A Special NOAA 20th Anniversary Report

Coastal Wetlands of the United States

An Accounting of a Valuable National Resource

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Donald W. Field, Anthony J. Reyer,
Paul V. Genovese, and Beth D. Shearer

Strategic Assessment Branch
Ocean Assessments Division
Office of Oceanography and Marine Assessment
National Ocean Service
National Oceanic and Atmospheric Administration

In Cooperation with:

National Wetlands Inventory
Fish and Wildlife Service
U.S. Department of the Interior
Washington, D.C. 20240

and the

National Wetlands Research Center
Fish and Wildlife Service
U.S. Department of the Interior
Slidell, Louisiana 70458

This publication is part one of a two part series by the National Oceanic and Atmospheric Administration and the U.S. Fish and Wildlife Service. Part two is an educational brochure to be published by the U.S. Fish and Wildlife Service (summer of 1991) providing a broader view of the importance of coastal wetlands using summary data from part one.

Coastal Wetlands

This report describes briefly NOAA's recently completed national data base describing the distribution and abundance of coastal wetlands in the conterminous U.S. This project is one element of NOAA's National Estuarine Inventory (NEI). The NEI is a series of activities that define and characterize the Nation's estuarine resource base and develop a national estuarine assessment capability. The wetlands data presented in this report are organized by estuary and region as defined in the most recent update of the NEI (NOAA, 1990), described in Appendix A.

Introduction

After years of continual degradation and loss, coastal wetlands have finally begun to receive public attention and action. Generations of Americans have treated coastal wetlands as a nuisance that could be best used as cropland or for urban development. Increasing environmental awareness over the past few decades has finally brought wetlands into focus as one of the Nation's most important and valuable natural resources. However, heightened awareness does not always translate into effective action. Despite major efforts, areas such as the Mississippi Delta and the Florida Everglades are still experiencing significant wetland losses from a variety of human and natural causes.

To understand the function and importance of coastal wetlands and find ways to manage them more effectively, two types of data are critical: (1) information on the current distribution and abundance of coastal wetlands; and (2) information on the trends of coastal wetlands losses or gains.

With frequent talk of wetlands losses and increased media focus on wetlands issues, the general public and many decision-makers take for granted the existence of reliable and up-to-date information about wetlands. However, before the completion of this project, a comprehensive and consistently derived national data base describing the distribution and areal extent of coastal wetlands did not exist.

Recognizing this critical gap in coastal wetlands information,

> *Wetlands* are transitional areas between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered by shallow water (Cowardin et al., 1979).
>
> *Coastal wetlands* in this report include all wetland areas (in addition to tidal wetlands) shown on FWS National Wetlands Inventory maps within watersheds or drainage areas directly surrounding estuarine waters or within counties adjacent to marine waters (excluding Alaska and Hawaii).

NOAA began a project in 1985 to create such a data base. Maps produced by the National Wetlands Inventory (NWI) of the U.S. Fish and Wildlife Service (FWS) were grid-sampled to quantify, for the first time, the distribution and abundance of the Nation's coastal wetlands. Data base development was completed in the fall of 1989. This report presents acreage summaries for 507 counties and 92 estuaries on the Atlantic, Gulf of Mexico, and Pacific coasts of the U.S.

Importance of Coastal Wetlands

The functional and economic values of coastal wetlands are enormous. As important elements of estuarine ecosystems, coastal wetlands not only affect the local ecosystem where they occur, but also ecosystems elsewhere through the species they support. For example, the wetlands of Chesapeake Bay, the Nation's largest estuary, provide important habitat for migratory species such as striped bass (*Marone saxatilis*) that migrate as far north as the St. Lawrence River, Canada.

Wetlands provide a wide range of benefits, including flood damage protection, protection from storm and wave damage, water quality improvement through filtering and processing of agricultural and industrial wastes, and recharge of aquifers. They also provide critical habitat for at least some stage in the life cycle of a number of plants, fish, shellfish, and other wildlife. While it may be difficult to quantify the economic benefits of some of these functions, the value of wetlands to fisheries, the fur trade, and waterfowl is significant.

In 1986, Congress indicated that wetlands are important contributors to a commercial marine fisheries harvest valued at over $10 billion annually (Feierabend and Zelazny, 1987). Estimates of the value of coastal wetlands to commercial and recreational fisheries range from about $2,200 per acre along the Pacific Coast to almost $10,000 per acre along parts of the Florida coast (Bell, 1989). Rising costs and demands for waterfront property promise increased competition for limited space in coastal areas. Between 1981 and 1985, the U.S. Army Corps of Engineers received over 27,000 proposals to alter coastal wetlands in the 14 coastal states from New York to Texas (Mager and Thayer, 1986).

Data Collection

First Steps. To establish a national coastal wetlands data base, NOAA first examined and compiled existing information on the areal extent and distribution of coastal wetlands. Twenty-three sources were consulted to compile acreage figures for 242 counties in 22 coastal states (Alexander et al., 1986). These data indicated the presence of over 11 million acres of wetlands along the coast of the conterminous U.S. While this compilation and evaluation were necessary first steps, much of the existing information was incomplete or outdated. Variability in data quality, consistency, and lack of a unifying theme or purpose also contributed to the difficulty of consolidating data into a single, comprehensive national data base.

Evaluating Alternatives. Next, NOAA evaluated alternative data sources and methods. Several investigators have successfully used Multispectral Scanner and Thematic Mapper Landsat satellite imagery to inventory wetlands (May, 1986; Haddad and Harris, 1985). However, these techniques require trained personnel and expensive equipment for image processing beyond available NOAA resources (although new resources have since been allocated to fund wetlands mapping using these methods in NOAA's Coast Watch program). A more realistic alternative was to exploit a previously underutilized source of wetland information, the National Wetland Inventory of the FWS.

The National Wetland Inventory Program. The NWI produces information on the characteristics and extent of the Nation's wetlands (Tiner, 1984). This information consists of detailed wetland maps prepared from aerial photographs, generally at a scale of 1:24,000. Wetland habitats on these maps are classified using the Cowardin et al. (1979) system. Over 5,000 maps covering more than 95 percent of the coastal areas of interest have been prepared. However, less than 2,000 have been converted to digital data for computer processing and mapping. Furthermore, the FWS had no funds to develop a complete digital data base of NWI coastal maps. Since standard procedures for digitizing are expensive and time-consuming, maps are presently digitized by the FWS on primarily a user-pays basis (Dahl, 1987). Thus, although NWI maps were an excellent data source for a national inventory due to their comprehensive coverage and availability, a method for quantifying the mapped data other than standard digitizing had to be developed.

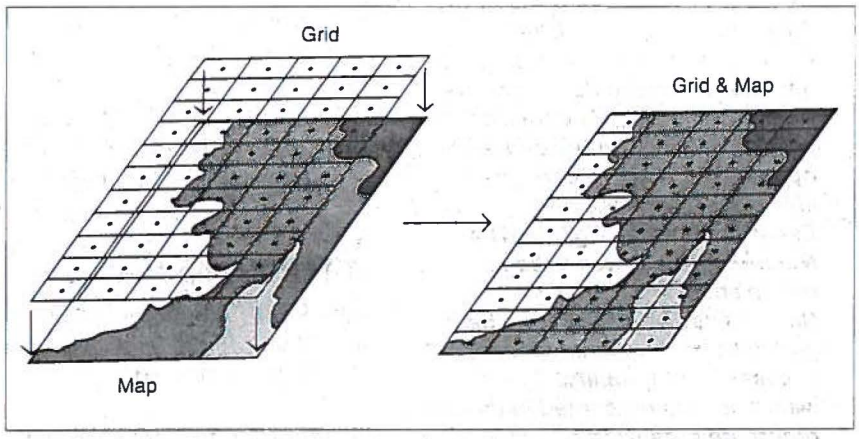


Figure 1. *NWI map and grid prepared for grid sampling*

NOAA's Grid-Sampling Procedure. Grid-sampling procedures have been widely used to estimate areas on both maps and aerial photographs (e.g., on forestry maps representing strata, cover types, and stands) (Bonner, 1975). Preliminary tests indicated that this procedure offered a reasonable alternative to more expensive and time-consuming techniques with an acceptable degree of accuracy and detail (Field et al., 1988). After initial testing, a 45-acre grid-cell size was determined to be both efficient and accurate for estimating the extent and general distribution of coastal wetlands at a national scale.

The technique involved placing a transparent grid over a NWI map (Figure 1) and identifying the wetland type where each sampling point fell. The grid consisted of cells corresponding to approximately 45 acres on a 1:24,000-scale map. The number of sampling points varied with latitude, ranging between 725 and 1,000 sampling points per map. A modified grid was used on the 1:62,500-scale maps encountered in the New England and Pacific regions. This grid consisted of cells corresponding to approximately 55 acres on a 1:62,500 scale map, resulting in 2,000-2,500 sampling points per map.

The numerous wetland types identified on NWI maps were aggregated into 15 habitat types. Appendix C summarizes the NWI habitats included in NOAA's 15

types and gives examples of representative plant species. All available NWI maps within watersheds or drainage areas directly surrounding estuaries (i.e., estuarine drainage areas) or within counties adjacent to marine waters were grid-sampled.

Grid-sampled data were entered into a geographic information system, the Spatial Analysis System (SPANS), in NOAA's GeoCOAST facility located in the Rockville, Maryland, headquarters of the Office of Oceanography and Marine Assessment. Geo-referenced grid-sampled data were spatially analyzed in conjunction with estuary and county area boundaries to produce acreage summaries by NWI map, estuarine drainage area, county, and/or state. The completed data base contains information from 5,290 NWI maps. Figure 2 shows the distribution of wetlands in each of the 92 estuaries. All data by county and estuary are summarized in Appendix D.

