C

USER REPORT: JACKSONVILLE NW
BRUNSWICK SW

NATIONAL WETLANDS INVENTORY MAPS

A. INTRODUCTION

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

B. PURPOSE

The purpose of the notes to users is threefold: (1) to provide localized information regarding the production of NWI maps, including specific imagery and interpretation discussion; (2) to provide a descriptive crosswalk from wetland codes on the map to common names and representative plant species, and (3) to explain local geography, climate, and wetland communities.

C. STUDY AREA

Geography:

The study area covered by Jacksonville NW and Brunswick SW base maps is located in the coastal plains of southeast Georgia and a small part of northeast Florida, and extends westward to the gently sloping upland ridges. (See appendices).

Bailey (1980) classifies the study area as the Outer Coastal Plains Forest Province within the general Humid Subtropical Division. The flat plains of the Eastern Gulf Atlantic Coastal Flats cover the entire mapping area. Bailey includes the area in the Beech-Sweetgum-Magnolia-Pine-Oak Forest section. It is described as a generally flat region with over 50% of the area gently sloping. Local relief in the study area ranges from zero feet near the coast to 200 ft. on the westernmost edge.

The mapping area is characterized by numerous swamps, broad floodplains, salt marshes, carolina bays, pocosins, and small pockets of wetlands. Rivers and streams are sluggish. The Altamaha River, with an adjacent alluvial swamp, is a major waterway of the area. Its floodplain may be from 3 to 12 miles wide with oxbows, deep sloughs, natural levees, and high bluffs along the edges. Water levels of this and other tidally

influenced rivers fluctuate greatly. The other major rivers originate in the upper coastal plain and generally have less of a floodplain than alluvial rivers. The St. Mary's, Satilla, and Nassau Rivers are included in this classification. These rivers and their associated salt marshes are part of the most extensive salt marshes of the Atlantic Seaboard.

Climate:

The climate is characterized by long, warm, humid summers with mild dry winters. The annual range of temperature is moderate with an average of 60°-70°F (15°-21°C). Precipitation is well distributed throughout the year ranging from 40" to 60" (101.60 - 152.40 cm). Within Wayne County the average annual rainfall is between 45 and 50 inches (114.30 - 127.0 cm). Heavy rains and thunderstorms are common in the summer.

Vegetation:

The study area is characterized as the Temperate Rainforest (Bailey, 1980). Typical trees are evergreen oaks and members of the laurel and magnolia families. These forests usually have a well developed understory of tree ferns, small palms, shrubs, and herbaceous plants. Lianas and epiphytes are abundant.

The climax vegetation of these mesophytic habitats is the evergreen-oak and magnolia forest. Second growth forests, xerophytic and hydrophytic, are represented by large areas of sandy upland consisting of loblolly and slash pine and swamps where bald cypress is the dominant tree.

Soils:

Temperate Rainforests grow on a wide variety of upland soils, but most tend to be wet, acidic, and low in the major plant nutrients. The soils range from heavy clay to gravel, but sandy materials predominate. They are derived mainly from coastal plain sediments of sandy materials. Silty soils predominantly occur on large level areas. The soils are mainly of three orders: Ultisols, Spodosols, and Entisols.

The hydric soil associations of the study area are described in available soil surveys. The wetland soil associations of Wayne County are as follows:

Plummer-Rutledge-Leon: poorly drained and very poorly drained, sandy soils on coastal plain lowlands. These soils have developed in beds of acid marine sands and loamy sands. A high, fluctuating water table is typical of this association. More than half of the county's acreage is dominated by this

mapping unit and it includes the Big Cypress Swamp.

Weston-Bladen-Coxville-Bayboro: poorly-drained and very poorly-drained, fine-textured soils on lowlands. Streams and bay swamps are characteristic of this association, which lies approximately 25 feet above sea level.

Swamp-Wet alluvial land: level, poorly-drained and very poorly-drained, mixed soils on drainage ways, small swamps and large swampy areas. Standing water can be present for most of the year. The Altamaha River floodplain, Penholloway Swamp, Penholloway Bay, and the Penholloway Creek floodplain are a few of the areas exhibiting this wetland soil association.

