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NATIONAL WETLANDS INVENTORY  
MAP REPORT FOR THE  
NORTH CAROLINA/SOUTH CAROLINA BORDER PROJECT

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## I. INTRODUCTION

The United States Fish and Wildlife Service's National Wetlands Inventory (NWI) is producing maps showing the location and classification of wetlands and deepwater habitats of the United States. Classification of Wetlands and Deepwater Habitats of the United States by Cowardin et al. (1979) is the document used by the NWI to define and classify wetlands. Photo interpretation conventions, hydric soils lists and wetland plant lists are also used to implement the Cowardin classification system.

The purpose of this map report is to: (1) provide information on the production of NWI maps, including narrative on imagery and interpretation; (2) descriptively correlate NWI wetland codes on the map to common terminology of representative plant species found on specific wetland sites; (3) describe local geography, climate, and wetland communities; and (4) provide information on the classification of upland areas utilizing the South Carolina Land Use and Land Cover Classification System by Anderson et al (1976).

## II. FIELD RECONNAISSANCE

Field reconnaissance is a necessary procedure in order to accurately interpret aerial photography. Photographic signatures are correlated to the wetland habitat in the field. Collateral information including vegetative communities, soil types and topographic settings are further evaluated to aid in the photointerpretation process. This information is evaluated for seasonality and conditions existing at the time of photography and during ground truthing.

### Project Area

The major portion of the project area is located along the state border shared between the states of South Carolina and North Carolina. (See Locator Map - Appendix A) One map (Bethune, S.C.) is located in northeastern South Carolina. Reconnaissance was conducted in each of the maps in the task order.

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Field Personnel

Charlie Storrs - U.S. Fish and Wildlife Service  
Michael Woods - Geonex, Inc.  
Scott Fears - Geonex, Inc.

Field Dates

November 28 to December 2, 1994

Aerial Photography

Scale: 1:40,000  
Primary Source Data: NAPP (100%)  
Type: High Altitude, Color Infra-red

Charlotte SW: 3/89, 2/91  
Knoxville SE: 3/89, 2/90, 3/90  
Spartanburg SE: 2/89, 3/89

Scale: 1:58,000  
Primary Source Data: HAP (100%)  
Type: High Altitude, Color Infra-red

Spartanburg NE: 1/83, 3/83, 2/84

Percentage of Coverage: 15 USGS quadrangles were covered with the NAPP photography. 6 USGS quadrangles were covered by HAP photography.

Collateral Data

United States Geological Survey (USGS) 1:24,000 Quadrangles  
Soil Conservation Service Soil Surveys (Counties of Kershaw, York)  
Bailey's Description of the Ecoregions of the United States  
National List of Plant Species That Occur In Wetlands: Southeast (Region IV)  
Groundwater Hydrology by David Keith Todd  
The Nature and Property of Soils by Nyle C. Brady  
Palustrine Forested Wetlands of the Southeast  
Wetlands by William A. Niering  
Eastern Forests by Ann Surton and Myron Surton  
A Land Use and Land Cover Classification System for Use with Remote Sensor Data by James R. Anderson et al  
Hydric Soils of the United States- Soil Conservation Service

### III. PHYSICAL DESCRIPTION OF PROJECT AREA

#### Geography

The project area falls within the Subtropical Division of the Humid Temperate Domain and contains the Southeastern Mixed Forest Province according to Bailey (1980).

The Bethune, SC quad of the project area is on the irregular Atlantic Coastal Plain and extends into the southern edge of the Piedmont. The Sand Hills occur on the western edge of the Atlantic Coastal Plain and have many strong flowing perennial streams with numerous springs fed by high groundwater tables. This is a transitional region with saturated wetlands and Carolina bays. On the Atlantic Coastal Plain there are many unique elliptical depressions called Carolina Bays. These depressional landforms are normally aligned northwest to southeast with sandy rims surrounding basins that are usually wet year round. The Carolina Bays, or pocosins, developed as the Atlantic Ocean receded and freshwater lakes formed along the coast. Gradually they have become filled with peat and given rise to a unique wetland community.

The remainder of the maps in the project area fall within the Piedmont. The Piedmont is the least mountainous area of the Appalachian Uplifts. It is characterized by rolling hills of granite, gneiss and other durable rocks and by its dendritic drainage pattern with narrow flood plains. Stream elevations are approximately 200' above sea level while the ridgetops vary up to 500'. The rolling topography promotes natural erosion.