Verification of Grid-Sampling Technique. To verify the effectiveness of grid sampling, sampled data were compared to FWS digital data (NWI) using the Map Overlay Statistical System (MOSS), wherever available. Many U.S. coastal areas were compared to examine the accuracy of the grid-sampling technique. These areas included Barnegat Bay, New Jersey; San Francisco Bay, California; several maps in Delaware and Maryland; and approximately 50 maps in several areas of the Gulf of Mexico. A comparison of NWI digital data and grid-sampled data for 32 maps around Barnegat Bay, New Jersey is provided in Appendix B.

Grid sampling provided a time- and cost-effective method for compiling a reasonably accurate coastal wetlands data base. On a single map basis, acreages of abundant wetland types (more than 2,000 acres) estimated by grid-sampling were very close to acreages calculated from digital data. Acreages of less abundant wetland types estimated by grid sampling were more variable. In general, the larger the area being compared, the smaller the difference between grid estimates and digital acreages. Grid-sampled data for areas such as counties composed of multiple maps (e.g., typically five maps or more) are quite accurate. For large areas such as estuarine drainage areas (typically 15 maps or more), the estimates are even more accurate.

Commercial shrimping, Cape May, New Jersey

Courtesy of NOAA

Total Coastal Wetlands

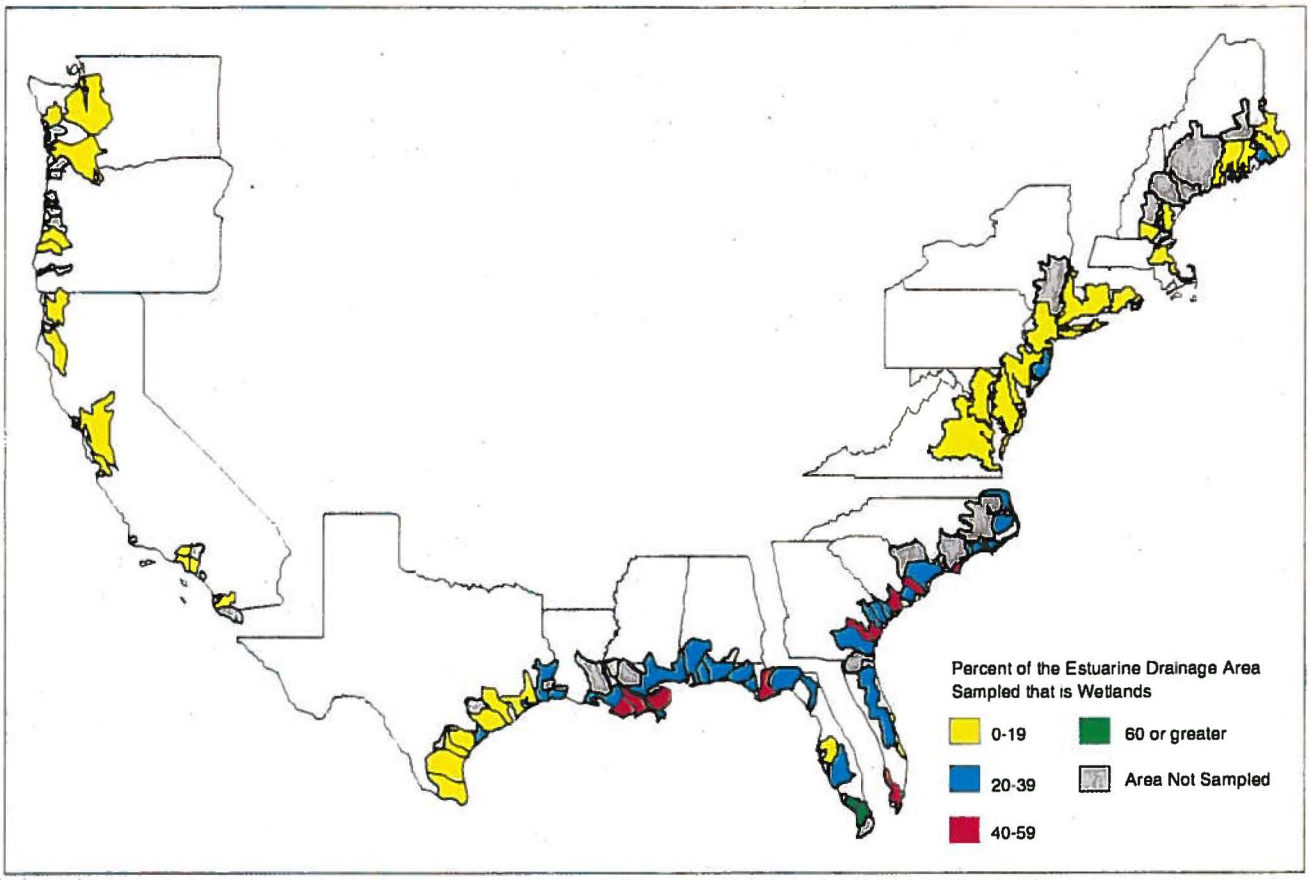


Figure 2. *Distribution of wetlands in the Nation's estuarine drainage areas*

Description

The importance of coastal wetlands is described in almost every report written on wetlands. Entire books and countless journal articles have been written on the subject. However, until now, the contribution of coastal wetlands to the Nation's wetlands resource base has been impossible to estimate.

Estimates of the total wetland acreage for the entire conterminous U.S. vary, but the FWS estimates that approximately 99 million acres of wetlands remained in the mid-1970s. A conservative assessment is that this area may have been reduced further to approximately 95 million acres by the late-1980s (Feierabend and Zelazny, 1987).

The data presented indicate that a thin margin of land along the coasts accounts for an inordinate amount of the Nation's wetlands.

Almost 27.4 million acres of wetlands are in the Nation's coastal areas.

Coastal wetlands account for almost one-third of the Nation's total wetlands.

Coastal wetlands account for about 16 percent of the Nation's coastal area.

The Gulf of Mexico region contains over half of the Nation's coastal wetlands.

Approximately 27.4 million acres of coastal wetlands were identified (although not every map needed for complete coverage of coastal areas was available).

Table 1 shows the ten estuarine drainage areas with the most coastal wetlands.

Table 1. Top ten estuarine drainage areas ranked by total wetlands.

Estuary	(Acres x 1,000)
Ten Thousand Islands	2,165
Mississippi Delta Region	1,769
Albemarle/Pamlico Sounds	1,131
Mississippi Sound	1,069
St. Johns River	1,048
Chesapeake Bay	996
Apalachee Bay	695
Mobile Bay	654
Charlotte Harbor	624
Apalachicola Bay	592

Distribution

Forested and scrub-shrub wetlands are the most abundant coastal wetland type in the U.S., accounting for 63 percent of the national total (Figure 3). They are also the dominant wetland type in all five regions (Figure 5) and all coastal states, except Louisiana and New York. Fresh marsh is the second most abundant type, accounting for 17 percent of the national total, followed by salt marsh (16 percent), and tidal flats (4 percent).

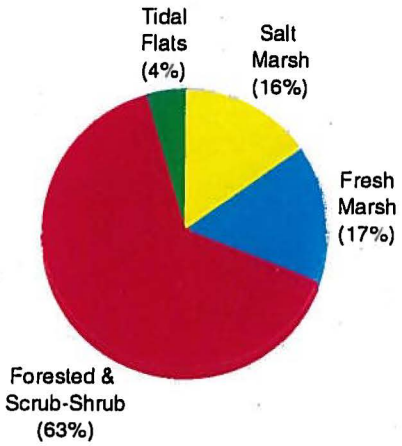


Figure 3. *Wetlands distribution by habitat*

Regions. Coastal wetlands are unevenly distributed among regions (Figure 5). The Gulf of Mexico region accounts for 51 percent of all coastal wetlands. It contains more than half of the Nation's coastal fresh marsh (61 percent) and salt marsh (58 percent), and almost half of the forested and scrub-shrub wetlands (47 percent) and tidal flats (42 percent). When combined with the South Atlantic, these two regions account for 81 percent of the total wetlands inventoried.

States. Florida has the most coastal wetlands among states with nearly 10 million acres (Figure 4), accounting for 36 percent of the wetlands inventoried. Most of these wetlands (72 percent) are located on the state's Gulf coast. When combined with the 3.3 million acres in Louisiana, these two states alone account for 49 percent of the coastal wetlands inventoried.

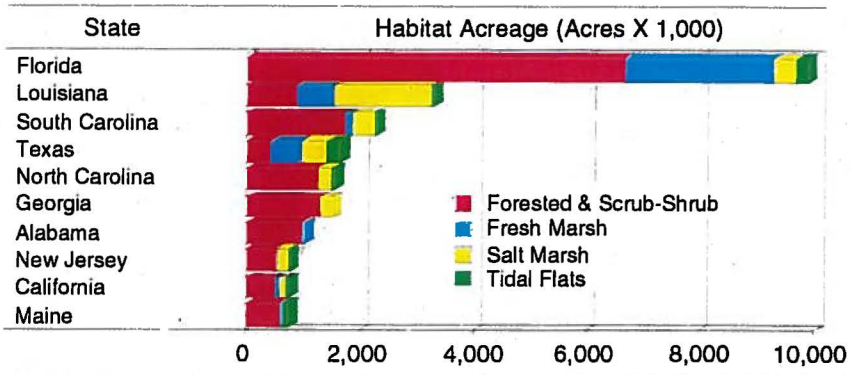


Figure 4. *Ten states with the most coastal wetlands*

Estuarine Drainage Areas (EDAs). The 92 EDAs in the National Estuarine Inventory account for 77 percent of the coastal wetlands inventoried (Figure 2). The remaining 23 percent are wetland areas in counties adjacent to marine waters not in EDAs. An estuary from either the Gulf of Mexico or South Atlantic region lead the Nation in each wetland type. Most of the top ten estuaries in the salt marsh, fresh marsh, and forested and shrub-scrub types were also in the Gulf of Mexico and South Atlantic regions. Exceptions were Chesapeake Bay, ranked second in salt marsh and seventh in forested and scrub-shrub, and Delaware Bay, ranked fifth in salt marsh. Four Pacific estuaries also ranked in the top ten for tidal flats.