The hydric soil associations of Camden and Glynn counties are as follows:

Satilla: Level soils that have a loamy surface layer over organic material, on floodplains. These soils are on very poorly-drained floodplains that are tidally influenced such as the Satilla and Altamaha Rivers.

Kingsland: Level soils that are organic throughout, on flood plains. This general soil type is similar to the above mentioned type, however, it is found on the narrow tidally influenced floodplains such as the Little Satilla River, St. Mary's River, and Buffalo Swamp.

Meggett: Nearly level soils that have a loamy surface layer and a clayey subsoil, on floodplains and terraces. This poorly-drained soil association is not influenced by the tide and is found near the Altamaha River.

Mandarin-Rutledge: Nearly level soils that are sandy throughout, on ridges and flats and in depressions and drainageways. This map unit consists of soils on marine terraces. Somewhat poorly-drained soils are on slight ridges and broad flats. Very poorly-drained soils are in poorly-defined drainageways and shallow depressions. These soils are located in the east-central and extreme western part of the counties and on the coastal islands.

Bladen-Brookman-Meggett: Nearly level soils that have a loamy surface layer and a clayey subsoil, on flats and terraces and in depressions. These soils are typically flooded during winter and spring with the poorly-drained soils on low flats, low terraces, and floodplains. Very poorly-drained soils are in broad shallow depression. This map unit is found in west Glynn and Camden counties.

Pelham-Sapelo: Nearly level soils that have a sandy surface layer over sandy and loamy underlying layers, on flats and in depressions and drainageways. This poorly-drained soil association is in the west-central part of the counties.

Fripp-Duckston-Beaches: Level-to-rolling soils that are sandy throughout, on dunes and flats and in depressions and sandy beaches. This unit is a mix of an upland soil, which is the dominant type, and two wetland soils. The poorly-drained soils in shallow depressions are between the excessively-drained soils of the dunes and on flats between the dunes and marshes. Located on Cumberland, Jekyll, Sea, and Little St. Simons Island, this association only occupies about one percent of the county.

Bohicket-Capers: Level soils that are clayey throughout, in tidal marshes. These very poorly-drained soils are frequently flooded by the tide and extend from the Atlantic Ocean to several miles inland along creeks and rivers. This association is found mainly along the Cumberland Sound and the Brunswick, Mackay, Little Satilla, and Satilla Rivers and their tributaries.

The MacIntosh County Soil Survey describes the following general wetland soil associations:

Tidal marsh-Swamp-Wet alluvial Land: Frequently-flooded alluvial soils along the eastern seaboard and large rivers. These flat areas are flooded periodically and cut by many rivers, creeks, and sloughs. This association covers most of the county being mapped in this study.

Weston-Bayboro-Bladen-Coxville: Poorly-drained and very poorly-drained soils on broad, depressed flats and in bays. Many of these areas are covered at times with shallow water and some of the soils are very poorly-drained. The study area has only a small amount of this soil association within the Buffalo Swamp.

Leon-Rutledge: Somewhat poorly-drained to very poorly-drained soils on broad, nearly level uplands and in bays. A high water table and organic matter are typical of this association located in the coastal sandy areas north of Darien.

The small area of Duval County that lies within the study has the following general wetland soil associations:

Leon-Ridgeland-Wesconnett: Nearly level, poorly-drained and very poorly-drained soils that are sandy throughout. This map unit is made up of broad areas of flatwoods interspersed with shallow depressions and large drainageways and is located near the Nassau Sound and other areas of the county.

Tisonia: Level and nearly level, very poorly-drained, saline, organic soils underlain by clayey materials. This covers the tidal marsh along the Nassau River. It is saline or brackish depending on freshwater input, and is flooded daily by tides.