#### Climate

The climate is generally subtropical, having long, humid summers and short mild winters. Precipitation, (averaging 48"-52"), occurs throughout the entire year with the most precipitation occurring during July and August. The smallest amount of precipitation occurs during the period of October thru December. Frost dates generally occur between November 10 to March 15.

### Vegetation

Original vegetation was composed of oak-hickory hardwood forests and pine forests. Moreover, most of the original forested land was cut by the timber industry before 1900. Presently, the dominant vegetation is commercially managed loblolly, longleaf, slash and pond pine forests and the naturally occurring black gum-sweetgum-tulip poplar forest of the floodplain.

The southern bottomland hardwood swamps, such as the Congaree, have many pockets of seasonally flooded vegetation with giant gums, bald cypress, water tupelo, oaks and loblolly pines. These trees were not harvested for various reasons and were able to reach their upper growth limits, often ranging from 100-150' tall and up to 6' in diameter.

The southern pinelands are a mixture of longleaf pine and scrub, turkey and blackjack oaks. These forests are sometimes temporarily flooded and often managed by natural and controlled fires. The pines are well-suited to this environment, being well insulated and surviving all but the hottest forest fires. These beneficial fires remove undesirable underbrush, release much needed nutrients into the soil and stimulate forest regeneration.

Bays are sometimes saturated, seasonally or semi-permanently flooded wetland communities that may contain bald cypress, water tupelo, pond pine, loblolly pine, red bay and sweet bay trees. The understory may be composed of several types of evergreen shrubs, such as fetterbush, wax myrtle and titi.

### Soils

The Coastal Plain is composed primarily of loosely consolidated sediment, of both marine and terrestrial origin formed during the Cretaceous period over 130 million years ago. It is characterized by terraces laid down by streams bringing sediment from the interior of the continent and ancient marine intrusions. The coastal plain is level and rolling, covered with sand, silt, gravel and other materials from stream erosion. Marine sediments are deposited with coarse sediments close to the shore and fine particles at a distance inland from the shore. These remnant sands and clays can be detected many miles inland as remains of the ancient marine coastline. Silica content is very high and soils are severely leached and eroded during times of heavy rainfall. The coastal plain contains extensive and productive aquifers.

The Sand Hills of the Coastal Plain are composed primarily of sediments of the unconsolidated Tuscaloosa marine deposits of light colored sands, gravels and kaolin clay. These soils,

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Podzolic and Laterites, are residuals of the parental Udults, typically having low organic content and formed in a temperate and moist climate with gentle to moderate slopes (10-25%). These soils are often found in woodland areas, pasture lands and in fields used for feed crops, tobacco and cotton plantations. These soils are typically called tropical woodland soils.

The Piedmont section of the continent is composed of crystalline rocks and has been uplifted, folded and broken many times to form the Carolina slate belt of Cambrian age. This formation actually consists mostly of shales, granitic pegmatite and schist (not true slates). The most common rock in this area is argillite. Argillite is composed mainly of clay and is less indurated than shale. Red and yellow colors are characteristic of these rocks when weathering has been intense. This area is dominated by upland soils, used mainly for pasture and woodland. These soils are on medium to broad ridges and side slopes adjacent to drainage ways of the Piedmont. Most have a loamy surface with a clayey or loamy subsoil.

The following list of hydric soils is representative of some of the major wetland soils in the project area:

<u>HYDRIC SOIL</u>	<u>COMMON WETLAND CLASSIFICATIONS</u>
Chewlaca	PFO1A
Coxville	PEM1Fd
Donovan	PEM1Fh, PFO4Bg
Elbert	PEM1C, PFO1A
Fuquay	PFO1A
Iredell	PFO1A, PFO1C
Wehadkee	PEM1A, PFO1B, PSSIF

#### IV. DESCRIPTION OF WETLAND HABITATS

##### Marine

There are no marine environments in the project area.

##### Estuarine

There are no estuarine environments in the project area.

##### Riverine

The major drainage basins within the study area are the Broad and Saluda Rivers. They are perennial rivers and will be classified as R2UBH.

The smaller intermittent rivers and creeks found in the rolling hills will be classed R4SBA or R4SBC.

##### Lacustrine

There are no naturally occurring bodies of water greater than 20 acres in the project area. All impounded rivers or streams that cover more than 20 square acres will be classified as L1UBHh. Most of these freshwater lakes are limnetic deepwater habitats. Nonvegetated, shallow littoral areas located adjacent to these reservoirs will be classified as L2USAh or L2USCh according to signature.