The Ten Thousand Islands estuary in Southern Florida, known for its mangroves and extensive areas of forested and scrub-shrub and fresh marsh in the Everglades, contained the most total wetlands, almost 400,000 acres more than the second-ranked estuary, the Mississippi Delta Region. Albemarle/Pamlico Sounds estuary, containing almost one million acres of forested and shrub-scrub wetlands, ranked third.

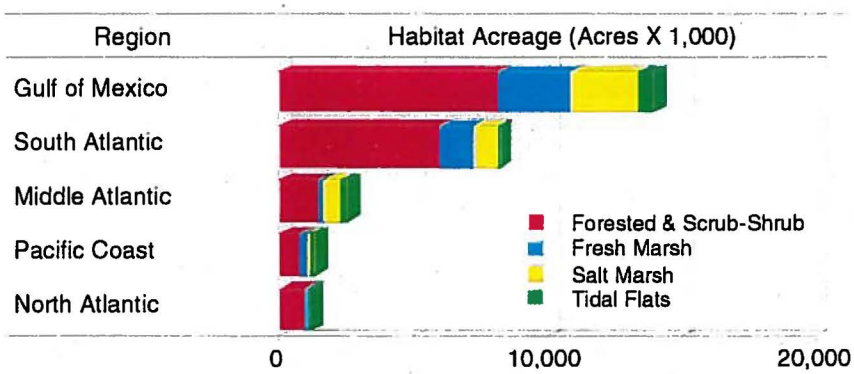
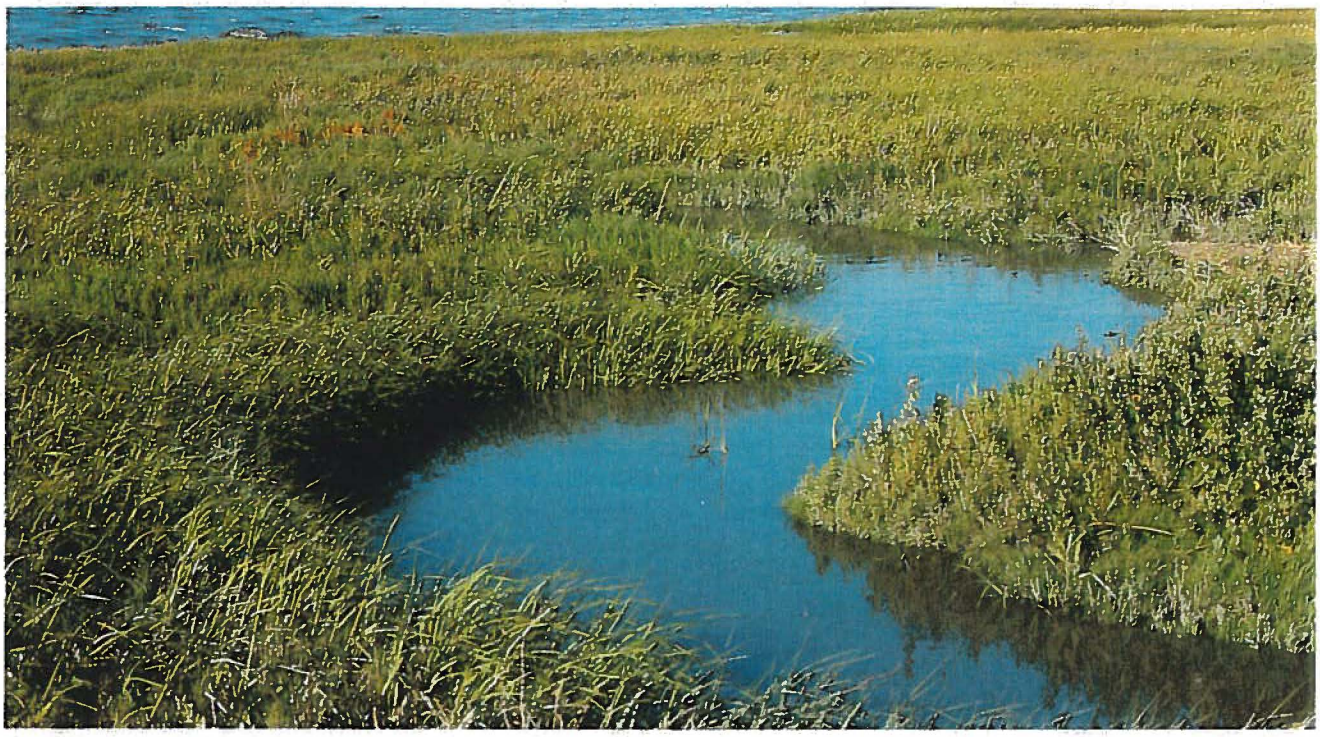


Figure 5. *Wetlands distribution by region*

Salt Marsh

Coastal salt marsh along San Francisco Bay



Courtesy of Virginia Carter, USGS

Description

Salt marshes are highly productive, complex ecosystems essential to the health and water quality of the Nation's estuaries. A salt marsh is defined as a "natural or semi-natural salt tolerant grassland and dwarf bushwood on the alluvial sediments bordering saline water bodies whose water level fluctuates either tidally or nontidally" (Beeftink, 1977). Erect, rooted, herbaceous hydrophytes dominated by salt-tolerant perennial plants comprise the salt marsh (Cowardin et al., 1979). Several important physical and chemical variables influence the structure and function of these vital ecosystems, including tidal flooding frequency and duration, soil salinity, nutrient influx, and temperature fluctuation. Stress caused by rapid changes in these variables results in lower species diversity in salt marshes than in most fresh marshes. However, salt marsh is one of the world's most biologically productive ecosystems, even more productive than many intensely used agricultural lands (Teal and Teal, 1969).

Over 4 million acres of salt marsh exist in the Nation's coastal areas.

Salt marsh accounts for 16 percent of the Nation's total coastal wetlands.

The Gulf of Mexico contains 58 percent of the Nation's salt marsh.

All coastal states in the conterminous U.S. contain salt marshes. These marshes flourish in low-energy areas, protected from destructive waves and storms, where the rate of sediment accretion is greater than or equal to the rate of land subsidence (Mitsch and Gosselink, 1986).

Salt marshes can be found near river mouths, on low-energy coastal plains, in estuaries, and around protected lagoons. They are widely distributed along the Atlantic and Gulf coasts and found in smaller pockets along the Pacific coast. Plant species found in salt marshes along the Atlantic and Gulf coasts include smooth cordgrass (*Spartina alterniflora*), salt hay grass (*Spartina patens*), big cordgrass (*Spartina cynosuroides*), and needlerush (*Juncus roemerianus*). Major species in Pacific coast salt marshes include California cordgrass (*Spartina foliosa*), common pickleweed (*Salicornia virginica*), sea blite (*Suaeda linearis*), and arrow grass (*Triglochin maritima*).

Distribution

Salt marshes are found throughout the coastal regions of the U.S. They are the third most abundant coastal wetland type in the Nation, behind forested and scrub-shrub wetlands and fresh marsh.

Regions. Of the five regions inventoried, the Gulf of Mexico contains the most salt marsh with 58 percent of the national total (Figure 6), accounting for 9 percent of the Nation's coastal wetlands. This large area is partially due to an overall low-energy environment with many sediment-laden rivers. The South Atlantic region ranks second, containing 21 percent of the Nation's salt marsh, followed by the Middle Atlantic (16 percent), the Pacific (3 percent), and the North Atlantic (2 percent). The South Atlantic and Gulf of Mexico combined account for approximately 80 percent of the Nation's salt marsh.

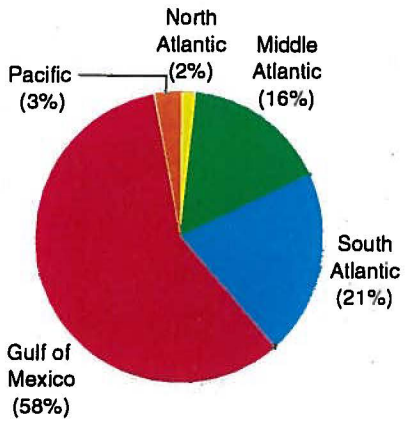


Figure 6. *Distribution of salt marsh by region*

States. Ninety-five percent of the Nation's coastal salt marsh occurs from New York to Texas. Louisiana contains the greatest amount, 42 percent of the total salt marsh (Figure 7), nearly four times greater than any other state. Texas ranks second, with 11 percent of the national total. South Carolina and Florida each account for 9 percent of the national total. California, ninth in salt marsh acreage, contains 75 percent of the Pacific region's salt marsh. Massachusetts contains more salt marsh than any state in the North Atlantic and is ranked 13th in the Nation.