D. WETLAND CLASSIFICATION CODES AND WATER REGIME DESCRIPTIONS

TABLE 1: NWI CLASSIFICATION FOR JACKSONVILLE NW AND BRUNSWICK SW

NWI CODE (WATER REGIME)	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION
M1UB (L)	Marine, subtidal, unconsolidated bottom	Atlantic Ocean	Unconsolidated botoms
M2US (M,N,P)	Marine, intertidal unconsolidated shore	Beaches or exposed tidal flats	Sand and shell fragments
E1UB (L)	Estuarine, subtidal unconsolidated bottom	Intracoastal waterways including: bays, inlets and adjacent salt marshes	Unconsolidated bottoms
E2US (M,N,P)	Estuarine, intertidal unconsolidated shore	Beaches, bars or flats	Sand or mud
E2EM1 (N,P)	Estuarine, intertidal emergent, persistent	Salt marsh	Spartina alterniflora (cordgrass) Juncus roemerianus (black needle rush)
E2SS3 (U)	Estuarine, intertidal, scrub-shrub, broad-leaved evergreen	High marsh shrub	Juniperus silicicola (southern red cedar) Iva frutescens (marshelder) Myrica cerifera (wax myrtle) Baccharis halimifolia (saltbush)
E2F07 (P)	Estuarine, intertidal forested evergreen	Coastal palm hammocks	Sabal palmetto (cabbage palm) Juniperus silicicola (southern red cedar) Myrica cerifera (wax myrtle) Pinus spp. (pines)
R1UB (V)	Riverine, tidal unconsolidated bottom	Rivers	Unconsolidated bottoms

NWI CODE (WATER REGIME)	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION
R2UB (H)	Riverine, lower perennial, unconsolidated bottom	Rivers or drainage ditches	Unconsolidated bottoms
R2AB4 (H)	Riverine, lower perennial, aquatic bed, floating vascular	Rivers	Lemna spp. (duckweed)
R2AB3 (H)	Riverine, lower perennial aquatic bed, rooted vascular	Rivers	Nymphaea spp. (water lilies)
L1UB (H)	Lacustrine, limnetic, unconsolidated bottom	Lakes	Unconsolidated bottoms
L2AB3 (G,H)	Lacustrine, littoral, aquatic bed, rooted vascular	Lake Marshes	Nymphaea spp. (water lilies) Nuphar luteum (spatterdock)
L1AB4 (H)	Lacustrine, limnetic, aquatic bed, floating vascular	Lakes	Eichornia crassipes (water hyacinth)
PUB (F,G,H)	Palustrine, unconsolidated bottoms	Ponds or pits	Unconsolidated bottoms
PAB3 (G,H)	Palustrine, aquatic bed, rooted vascular	Ponds or deep marshes	Nymphaea spp. (water lilies) Myriophyllum brasiliense (parrot feather)
PAB4 (G,H)	Palustrine, aquatic bed, floating vascular	Ponds	Hydrocotyle spp. (pennywort) Lemna spp. (duckweed)

NWI CODE (WATER REGIME)	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION
PEM1 (A,B,C,F,G)	Palustrine, emergent, persistent	Ponded prairies, marshes, depressions or drainage areas	Panicum, Xyris (grasses) Carex spp. (sedges) Juncus spp. (rushes) Typha latifolia (cattails) Eleocharis spp. (spikerush) Arundo donax (giant reed) Andropogon spp. (broomstraw) Eriocaulon spp. (pipewort) Lachnocaulon beyrichianum (bog buttons) Scirpus cyperinus (woolgrass)
PEM1 (T)	Palustrine, emergent, persistent	Brackish marsh	Zizaniopsis miliacea (giant cutgrass)
PSS1 (A,C,F)	Palustrine, scrub shrub, broad-leaved deciduous	Willow thicket	Salix nigra (black willow) Cephalanthus occidentalis (button bush) Acer rubrum (red maple)
PSS3 (A,B,C,F)	Palustrine, scrub shrub broad-leaved evergreen	Thicket, bog, pocosin or bay	Magnolia virginiana (sweet bay) Persea borbonia (red bay) Cyrilla racemiflora (titi) Lyonia lucida (fetterbush) Ilex curiacea (holly) Ilex glabra (gallberry) Ilex cassine (dahoon holly) Myrica cerifera (wax myrtle)