##### Palustrine

This classification system is used for the majority of wetlands occurring in the project area.

The following wetland habitats were encountered during the field reconnaissance of the area.

Temporary wetland forest communities ("A" water regime) can occur on natural terraces behind the banks of rivers and may be dominated by a hardwood mixture of sweetgum, water oak, tulip poplar and red maple or by pine plantations of loblolly or longleaf pine. The temporarily wet hardwood forests may have a thick understory of small shrubs and ferns. The pine forests may have a thick understory of scrubby oaks, hollies and herbaceous plants. Common trees in the "A" water regime include the red maple, willow oak, tulip poplar, water oak, sweet gum, loblolly and other pines.

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Saturated forested wetlands ("B" water regime) are common in such areas as the Carolina bays (pocosins), seepage slopes and drainage features in the Sand Hills region, but are less common in the Piedmont area. Common species in the PF01B community include the red maple, black gum, tulip poplar, red bay, and sweet gum. Occasionally, Atlantic white cedar can be found in the saturated area and is classified as PF04Bg, with "g" representing the organic soil modifier. Understory plants may include red bay, sweet bay, sweet pepperbush, American holly, titi and giant cane. Sometimes sphagnum and star mosses occurred in these areas.

Seasonally flooded forested wetlands ("C" water regime) are often deciduous forests of sweetgum, black gum, red maple and hackberry. Common to the hardwood swamps are trees with often expansive but very shallow root systems which can be seen in the fallen trees on the forest floor. Often, large loblolly pines may grow in conjunction with the red maples and other bottomland trees. High water marks seen on many of the tree trunks attest to the wide fluctuations of water tables and levels within this regime.

Dominant species in the semi-permanently flooded forested wetlands ("F" water regime) are black gum, red maple and water tupelo and are classified as PF01F. Bald cypress swamps are classified as PF02F.

Emergents are often found mixed in with other wetland communities, though they can and do constitute separate wetland communities in many situations. Common plants in seasonally and semi-permanently flooded areas are cattails, giant cane, sugarcane plume, rice cutgrass, sedges and rushes. Saturated and seasonally flooded emergents are often found in and around Carolina bays.

TABLE I- OBSERVED WETLAND VEGETATION

A. EMERGENT

<u>Arundinaria giganta</u>	giant cane
<u>Carex</u> spp.	sedges
<u>Cladium jamaicense</u>	sawgrass
<u>Eleocharis</u> spp.	spike rushes
<u>Eriocaulon decangulare</u>	hat pin
<u>Juncus</u> spp.	rush
<u>Leersia oryzoides</u>	rice cutgrass
<u>Pteridium aquilenum</u>	bracken fern
<u>Rumex</u> spp.	dock
<u>Scirpus</u> spp.	bulrushes
<u>Toxicodendron radicans</u>	poison ivy
<u>Typha latifolia</u>	cattail
<u>Vitis riparia</u>	grapevine

B. AQUATIC BED

<u>Elodea</u> spp.	waterweeds
<u>Lemna</u> spp.	duckweed
<u>Myriophyllum spicatum</u>	water milfoil
<u>Myriophyllum aquaticum</u>	parrot feather
<u>Nymphaea</u> spp.	water lily
<u>Polygonum</u> spp.	smartweed
<u>Wolffia</u> spp.	water meal

C. SCRUB-SHRUB

<u>Betula nigra</u>	river birch
<u>Clethra alnifolia</u>	sweet pepperbush
<u>Cyrilla racemiflora</u>	titi
<u>Forestiera acuminata</u>	swamp privet
<u>Ilex cassine</u>	dahoon holly
<u>Ilex glabra</u>	inkberry
<u>Ilex opaca</u>	American holly
<u>Leucothoe racemosa</u>	fetterbush
<u>Rhododendron maximum</u>	rosebay rhododendron
<u>Salix</u> spp.	willow
<u>Smilax</u> spp.	greenbriar
<u>Vaccinium</u> spp.	blackberry, blueberry