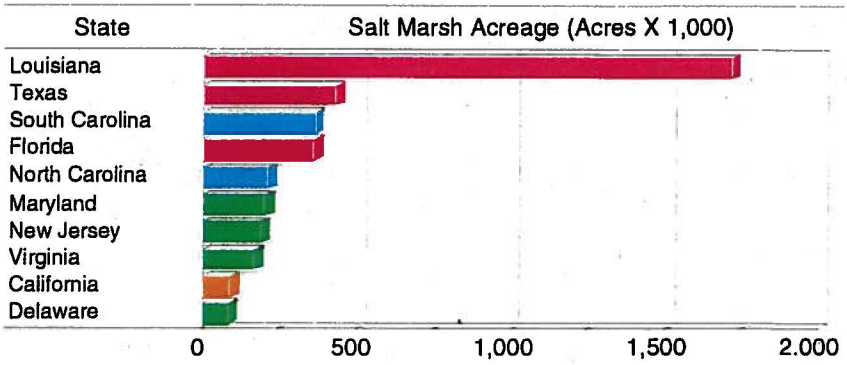


Figure 7. *Ten states with the most salt marsh*

Estuarine Drainage Areas (EDAs). Estuarine drainage areas in NOAA's NEI contain 78 percent of the Nation's salt marsh. The Mississippi Delta Region contains the most salt marsh (31 percent of the estuarine total), nearly four times more than any other estuary (Figure 8). Chesapeake Bay, though larger in overall area, ranks second, accounting for only 8 percent of the Nation's estuarine salt marshes. Albemarle/Pamlico Sounds rank the highest in the South Atlantic and fourth nationwide, with 5 percent of the estuarine salt marshes. The Pacific and North Atlantic regions each have only one estuary among the top 40 salt marsh estuaries: San Francisco Bay ranked 13th; and Cape Cod Bay ranked 37th. Of the top ten salt marsh estuaries, five are in the Gulf of Mexico region.

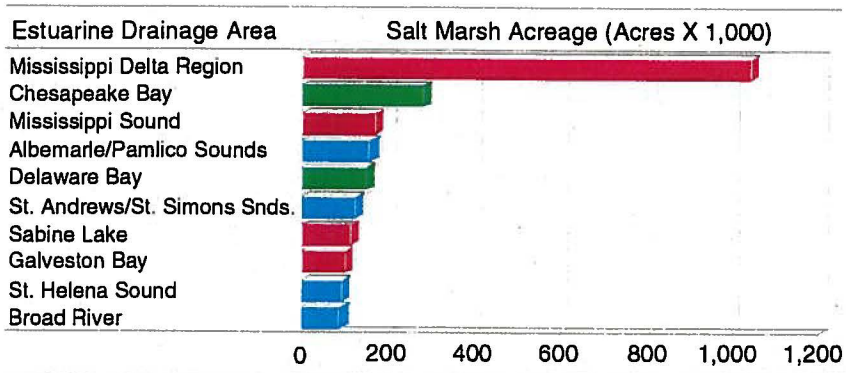


Figure 8. *Ten estuarine drainage areas with the most salt marsh*

Coastal Fresh Marsh

Coastal fresh marsh near San Francisco Bay

Courtesy of USFWS

Description

Coastal freshwater marshes are highly diverse and productive ecosystems. They are defined as areas inundated by two meters (or less) of water and dominated by herbaceous plants (Cowardin et al., 1979). Fresh marsh can be tidally influenced or occur in nontidal areas. Nontidal marshes are found surrounding inland lakes, ponds, and rivers or above the zone influenced by tides. They are found primarily along the coastal plains of the Gulf of Mexico and Atlantic coast. Tidal fresh marsh is located directly inland of salt marsh, in areas where water movement is influenced by tidal fluctuations but salinity levels are below 0.5 ppt (Maltby, 1986; Mitsch and Gosselink, 1986). Fresh marsh was formed primarily after the last ice age due to rising sea levels that inundated low-lying areas.

In contrast to salt marsh, coastal fresh marsh has one of the most diverse wetland communities. Many species of fish spend all or part of their life cycles in fresh marshes. Freshwater species complete their entire life cycle in or near fresh marshes, while anadromous fish use these areas as nursery and/or spawning grounds. A wide range of bird species use fresh marsh as primary habitat for feeding, nesting, and cover. Many small fur-bearing mammals also use fresh marsh for feeding and shelter. These mammals are an important economic resource in many of the Nation's regions.

> Over 4.5 million acres of coastal fresh marsh are in the Nation's coastal areas.
>
> Fresh marsh accounts for 17 percent of the Nation's coastal wetlands.
>
> The Gulf of Mexico region contains 61 percent of the Nation's fresh marsh.

Invertebrates such as freshwater shrimp (*Callianassa spp.*) and crayfish (*Cambarus spp.*) are also economically important (Maltby, 1986). Vegetation associated with fresh marsh includes the common cattail (*Typha latifolia*), fragrant water lily (*Nymphoides aquatica*), water lettuce (*Pistia stratiotes*), reed grass (*Phragmites australis*), wild rice (*Zizania aquatica*), and saw grass (*Cladium jamaicense*). Coastal fresh marsh, like most coastal wetlands, helps to reduce sediment erosion and flooding.

Distribution

Coastal fresh marsh is the second most abundant wetland type in NOAA's data base. Eighty-one percent of all fresh marsh is nontidal, 5 percent is tidal, and 14 percent is unspecified.

Regions. The Gulf of Mexico region contains the most fresh marsh, with 61 percent of the national total (Figure 9). The South Atlantic region ranks second, with 29 percent of the fresh marsh total. These two regions combined contain 90 percent of the Nation's fresh marsh. The other three regions combined contain the remainder of the Nation's fresh marsh, despite covering over half of the total land area inventoried by NOAA.

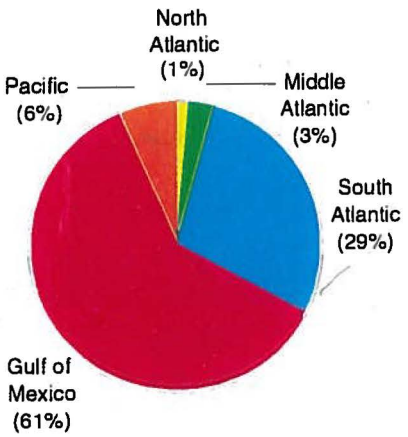


Figure 9. *Distribution of fresh marsh by region*

States. Florida, with extensive fresh marsh in the Everglades and other areas in the southern and central portions of the state, contains more fresh marsh than any other state inventoried (Figure 10), with 57 percent of the Nation's fresh marsh. This is nearly four times more than second-ranked Louisiana which has 15 percent of the national total. Texas, Florida, and Louisiana account for 84 percent of the Nation's coastal fresh marsh. Washington, Oregon, and California rank fourth, fifth, and sixth respectively, each with 2 percent of the national total. Virginia is the highest-ranking state in the Middle Atlantic region, while Massachusetts (12th nationwide) contains the most fresh marsh in the North Atlantic.

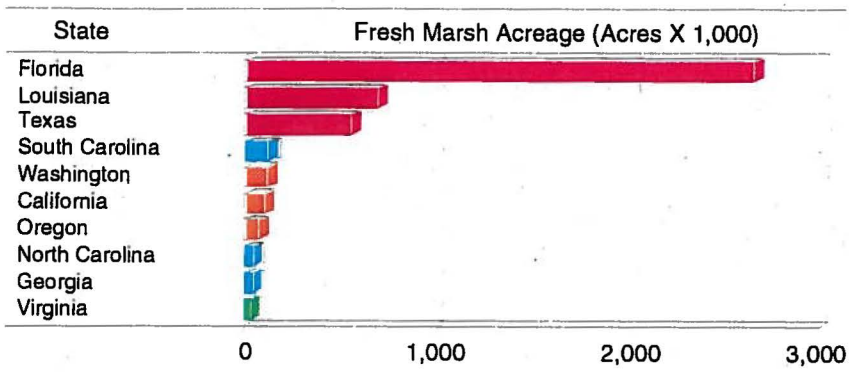


Figure 10. *Ten states with the most coastal fresh marsh*

Estuarine Drainage Areas (EDAs). NOAA's estuarine drainage areas contain 70 percent of the Nation's coastal fresh marsh. Florida's Ten Thousand Islands estuary, encompasses much of the Everglades and contains more fresh marsh than any other estuary in the Nation (Figure 11), approximately one-quarter of the total. The fresh marsh in this estuary is 2.5 times greater than the second-ranked estuary, the Mississippi Delta Region. Seven of the top ten estuaries are in the Gulf of Mexico region, with the other three in the South Atlantic. St. Johns River is the top-ranked estuary in the South Atlantic, with 8 percent of the national total and 40 percent of the regional total. Puget Sound and Chesapeake Bay, ranked 11th and 12th respectively, are the highest ranking EDAs in the Pacific and Middle Atlantic regions, accounting for 15 percent of the fresh marsh within each region.