NWI CODE (WATER REGIME)	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION
PSS7 (A,B,C)	Palustrine, scrub shrub evergreen	Thicket or bog	Persea borbonia (red bay) Myrica cerifera (wax myrtle) Lyonia lucida (fetterbush) Pinus elliottii (slash pine)
PFO1 (A,C,F)	Palustrine, forested, broad-leaved deciduous	Floodplains, swamps or depressions	Acer rubrum (red maple) Quercus laurifolia (laurel oak) Quercus phellos (willow oak) Liquidambar styraciflua (sweetgum) Nyssa sylvatica (black gum) Nyssa aquatica (water tupelo)
PFO2 (C,F,G)	Palustrine, forested, needle-leaved deciduous	Cypress domes, sloughs or swamps	Taxodium distichum nutans (pond cypress)
PFO1/2 (F)	Palustrine, forested, broad-leaved deciduous/ needle-leaved deciduous	Fresh water swamp or floodplain	Nyssa sylvatica (black gum) Taxodium distichum nutans (pond cypress)
PFO1/2 (T)	Palustrine, forested, broad-leaved deciduous/ needle-leaved deciduous	Tidally-influenced swamp or floodplain	Nyssa aquatica (water tupelo) Taxodium distichum (bald cypress)
PFO3 (B)	Palustrine, forested, broad-leaved evergreen	Bayheads or bay swamps	Magnolia virginiana (sweet bay) Persea borbonia (red bay) Gordonia lasianthus (loblolly bay)

NWI CODE (WATER REGIME)	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION
PFO4 (A,C)	Palustrine, forested, needle-leaved evergreen	Pine flatwoods	Pinus elliotti (slash pine) Pinus serotina (pond pine)
PFO6 (C,F)	Palustrine, forested, deciduous	Swamp	Taxodium distichum nutans (pond cypress) Acer rubrum (red maple) Liquidambar styraciflua (sweet gum) Nyssa sylvatica biflora (swamp black gum)
PFO2/4 (C)	Palustrine, forested, needle-leaved deciduous/ needle-leaved evergreen	Depressions	Taxodium distichum nutans (pond cypress) Pinus spp. (pines)
PFO2/3 (C,F)	Palustrine, forested needle-leaved deciduous/ broad-leaved evergreen	Cypress domes, sloughs or swamps	Taxodium distichum nutans (pond cypress) Magnolia virginiana (sweet bay) Myrica cerifera (wax myrtle)

Water Regime Description

Tidal

Salt and Brackish Areas - Marine and Estuarine Systems

(L) Subtidal - The substrate is permanently flooded with tidal water.
(M) Irregularly Exposed - Land surface is exposed by tides less often than daily. This corresponds to the area on NOS charts from seaward edge of light green tone (mean low water) to depth contour approximating extreme low water.
(N) Regularly Flooded - Tidal water alternately floods and exposes the land surface at least once daily.
(P) Irregularly Flooded - Tidal water alternately floods and exposes the land surface at least once daily. The area must flood by tide at least once yearly as a result of extreme high spring tide.

Freshwater Tidal Areas - Lacustrine, Palustrine and Riverine Systems

(N) Regularly Flooded - Fresh tidal water alternately floods and exposes the land surface at least once daily
(R) Seasonally Flooded - Tidal
(S) Temporarily Flooded - Tidal
(T) Semipermanently Flooded - Tidal
(V) Permanently Flooded - Tidal
(U) Unknown - The water regime is not known.

Non-Tidal

(J) Intermittently Flooded - Substrate is usually exposed, but surface water present for variable periods without detectable seasonal periodicity. Weeks, months or even years may intervene between periods of inundation. The dominant plant communities under this regime may change as soil moisture conditions change. Some areas exhibiting this regime do not fall within our definition of wetland because they do not have hydric soils or support hydrophytes.
(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 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 highly variable, extending from a saturated surface zone to a water table well below the ground surface.

(F) Semipermanently 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 land surface throughout the year in all years.

(K) Artificially Flooded - The amount and duration of flooding is controlled by means of pumps or siphons in combination with dikes or dams.

(U) Unknown- The water regime is not known.

General Note: Table 1

In the Palustrine Forested NWI codes, the split subclasses will be meant to also include the inverse subclasses. Vegetation characteristics will be the same, only with different percentages.

Also, any split classes will generally contain those vegetation characteristics found in the singular class.

F. MAP PREPARATION

The wetland classification that appears on the Jacksonville NW and Brunswick SW National Wetlands Inventory (NWI) Base Map is in accordance with Cowardin, et. al. (1977). The delineations were produced through stereoscopic interpretation of 1:58,000 scale, color infrared photography. 75% of the photography was taken during March of 1983 and 25% was taken during February of 1984.

