses used grasslands and inter-dune meadows.

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Ecosystems around the country were reviewed and assessed for their environmental status. This analysis identified 30 ecosystems as critically endangered, 58 as endangered, and over 38 as threatened ecosystems. Conservation strategies are suggested for various eco-regions around the United States.

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A detailed description of the individual ecosystems associated with the Georgia and South Carolina coast. Ecosystem processes are described as well as species inventories for specific locations.

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A final report summarizing the results of ecological studies on Amelia Island, Florida.


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Coastal environments of Georgia barrier islands are described in this survey of the natural communities and regions of Georgia.


Small scale residential development on Little Cumberland Island, Georgia was evaluated to determine the associated environmental impacts. Analysis of vegetation through aerial photographs indicate very little disturbance associated with residential development.


The structure and function of the maritime forest community is considered with regard to development and planning management of barrier islands. Specific locations are presented as case studies of potential land management alternatives for barrier island developments.