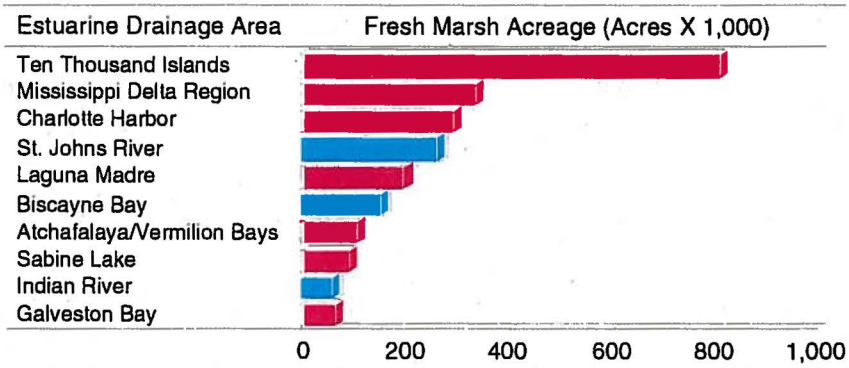
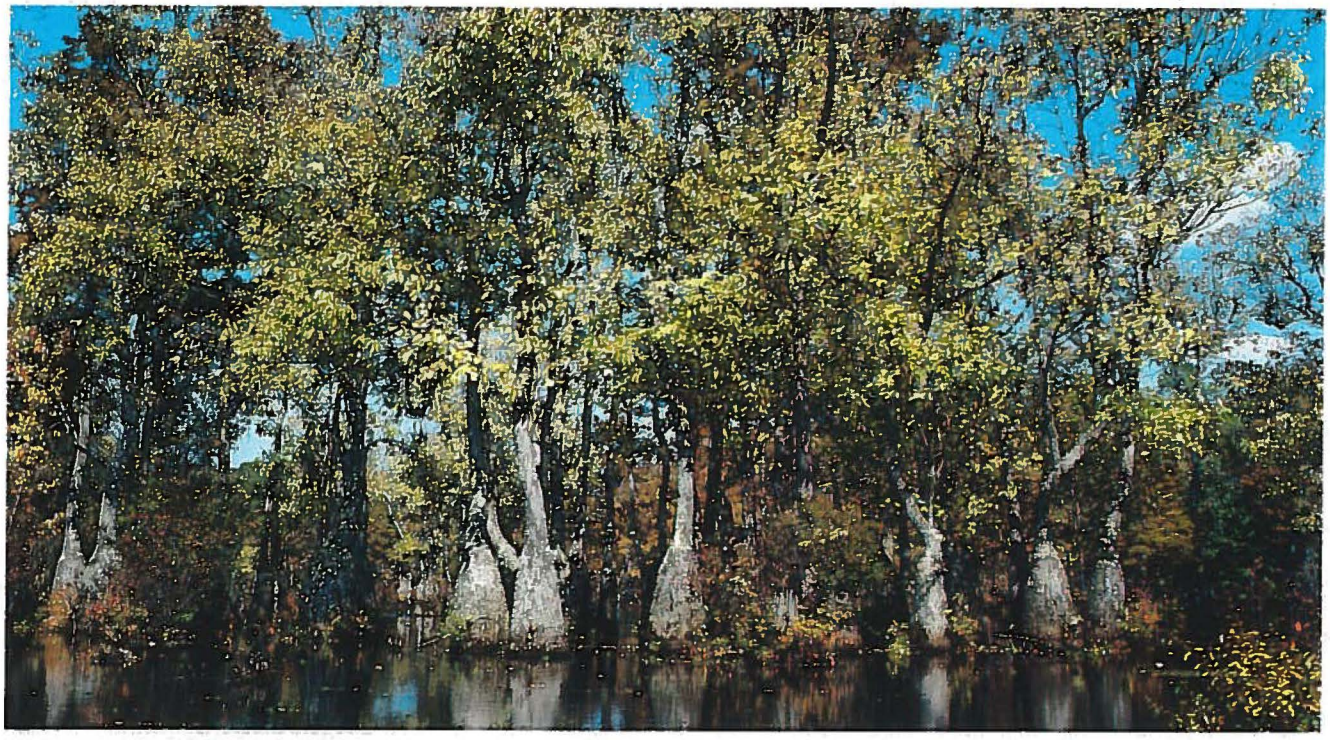


Figure 11. *Ten estuarine drainage areas with the most fresh marsh*

Coastal Forested and Scrub-Shrub Wetlands

Bald cypress swamp near Lake Okeechobee, Florida



Courtesy of Virginia Carter, USGS

Description

Forested and scrub-shrub wetlands are the most abundant types in the Nation's coastal regions. These habitats are characterized as woody communities, periodically inundated or saturated by water during the growing season, and are adapted to the stresses of flooding. Forested and scrub-shrub wetlands are found along rivers, in floodplains, and in low-lying, low-energy areas protected from wave action. Several types of these wetlands are found in both fresh- and salt-water regions.

Most forested and scrub-shrub habitats are found in freshwater areas. Southern freshwater forested swamps, one of the most common types of forested wetlands, are woody communities saturated with water through most or all of the growing season. They are dominated by bald cypress (*Taxodium distichum*) in nutrient-rich areas and pond cypress (*Taxodium ascendens*) in nutrient-poor areas. To survive in water-saturated environments, cypress have wide buttresses and knees (specialized root structures) for aeration. Bottomland hardwood forests, another common forested wetland type, are inundated or saturated periodically during the growing season due to heavy rains. The dominant woody plant species in these communities have adapted to survive, mature, and reproduce in soils that periodically become anaerobic.

> Over 17.3 million acres of forested and scrub-shrub wetlands are in the Nation's coastal areas.
>
> Forests and scrub-shrub account for 63 percent of the Nation's total coastal wetlands.
>
> The Gulf of Mexico region contains almost half of the Nation's forested and scrub-shrub coastal wetlands.

Mangroves are the most common forested wetland communities in nonfreshwater tropical and subtropical regions. They are saturation-tolerant trees growing in brackish to saline waters, uniquely adapted to survive the stresses of both salinity and flooding. While not necessary for mangrove survival, saltwater gives them a competitive advantage over nonsalt-tolerant species. Mangrove communities export organic matter to coastal food chains, stabilize shorelines against erosion, and shelter coastlines from storm damage.

Distribution

Forested and scrub-shrub wetlands account for almost four times more acreage than any other wetlands type.

Regions. The Gulf of Mexico contains more forested scrub-shrub wetlands than any other region (Figure 12), with 48 percent of the national total. The Gulf of Mexico also contains 84 percent of the estuarine forested and scrub-shrub wetlands inventoried by NOAA, due to the mangroves of South Florida.

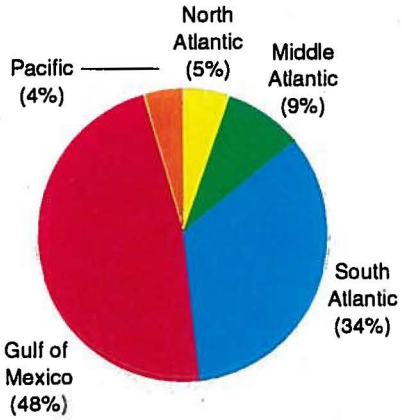


Figure 12. *Distribution of forested and scrub-shrub wetlands by region*

The South Atlantic region ranks second (34 percent), containing one-third of the forested and scrub-shrub total, followed by the Middle Atlantic (8 percent), the North Atlantic (7 percent), and the Pacific (4 percent). The Gulf of Mexico and South Atlantic regions combined account for 80 percent of the national total.

States. Florida, where mangroves fringe most of the southern coastline and extensive inland freshwater swamps, contains more forested and scrub-shrub wetlands than any other state (Figure 13). It contains 39 percent of the national total, nearly four times the amount of second-ranked South Carolina. Seven of the top ten states are in the Gulf of Mexico or South Atlantic regions.

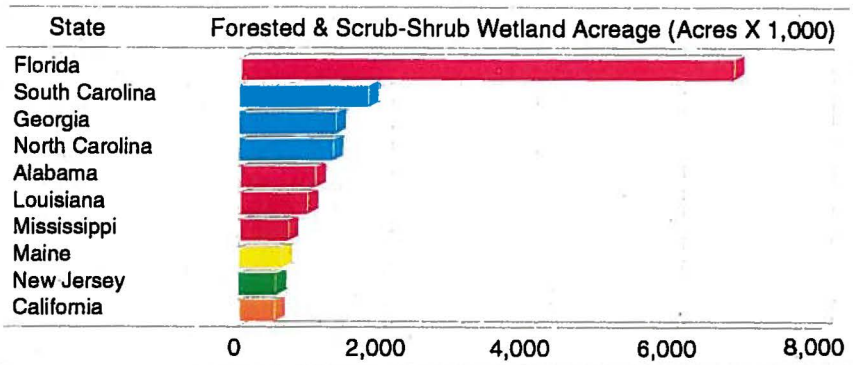


Figure 13. *Ten states with the most forested and scrub-shrub wetlands*

Estuarine Drainage Areas (EDAs). Estuarine drainage areas contain 64 percent of the Nation's coastal forested and scrub-shrub wetlands. The Ten Thousand Islands estuary in Florida contains the greatest amount of forested and scrub-shrub wetlands (Figure 14), accounting for 9 percent of the national total. Albemarle/Pamlico Sounds in North Carolina ranks second with 7 percent of the total. Four of the top eight estuaries are in Florida and account for about one-quarter of the national total for forested and scrub-shrub wetlands. Although the largest estuary overall, Chesapeake Bay ranks seventh, accounting for only 4 percent of the national total. The Pacific and North Atlantic regions have only one estuary in the top 35 estuaries ranked by forested and scrub-shrub wetlands.

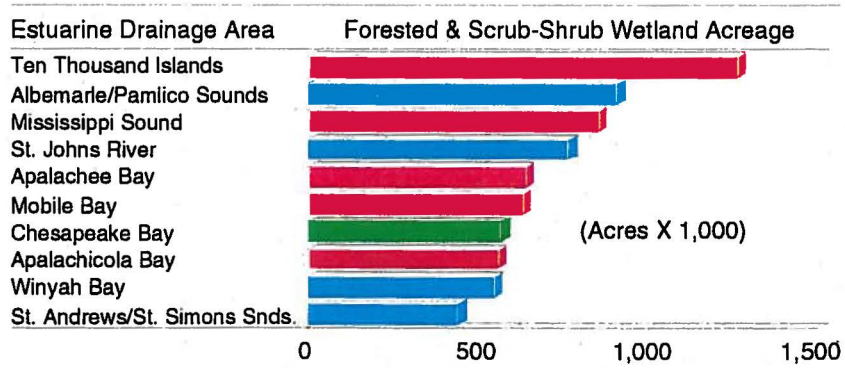


Figure 14. *Ten estuarine drainage areas with the most forested and scrub-shrub wetlands*

Tidal Flats

Tidal flats along the Virginia shore of Chesapeake Bay.