Field checks of areas found within the study area were made prior to the actual delineation of wetlands. Field check sites were selected to clarify varying signatures found on the photograpny. These photographic signatures were then identified in the field using vegetation types and soil types, as well as additional input from field personnel.

Collateral data included USGS topographic maps, SCS soil surveys, Department of Natural Resources Wetland Maps, climate, vegetation, and ecoregional information.

The user of the map is cautioned that, due to the limitations of mapping primarily through aerial photointerpretation, a small percentage of wetlands may have gone unidentified. Since the photography was taken during a particular time and

season, there may be discrepancies between the map and current field conditions. Changes in landscape which occurred after the photography was taken would result in such discrepancies.

Aerial photo interpretation and drafting were completed by Martel Laboratories, Inc., St. Petersburg, Florida.

G. SPECIAL MAPPING PROBLEMS

None.

H. MAP ACQUISITION

To discuss any questions concerning these maps or to place a map order, please contact:

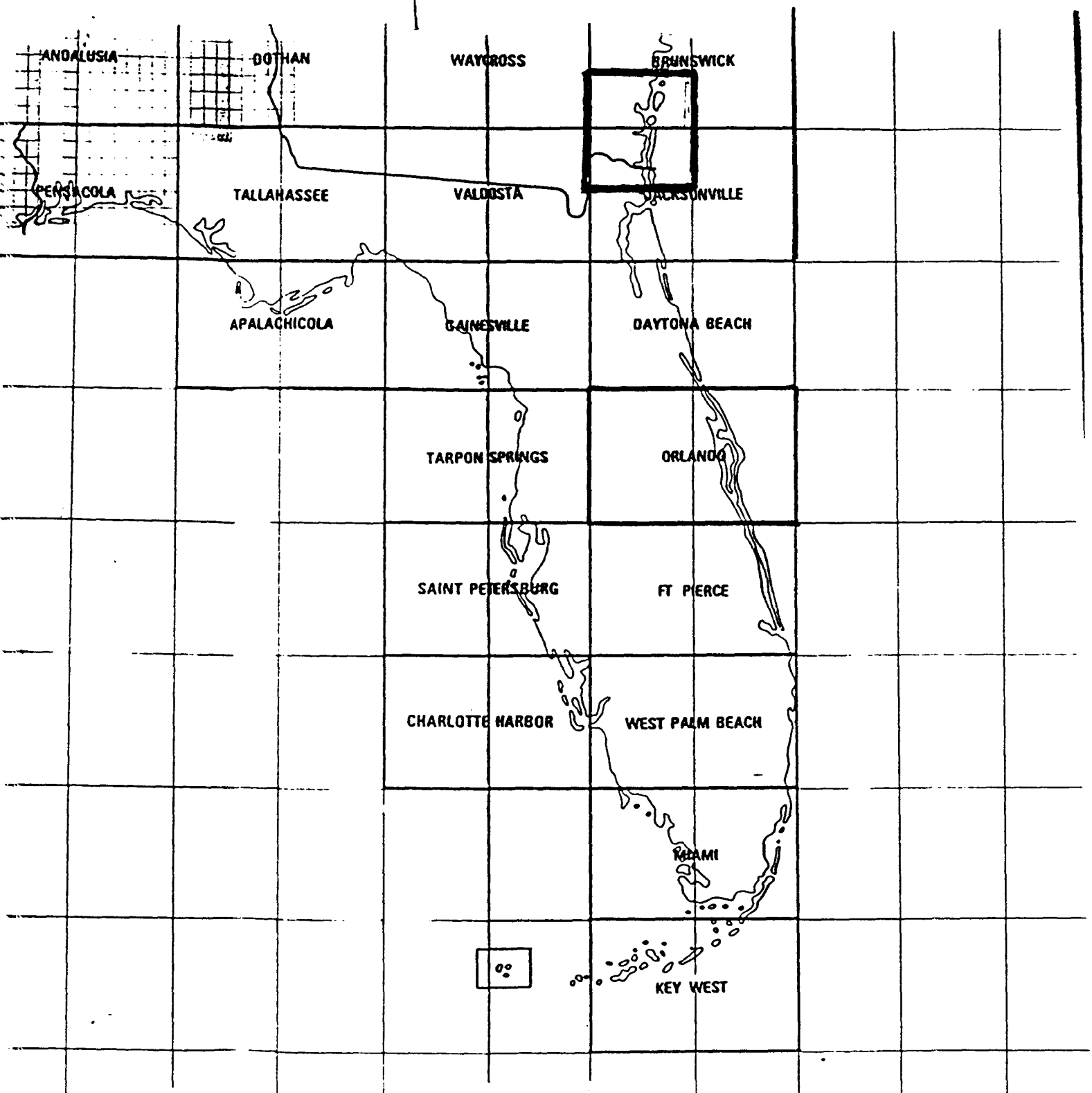
John Hefner
Regional Wetland Coordinator
U.S. Fish and Wildlife Service - Region IV
R.B. Russell Federal Building
75 Spring Street S.W.
Atlanta, GA 30303