D. FORESTED

<u>Alnus</u> spp.	alder
<u>Acer rubrum</u>	red maple
<u>Acer negundo</u>	box elder
<u>Carpinus caroliniana</u>	ironwood, hornbeam
<u>Carya laciniosa</u>	shellbark hickory
<u>Celtis occidentalis</u>	common hackberry
<u>Cornus stolonifera</u>	dogwood
<u>Diospyros virginiana</u>	persimmon
<u>Fraxinus caroliniana</u>	Carolina ash
<u>Fraxinus pennsylvanica</u>	green ash
<u>Liquidambar styraciflua</u>	sweet gum
<u>Liriodendrum tupilifera</u>	tulip poplar
<u>Magnolia virginiana</u>	sweet bay
<u>Nyssa aquatica</u>	water tupelo
<u>Nyssa sylvatica</u>	black gum
<u>Nyssa sylvatica biflora</u>	swamp tupelo
<u>Parsea borbonia</u>	red bay
<u>Pinus ellioti</u>	slash pine
<u>Pinus palustris</u>	long leaf pine
<u>Pinus serotina</u>	pond pine
<u>Pinus taeda</u>	loblolly pine
<u>Platanus occidentalis</u>	sycamore
<u>Populus heterophylla</u>	swamp cottonwood
<u>Quercus</u> spp.	oaks
<u>Quercus laurifolia</u>	laurel oak
<u>Quercus marilandica</u>	blackjack oak
<u>Quercus nigra</u>	water oak
<u>Quercus palustris</u>	pin oak
<u>Salix</u> spp.	willows
<u>Taxodium distichum</u>	bald cypress
<u>Ulnus americana</u>	American elm

E. MOSS-LICHEN

<u>Sphagnum</u> spp.	peat mosses
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TABLE II- WETLAND CLASSIFICATION TABLE

<u>NWI CODE</u>	<u>COWARDIN DESCRIPTION</u>	<u>COMMON DESCRIPTION</u>	<u>DOMINANT VEGETATION</u>
PFO1A	Palustrine, broad-leaved deciduous, temporarily flooded	Floodplain forest	<u>Liquidambar styraciflua</u> , <u>Liriodendron tulipifera</u> , <u>Acer rubrum</u> , <u>Celtis occidentalis</u>
PFO1B	Saturated, broad-leaved deciduous	Seep, Carolina bay	<u>Liquidambar styraciflua</u> , <u>Liriodendron tulipifera</u> , <u>Acer rubrum</u> , <u>Quercus nigra</u>
PFO1C	Seasonally flooded, broad-leaved deciduous trees	Hardwood bottomland swamp	<u>Acer rubrum</u> , <u>Liquidambar styraciflua</u> , <u>Liriodendron tulipifera</u> , <u>Salix</u>
PFO1F	Semi-permanently flooded, broad-leaved deciduous trees	Tupelo swamp	<u>Nyssa sylvatica biflora</u> , <u>Nyssa aquatica</u>
PFO2F	Semi-permanently flooded, needle-leaved deciduous trees	Cypress swamp	<u>Taxodium distichum</u>
PFO3B	Saturated, broad-leaved evergreen trees	Seep, Carolina bay	<u>Persia borbonia</u> , <u>Salix</u> , <u>Magnolia virginiana</u>
PFO4A	Temporarily flooded, needle-leaved evergreen trees	Pine plantation, savanna	<u>Pinus taeda</u> , <u>Pinus ellioti</u>
PFO4B	Saturated, needle-leaved evergreen trees	Wet pine flatwood, pine bog	<u>Pinus palustris</u> , <u>Pinus ellioti</u> , <u>Pinus serotina</u>

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PFO4Bg	Saturated, needle-leaved evergreen trees, organic soil	White cedar swamp	<u>Chamaecyparis thyioides</u>
PFO4C	Seasonally flooded, needle-leaved evergreen trees	Pine forest	<u>Pinus taeda</u>
PSS1B	Saturated, broad-leaved deciduous scrub-shrubs	Thicket, seep, Carolina bay	<u>Betula nigra</u> , <u>Quercus nigra</u>
PSS1C (A,F)	Seasonally (or temporarily or semi-permanently) flooded, broad-leaved deciduous scrub-shrubs	Riverside, shrub swamp	<u>Betula nigra</u> , <u>Quercus nigra</u>
PSS3B	Saturated, broad-leaved evergreen scrub-shrubs	Seep, Carolina bay, thicket	<u>Clethra alnifolia</u> , <u>Ilex opaca</u> , <u>Cyrilla racemifolia</u>
PSS4B	Saturated, needle-leaved evergreen scrub-shrubs	Seep, Carolina bay	<u>Pinus</u> spp.
PEM1A	Temporarily flooded, palustrine, emergent	Wet prairie	<u>Carex</u> , <u>Juncus</u>
PEMIC	Seasonally flooded, palustrine, emergent	Wet prairie, marsh	<u>Thypha latifolia</u> , <u>Leersia oryzoides</u>
PEMIF	Semi-permanently flooded, palustrine emergent	Marsh, impoundment	<u>Thypha latifolia</u> , <u>Leersia oryzoides</u>
PAB3F (H)	Palustrine, rooted aquatic bed, semi-permanently or permanently flooded	Pond	<u>Nyphaea</u>