Courtesy of USFWS

Description

Tidal flats are ecologically important areas of the coast and a vital part of estuarine food chains. They are defined as substrate in the intertidal zone, usually consisting of sand and/or silt and clay which is regularly exposed and flooded by tides (Cowardin et al., 1979). In contrast to the other wetland types, tidal flat vegetation is minimal due to unstable sediments (Whitlatch and Young, 1982).

In general, areas with large tidal ranges (e.g., Maine and Washington) have extensive tidal flats, while areas with low tidal ranges (e.g., Louisiana) have less tidal flat acreage. However, Texas has extensive tidal flats, despite its low tidal range. Tidal flats absorb wave energy, reducing the impact of flood and wave damage on the shoreline and neighboring wetland areas (Neal et al., 1984).

Sediment in tidal flats comes from rivers, longshore movement, and offshore to inshore transfer during summer months (Wells and Peterson, 1989). Most sediment along the Atlantic coast and Florida's Gulf coast originates from the continental shelf. The rest of the Gulf coast gets most of its sediment from rivers, primarily the Mississippi River. These sediments are then carried by longshore currents and deposited in low-energy areas (Morton et al., 1983). A unique system of tidal flat formation, caused by long-term redistribution of sediments by wind-driven tides, has occurred in many areas of southern Texas, particularly in Laguna Madre and surrounding areas (Brown et al., 1980).

> Over 1.2 million acres of tidal flats are in the Nation's coastal areas.
>
> Tidal flats account for 5 percent of the Nation's coastal wetlands.
>
> The Gulf of Mexico region contains 42 percent of the Nation's tidal flats.

Tidal flats are the main feeding grounds for coastal shore birds, fish, and many invertebrates. Detritus from nearby salt marshes and plankton from estuarine waters collect on tidal flats and are eaten by primary consumers, which in turn are prey for higher levels of the food chain. Some important invertebrates using tidal flats include commercially and recreationally important species of crabs, oysters, clams, shrimp, and mussels (Whitlatch and Young, 1982).

Distribution

Tidal flats are the least abundant of the four main wetlands types identified in this report. They are, however, the most uniformly distributed wetlands type in the Nation's coastal areas.

Regions. The Gulf of Mexico region contains more tidal flats than any other region, accounting for 42 percent of the national total (Figure 15). The Middle Atlantic region ranks second with 21 percent of the national total, the Pacific region ranks third (17 percent), and the North Atlantic ranks fourth (12 percent).

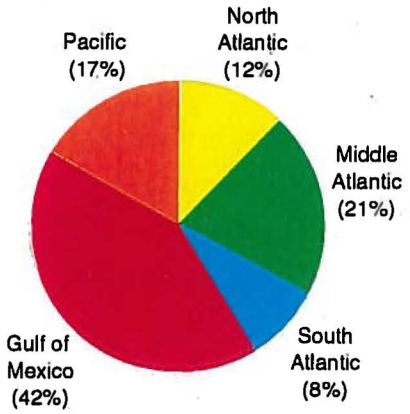


Figure 15. *Distribution of tidal flats by region*

States. Texas contains more tidal flats than any other state (Figure 16), with 23 percent of the national total. Florida ranks second, with 18 percent of the total. Most of Florida's tidal flats occur along its Gulf coast. Combined with Texas, they make up 92 percent of the region's total. Virginia contains more tidal flats than any other state in the Middle Atlantic region (9 percent of the national total). California is the top-ranked Pacific state (8 percent). Maine, with areas of extreme tidal fluctuations, contains the most tidal flats by far in the North Atlantic (9 percent). North Carolina, the only state from the South Atlantic in the top ten, contains only 4 percent of the Nation's tidal flats.

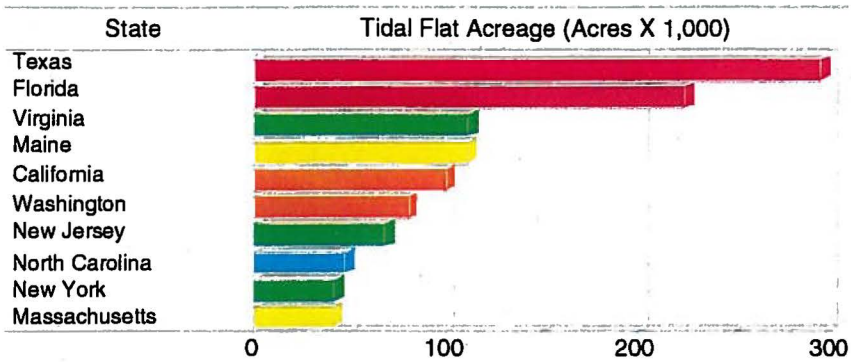


Figure 16. *Ten states with the most tidal flats*

Estuarine Drainage Areas (EDAs). The estuarine drainage areas with the most tidal flats occur along the coasts of the northeastern and northwestern states, and the Gulf of Mexico. Laguna Madre contains more tidal flats than any other estuary (Figure 17), with 14 percent of the national total and 23 percent of the regional total. Other EDAs in the Gulf of Mexico with substantial tidal flats include Charlotte Harbor, Ten Thousand Islands, and Tampa Bay. Puget Sound and Chesapeake Bay were the top-ranked estuaries in the Pacific and Middle Atlantic regions, respectively, each with 9 percent of the national total. Albemarle/Pamlico Sounds is the top-ranked estuary in the South Atlantic with 2 percent of the national total, while Casco Bay (ranked 15th) ranks first in the North Atlantic with 2 percent also.

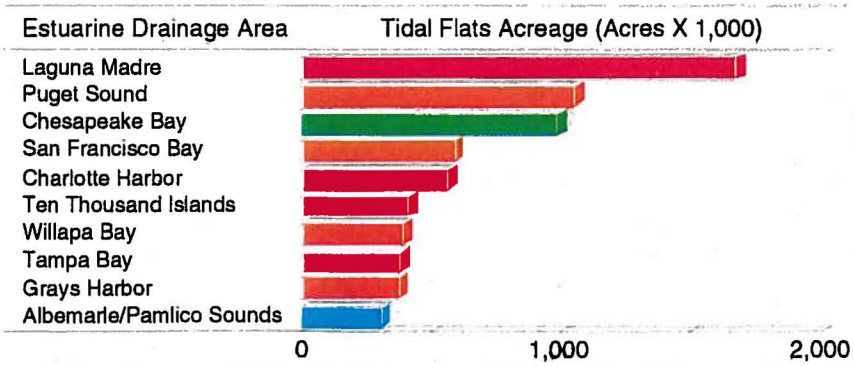


Figure 17. *Ten estuarine drainage areas with the most tidal flats*

Concluding Comments

The U.S. coastal population will increase to an estimated 127 million persons by 2010, a 60 percent increase from the 1960 figure (Culliton et al., 1990). In 1988, the population density of the Nation's coastal counties was four times the national average. As population density increases in coastal areas, wetlands losses are likely to continue if preventive actions are not taken.

Interpreting the Data

Although the data used to compile this report are the most complete and up-to-date available nationwide, careful interpretation is required. For example, grid-sampled data are not intended to be accurate enough to make local, site-specific management decisions. Nor are they intended to estimate accurately nonabundant habitat types on any given map. Nevertheless, when aggregated across geographic areas such as an estuary or county, the data provide an accurate summary of the general distribution and abundance of major wetland types (Appendix D).

Inconsistencies or differences in classification among some NWI maps should also be considered. For example, some of the earliest NWI maps did not use the detailed classification system that is the present standard. Consequently, on some older maps, the salinity or tidal regime of a particular wetland was impossible to determine. Hence, a new "unspecified" category had to be created (Appendix C).

Another important consideration is the age of the original photography used to produce NWI maps. How accurately the grid-sampled data represent present conditions depends on the rate of wetlands losses or gains since the photographs were taken. The dates of aerial photography ranged from 1972 to 1985, with 31 percent of the maps occurring between 1982 and 1985, and 56 percent occurring after 1979 (Table 2). If wetlands are still declining nationwide, as indicated by many researchers (Frayer et al., 1983), then the data presented in this report may overestimate existing wetlands acreage in certain areas such as Louisiana.

Finally, not all the maps needed in the coastal areas were available from NWI. Map availability in tidally-influenced areas was nearly 100 percent, but certain areas, mainly inland portions of estuarine drainage areas, were not completely mapped. Therefore, rankings might have been different, especially for freshwater wetlands, if more maps were available.

Uses

This data base provides an inexpensive and relatively simple method for estimating accurately the abundance and distribution of the Nation's coastal wetlands at a level of aggregation appropriate for national, regional, and even estuary-specific assessments. Products from this project complement the work of the FWS, and provide a useful management tool for coastal resource managers at all levels of government, particularly Federal agencies with responsibilities for wetlands management, regulation, and conservation (e.g., Army Corps of Engineers, Environmental Protection Agency, FWS, and NOAA). For the first time, a "balance sheet" exists that estimates the amounts and types of coastal wetlands found throughout the conterminous U.S., giving natural resource managers a comprehensive view of wetlands in their state's coastal counties and estuaries, the region overall, and for the Nation. These baseline data for the Nation's coastal wetlands add significantly to the understanding of estuarine and

Table 2. Percentage of Aerial Photography Coverage by Time Period and State

	Year of Photography				
State	**1972-1974**	**1975-1978**	**1979-1981**	**1982-1985**	**N/A**
Maine	10	54	-	-	36
New Hampshire	26	71	-	-	3
Massachusetts	2	97	-	-	1
Rhode Island	-	100	-	-	-
Connecticut	12	10	78	-	-
New York	7	10	66	1	16
New Jersey	9	72	6	-	13
Pennsylvania	6	-	66	26	2
Delaware	-	8	61	28	3
Maryland	2	23	43	24	8
Virginia	50	32	1	16	1
North Carolina	-	7	2	84	7
South Carolina	18	3	-	79	-
Georgia	7	-	36	57*	-
Florida	10	6	11	50	23
Alabama	-	-	96	4	-
Mississippi	18	8	37	33	4
Louisiana	-	67	6	24	3
Texas	-	<1	59	40	<1
Washington	17	5	60	16	2
Oregon	10	25	15	35	15
California	30	37	<1	23*	10

Abbreviations: N/A, Not Available

* Includes maps dated through 1988.

coastal systems and should improve the ability to manage them effectively.