To order maps only, contact:

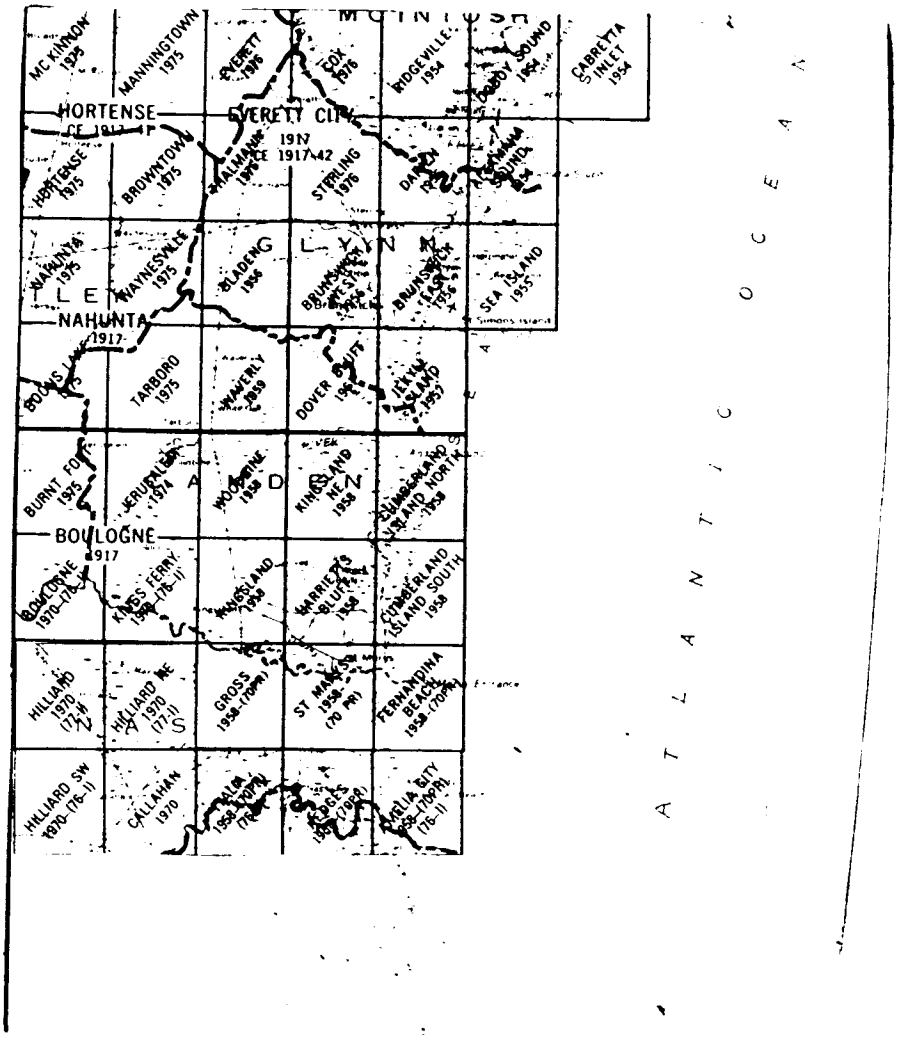
National Cartographic Information Center
U.S. Geological Survey
National Center
Reston, VA 22092

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

LOCATOR MAP (A)



LOCATOR MAP (B)



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