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PAB4F  
(H)

Palustrine,  
floating aquatic  
bed, semi-  
permanently or  
permanently flooded

Pond,  
settling  
pond

Lemna, Wolffia

V. WATER REGIME- DESCRIPTION

- (A) Temporarily Flooded - Surface water present for brief periods during growing season, but water table usually lies well below soil surface. Plants that grow both in uplands and wetlands are characteristic of this water regime.
- (B) Saturated - The substrate is saturated to the surface for extended periods during the growing season, but surface water is seldom present.
- (C) Seasonally Flooded - Surface water is present for extended periods especially early in the growing season, but is absent by the end of the growing season in most years. The water table after flooding ceases is extremely variable, extending from saturated to a water table well below ground surface.
- (F) Semi-permanently Flooded - Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land's surface.
- (G) Intermittently Exposed - Surface water is present throughout the year except in years of extreme drought.
- (H) Permanently Flooded - Water covers the land surface throughout the year in all years.
- (K) Artificially Flooded - Substrate manipulated by man using natural or synthetic materials. Water level is not constant. Depending on needs, the water is pumped in or out of the reservoir.

Special Modifiers

- (x) excavated- water lies in or flows through a basin or channel dug by man
- (h) impounded- the normal flow of water is impeded by a dike or barrier
- (g) organic soil-soil is dominated by organic components, not by mineral components

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- (b) beaver- the normal flow of water is impeded by beaver activity
- (d) partially drained/ditched- the water level/table has been artificially lowered

## VI. IMAGERY

### A. Emulsion Quality and Clarity

The HAP and NAAP Color Infra-Red photography is generally of good quality. The emulsion varies in depth of color throughout the entire project area. Some of the photography is a little too dark and consequently somewhat more difficult to interpret in areas of shadow, recent precipitation and understory. Most colors are deep but well balanced and allow differentiation of the vegetation types. There was some vignetting which resulted in exposure differences between frames, but it does not greatly affect interpretation. A few photographs were slightly out of focus.

### B. Season and Climatic Conditions

The photography was flown in middle to late winter (HAP: January 1983, March 1983 and February 1984) (NAPP: February 1989, March 1989, February 1990, March 1990 and February 1991). Most deciduous species were dormant and had not yet begun to leaf out. Some photography showed the effects of recent rainfall, having an apparently wetter signature than actually existed.

### C. Wetland Signatures

Palustrine wetlands represent the majority of wetlands in the North Carolina/South Carolina Border project area. Palustrine wetlands can be classified by water regime as temporarily flooded, saturated, seasonally flooded, intermittently flooded, semi-permanently and permanently flooded, and artificially flooded.

#### Temporary Water Regimes

The temporary water regime may be used along drainage areas, flood plains and pine plantations. The canopy in these forested areas is often fluffier and contains a greater number of species than in seasonal or semi-permanently flooded forests. The understory can often be observed through the breaks in the canopy. There may be a pinkish tinge due to the understory. These areas can be found along rivers and floodplains, but may exist in depressional areas within the uplands.

### Saturated Water Regimes

The saturated water regime may be used with linear scrub shrub and forest features in the sand hill area, where there is little over-ground flow. Triangular depressions at the heads of these features may also be saturated. While there is no specific signature for saturated wetlands, there is often a smoothly textured, "carpeted" look about a saturated wetland due to the dense understory. Both deciduous and evergreen trees may appear in the saturated areas with an understory of vines and shrubs.

### Seasonal Water Regimes

Seasonal water regimes may be used to classify emergents, scrub-shrub, forested and unconsolidated shore.

Emergents usually appear as a smooth, greenish chocolate-brown, often darker in standing water. Dead emergents may appear as a white to light gray signature.

Scrub-shrubs and forested areas will appear as textured, coarse blue-gray (deciduous) to maroon (evergreen) areas with few or no crowns present (scrub-shrub) to having height in stereo (forested).