The data are being incorporated into the National Estuarine Inventory (NEI) and will be used by NOAA in conjunction with other information such as land use, coastal pollution, distribution of estuarine fishes and invertebrates, and the status of classified shellfish waters, to develop a national estuarine assessment capability.

* * *

Comments on this report or questions about current and future estuarine activities should be addressed to:

Strategic Assessment Branch,
Ocean Assessments Division,
Office of Oceanography and
Marine Assessment, N/OMA31
National Ocean Service,
National Oceanic and
Atmospheric Administration
6001 Executive Blvd.
Rockville, Maryland 20852

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References

Alexander, C.E., M.A. Broutman, and D.W. Field. 1986. *An inventory of coastal wetlands of the USA.* Strategic Assessment Branch, National Oceanic and Atmospheric Administration. Rockville, MD. 25 pp.

Beeftink, W. G. 1977. Salt Marsh. ed. R.S. Barnes. *The Coastline*, pp. 93-121.

Bell, F.W. 1989. *Application of wetland valuation theory to Florida fisheries.* Tallahassee, FL: Florida Sea Grant College. 118 pp.

Bonnor, G.M. 1975. The error of area estimates from dot grids. *Canadian Journal of Forest Research* (5)10.

Brown, L. F., Jr., J.L. Brewton, T. J. Evans, J. H. McGowen, W. A. White, C. G. Groat, and W. L. Fisher. 1980. Environmental geological atlas of the Texas coastal zone - Brownsville, Harlingen area. *Bur. Econ. Geology.* 140 pp.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. La Roe. 1979. *Classification of wetlands and deepwater habitats of the United States.* FWS/OBS-79/31. U.S. Fish and Wildlife Service. Washington, D. C.: U.S. Government Printing Office. 101 pp.

Culliton, T. J., M. A. Warren, T. R. Goodspeed, D. G. Remer, C. M. Blackwell, and J. J. McDonough, III. 1990. *50 years of population change along the Nation's coasts, 1960-2010.* Strategic Assessment Branch, Office of Oceanography and Marine Assessment. Rockville, MD. 41 pp.

Dahl, T.E. 1987. Wetlands mapping in the coastal zone - progress towards creating a national data base. In: *Coastal Zone '87 Proceedings* (May 26-29, 1987, Seattle, WA) 1:465-473.

Feierabend, J.S. and J.M. Zelazny. 1987. *Status report on our Nation's wetlands.* National Wildlife Federation, Washington, D.C. 46 pp.

Field, D.W., C.E. Alexander, and M.A. Broutman. 1988. Toward developing an inventory of U.S. coastal wetlands. *Marine Fisheries Review* 50(1):40-46.

Frayer, W.E., T.J. Monahan, D.C. Bowden, and F.A. Graybill. 1983. *Status and trends of wetlands and deepwater habitats in the coterminous United States, 1950s to 1970s.* Colorado State University, Department of Forest and Wood Sciences. Ft. Collins, CO. 32 pp.

Haddad, K.D. and B.A. Harris. 1985. Use of remote sensing to assess estuarine habitats. ed. T. Magoon. In: *Proceedings of the Fifth Symposium on Coastal and Ocean Management - Coastal Zone '85.* American Society of Engineers, New York, N.Y.

Mager, A., Jr. and G.W. Thayer. 1986. National Marine Fisheries Service habitat conservation efforts in the southeast region of the United States from 1981 through 1985. *Marine Fisheries Review* 48(3):1-8.

Maltby, E. 1986. *Waterlogged wealth.* Institute for Environment and Development, Washington, D.C. 200 pp.

May, L.N., Jr. 1986. An evaluation of Landsat MSS digital data for updating habitat maps of the Louisiana coastal zone. *Photogrammetric Engineering and Remote Sensing* (52)8:1147-1158.

Mitsch, W.J. and J.G. Gosselink. 1986. *Wetlands.* Von Nostrand Reinhold Company Inc., New York, NY. 539 pp.

Morton, R. A., O. H. Pilkey, Jr., O. H. Pilkey, Sr., and W. J. Neal. 1983. *Living with the Texas shore.* Duke University Press. Durham, NC. 190 pp.

National Oceanic and Atmospheric Administration. 1985. *National estuarine inventory data atlas, volume 1: Physical and hydrologic characteristics.* Strategic Assessment Branch, Office of Oceanography and Marine Assessment, Rockville, MD. 103 pp.

National Oceanic and Atmospheric Administration. 1986. *National estuarine inventory data atlas, volume 2: Land use characteristics.* Strategic Assessment Branch, Office of Oceanography and Marine Assessment, Rockville, MD. 40 pp.

National Oceanic and Atmospheric Administration. 1986. *Summary of proceedings: NOAA coastal wetlands workshop.* Strategic Assessment Branch, Office of Oceanography and Marine Assessment, Rockville, MD. 11 pp.

National Oceanic and Atmospheric Administration. 1988. *National estuarine inventory: Data atlas, volume 4: Public recreation facilities in coastal areas.* Strategic Assessment Branch, Office of Oceanography and Marine Assessment, Rockville, MD. 156 pp.

National Oceanic and Atmospheric Administration. 1989. *National estuarine inventory: Data atlas, volume 3: Coastal wetlands - New England region.* Strategic Assessment Branch,

Office of Oceanography and Marine Assessment, Rockville, MD. 20 pp.

National Oceanic and Atmospheric Administration. 1990. *Estuaries of the United States: Vital statistics of a National resource base.* Strategic Assessment Branch, Office of Oceanography and Marine Assessment, Rockville, MD. 79 pp.

Neal, W. J., W. C. Blakeney, Jr., O. H. Pilkey, Jr., and O. H. Pilkey, Sr. 1984. *Living with the South Carolina shore.* Durham, NC: Duke University Press. 205 pp.

Teal, J. and M. Teal. 1969. *Life and death of the salt marsh.* New York, NY: Audubon/ Ballantine Books. 274 pp.

Tiner, R.W., Jr. 1984. *Wetlands of the United States: Current status and recent trends.* U.S. Fish and Wildlife Service, National Wetlands Inventory. Washington, D.C. 59 pp.

Wells, J. T. and C. H. Peterson. 1989. *Atlantic and gulf coastal barriers.* Morehead City, N.C.: University of North Carolina at Chapel Hill. 20 pp.

Whitlatch, R.B. and M. W. Young. 1982. *The ecology of New England tidal flats: A community profile.* FWS/OBS 81/01. U.S. Fish and Wildlife Service, Biological Services Program, Washington, D.C.: U.S. Government Printing Office. 125 pp.

Appendices

Appendix A. NOAA's National Estuarine Inventory

Appendix B. NOAA Grid Sampled vs. FWS Digital Data (NWI)

Appendix C. Coastal Wetland Plant Classification for the Nation

Appendix D. Coastal Wetlands by Region, State, EDA, and County

The Program

The goal of the National Estuarine Inventory (NEI) is to develop a comprehensive framework for evaluating the health and status of the Nation's estuaries and to bring estuaries into focus as a national resource base. The principal spatial unit for which all data are organized is the *estuarine drainage area, or EDA,* defined as *"that land and water component of an entire watershed that most directly affects an estuary"* (NOAA, 1985). EDA boundaries coincide, where possible, with U.S. Geological Survey (USGS) Hydrologic Cataloging Units within which the head of tide of an estuary falls. These data are being used to make comparisons, rankings, statistical correlations, and other analyses related to resource use, environmental quality, and economic values among estuaries.

The cornerstone of the NEI is the *National Estuarine Inventory Data Atlas, Volume 1: Physical and Hydrologic Characteristics* (NOAA, 1985). This atlas identifies 92 of the most important estuaries of the conterminous U.S. and presents information through maps and tables. These estuaries represent approximately 90 percent of the estuarine water surface area and 90 percent of the freshwater inflow to marine waters of the Atlantic Coast, Pacific Coast, and Gulf of Mexico.

Volume 2, Land Use Characteristics, presents area estimates for seven categories and 24 subcategories of land use, as well as 1970 and 1980 population estimates (NOAA, 1986a). Land use estimates come from the USGS Land Use and Land Cover Program and are compiled for three spatial units: (1) estuarine drainage area; (2) USGS hydrologic cataloging unit; and (3) counties intersecting EDAs. Population estimates are compiled for EDAs only.

Volume 3, Coastal Wetlands - New England Region (NOAA, 1989) presents wetlands acreage estimates for 12 wetland types in 16 EDAs and 42 counties from Maine to Connecticut. The data are a subset of those presented in this report. Computer-generated color maps of selected EDAs are also presented.

Volume 4, Public Recreation Facilities in Coastal Areas (NOAA, 1988), presents data for Federal, state, and local recreation facilities in 327 counties bordering tidally-influenced water and 25 estuary groups. A total of 1,589 public agencies that owned and/or managed outdoor recreation sites and facilities in coastal areas provided data for the inventory.

Other NOAA projects contributing data and information to the NEI include the distribution of estuarine-dependent living marine resources, the quality of shellfish growing waters and related projects, the National Coastal Pollutant Discharge Inventory, and the Inventory of Outdoor Coastal Recreation Facilities. The NEI represents the most consistent and comprehensive set of data developed to describe the Nation's estuarine resource base.

Additional Activities

A number of additional NEI activities are now under way or planned. Based on the review of *Volume 1* of the NEI by estuarine scientists and state and Federal resource managers, several areas have been identified for improvement in future editions.