Seasonal unconsolidated shore signatures will be a smooth grey to blue signature. This classification may have a shallow water signature in all or part of the polygon.

### Semi-permanent Water Regimes

Wetlands in the project area that are semi-permanently flooded can be forested or emergent areas. These areas may be smooth, tightly crowned, canopied areas of blue-gray to dark blue. Cypress crowns can be determined in the semi-permanent forested areas by their white, fluffy, "Q-tip" appearance. These trees often appear in the back ends of impoundments. Semi-permanent wetlands often show water or aquatic bed in the understory. Emergents may have a smooth, even-textured signature.

### Artificial Water Regime

Artificial palustrine wetlands may appear as open water or aquatic bed. Sewage treatment settling ponds and the spillway area of large dams fall within this category. The water level of these settling ponds is artificially manipulated. They may contain an aquatic bed.

**VII. MAP PREPARATION**

The classification and delineation of wetlands is in accordance with Cowardin et al (1979). National Wetlands Inventory photographic and cartographic conventions can provide more information about the mapping process. Delineation was produced through stereoscopic interpretation of the 1:58,000 and 1:40,000 scale color infrared photography. The dates of photography ranged from January 1983 through February 1991.

Field checks were conducted in each of the 1:100,000 maps in the study area prior to the delineation of wetlands. The check sites were selected to clarify wetland/upland breaks and coinciding signatures to the various vegetative covers.

USGS topographic maps, SCS soil surveys, vegetation, climate, and ecoregional information were used as collateral data for wetland delineation.

The user of the map is cautioned that, due to the limitation of mapping primarily through aerial photointerpretation, a small percentage of wetlands may be unidentified. Since the photography depicts only one specific point in time there may be discrepancies between the maps and current field conditions. Changes in landscape which occurred after the date of photograph would result in such discrepancies.

Aerial photointerpretation and drafting were completed by Geonex, Inc., St. Petersburg, Florida with quality assurance conducted by the United States Fish and Wildlife Service.

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#### VIII. SPECIAL MAPPING PROBLEMS

Photo signatures generally coincided with true field conditions.

Care was to be taken to use all collateral data in the project area. Certain areas will be checked at draft map to ensure accuracy.

The Kershaw County Soil Survey has incorrectly printed the SuA-Summerton sandy loam as a non-hydric soil. The SuA soils found in the Carolina bays and many semi-permanently flooded wetlands are listed inaccurately as well-drained.

Anderson's Land Use and Land Cover Classification System for Use with Remote Sensor Data, Level II, is being used to classify upland land usage or cover type throughout the project area for the state of South Carolina with an alpha-numeric two or three digit upland designator code.

This classification system is suitable and compatible for use with Cowardin's Classification of Wetlands and Deepwater Habitats of the United States. Anderson's classification system is used to categorize all non-wetland areas. Categories 5 (Water) and 6 (Wetland) are covered by the Cowardin classification system and will not be utilized in the study area.

Urban areas are generally divided into the Residential (11) and Commercial (12) classifications. Some polygons of Industrial (13) and Other Urban Areas (17) are often found in or around the larger urban areas. Class 17 is used for golf courses and cemeteries.

Dual lane divided highways are classified as Transportation corridors (14) provided they fulfill specific parameters. Normal highways and roads will be delineated as transportation corridors where they bisect wetlands.

Agricultural areas are divided into Farmland and Pasture (21), Orchards and Horticulture Operations (22) and Confined Feeding Operations (23).

Upland forested areas were divided into Deciduous (41), Evergreen (42) and Mixed Forested (43) along with a special classification (42P) for Pine Plantations, common to the area.

Strip mines, sand and clay pits and quarries are classified as Mines and Quarries (75). Lands that are undergoing change due to natural or manmade outside influences is classified as Transitional Areas (76).

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#### IX. MAP ACQUISITION

To discuss any questions concerning these maps, please contact:

Regional Wetland Coordinator  
U.S. Fish and Wildlife Service - Region 4  
1875 Century Blvd.  
Room 240  
Atlanta, GA 30345

To order maps call 1-800-USA-MAPS.

Maps are identified by the name of the corresponding USGS 1:24,000 scale topographic quadrangle name. Topographic map indices are available from the USGS.

#### X. LITERATURE CITED

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7.5 Minute and 1:250,000 Scale USGS Topographic Maps.

APPENDIX A  
LOCATOR MAP

North and South Carolina Border Project