New Estuaries Added. New estuaries of local or regional importance have been added. Eight estuaries in Oregon have been added due to their biological importance to coastal fisheries. Five new EDAs have been delineated to represent the original Mississippi Delta Region because of a need for increased resolution. A limited number of additions to other portions of the Pacific, the Atlantic, and Gulf of Mexico regions have also been made.

A new NOAA report, *Estuaries of the United States, Vital Statistics of a National Resource Base,* updates the NEI. The report provides information on an expanded number of EDAs (102), including physical and hydrologic features, natural resources, economic activities, and susceptibility to pollution. These EDAs and the counties falling within their boundaries are the units for which all NEI data are now collected. The wetlands data presented in Appendix D are organized according to this framework.

Improved Salinity Resolution. Another recommendation was to improve the resolution of the salinity regimes mapped for each estuary. Based on a study in Mobile Bay, Alabama, to determine if bottom and surface salinities could be mapped in zones of five parts per thousand increments for periods of high and low flow, an effort to compile data for EDAs along the Gulf Coast is now nearing completion. This more detailed depiction will characterize the effects of freshwater inflow, tides, and wind on salinity patterns more completely than the three average annual salinity zones described

in *Volume I* of the NEI.

Other Projects. A project focusing on the agricultural use of 28 selected pesticides on 71 crops in 78 EDAs was completed in 1989. Future NEI volumes on additional topics are also planned. For example, a project to determine the distribution and abundance of fishes and invertebrates in estuaries began in 1985. To date, information has been compiled on 103 species in 83 estuaries on the West, Gulf of Mexico, and South Atlantic coasts. Another project initiated in 1985 compiles information on the status of shellfish growing waters in EDAs.

Appendix B - NOAA Grid Sampled vs. FWS Digital Data

As a result of NOAA's Coastal Wetlands Workshop (April 1986), the U.S. Geological Survey's National Mapping Division helped to determine if the 45-acre resolution adequately estimated coastal wetlands acreage (NOAA 1986b). Equations to determine acceptable sample size were calculated at several levels of error and degrees of confidence. These calculations indicated the 45-acre cell size and subsequent 800-plus sampling points per 1:24,000-scale map were adequate for developing wetlands data at the national, regional, and estuarine level (see "Data Collection," page 2, for more detail).

Digital data were compared to grid-sampled estimates for 39 1:24,000 scale NWI maps in Barnegat Bay, New Jersey (see below). The U.S. Fish and Wildlife Service developed the digital data using the Map Overlay Statistical System (MOSS).

Results indicate that abundant wetland types (e.g., unspecified salt marsh in New Jersey) are estimated extremely well, while nonabundant wetland types (e.g., tidal fresh marsh) are sometimes close to digital estimates, but are generally more variable.

Comparison of Grid-Sampled Data (NOAA) to FWS Digital Data (NWI) for 39 1:24,000 Scale NWI Maps in Barnegat Bay, New Jersey (Acres x 100)

Habitat	NOAA	NWI
Salt Marsh		
Brackish	2	3
Unspecified	603	604
Fresh Marsh		
Nontidal	-	-
Tidal	2	2
Unspecified	55	59
Forested and Scrub-Shrub		
Estuarine	2	3
Nontidal fresh	-	-
Tidal fresh	1	3
Unspecified	2,295	2,294
Tidal Flats	452	457
Palustrine Farmed	55	58
Open Water		
Fresh	76	84
Nonfresh	2,232	2,236
Upland	8,500	8,474
Total	14,275	14,277

Appendix C - Coastal Wetlands Plant Classifications

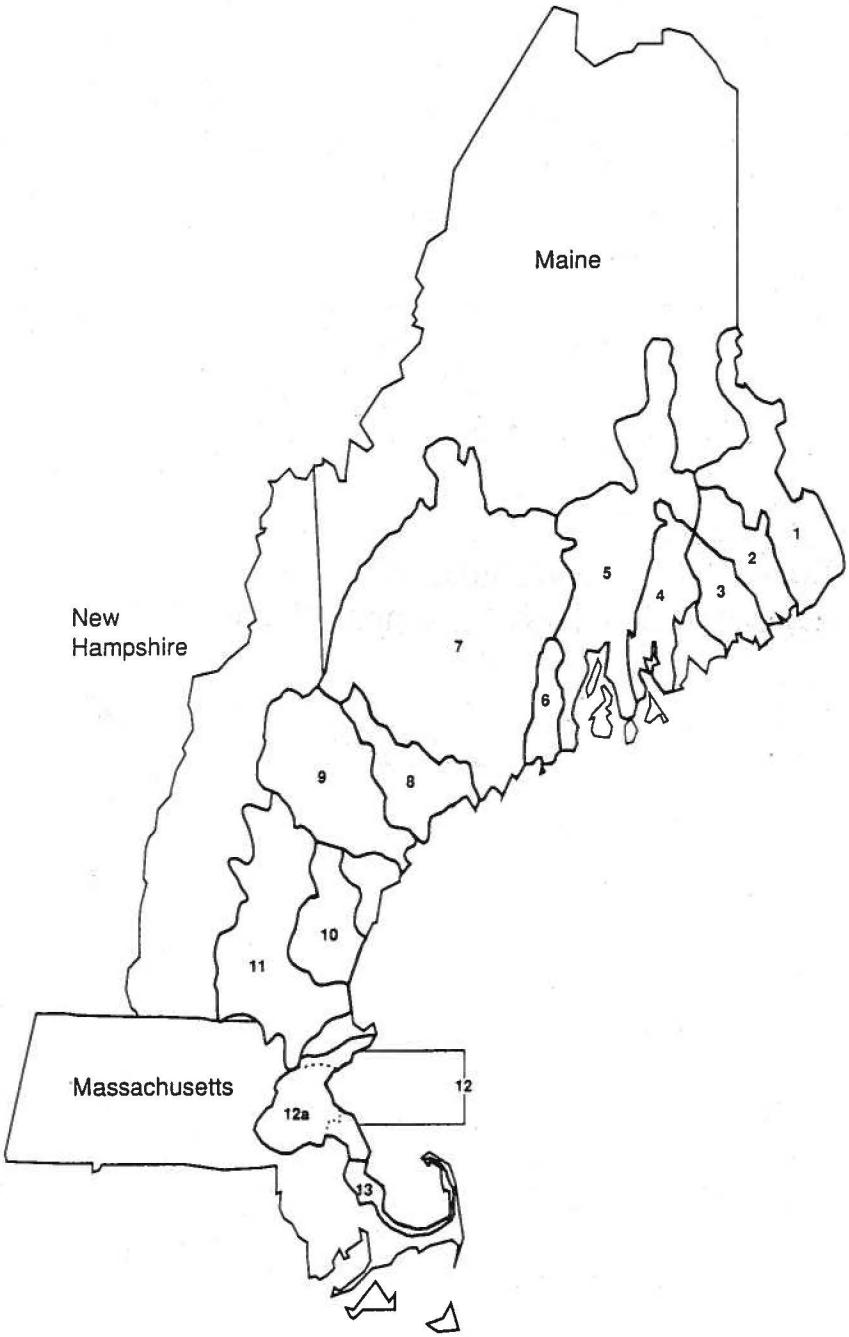
NOAA	FWS[a]	Common Plant Communities			
Salt Marsh					
Brackish	Estuarine Intertidal emergent regularly and irregularly flooded salinity ≥ 0.5 ppt and ≤ 30 ppt	common reed	*(Phragmites australis)*	pickleweed	*(Salicornia virginica)*
		salt hay grass	*(Spartina patens)*	narrow-leaved cattail	*(Typha angustifolia)*
		smooth cordgrass	*(Spartina alterniflora)*	black needlerush	*(Juncus roemererianus)*
		three-square	*(Scirpus olneyi)*	salt grass	*(Distichlis spicata)*
High	Estuarine intertidal emergent irregularly flooded salinity ≥ 30 ppt	salt hay grass	*(Spartina patens)*	California cordgrass	*(Spartina foliosa)*
		salt grass	*(Distichlis spicata)*	sea blite	*(Suaeda linearis)*
		black grass	*(Juncus gerardii)*	black needlerush	*(Juncus roemerianus)*
Low	Estuarine intertidal emergent regularly or irregularly exposed salinity ≥ 30 ppt	smooth cordgrass	*(Spartina alterniflora)*	salt grass	*(Distichlis spicata)*
Unspecified	Estuarine intertidal emergent	see "Brackish", "High", and "Low"			
Fresh Marsh					
Nontidal	Lacustrine littoral emergent nontidal	arrowheads	*(Sagittaria spp.)*	waterlilies	*(Nynphaea odorata)*
	Palustrine emergent nontidal	pickerelweed	*(Pontederia cordata)*	cattails	*(Typha latifolia)*
	Riverine lower perennial emergent nontidal	arrow arum	*(Peltandra virginica)*	common reed	*(Phragmites australis)*
		waterfoil	*(Myriophyllum spicatum)*	bull tongue	*(Sagittoria falcata)*
		duckweed	*(Lemna minor)*	maidencane	*(Panicum hemitomon)*
Tidal	Lacustrine littoral emergent tidal	spatterdock	*(Nuphar luteum)*	river bulrush	*(Scirpus fluvialilis)*
	Palustrine emergent tidal	cattails	*(Typha latifolia)*	arrow arum	*(Peltandra virginica)*
	Riverine tidal or lower perennial emergent tidal	arrowheads	*(Sagittaria spp.)*	wild rice	*(Zizania aquatica)*
		soft stemmed bulrush	*(Scirpus validos)*	spike-rush	*(Eleocharis spp.)*
		rice cutgrass	*(Leersia oryzoides)*	three-square rush	*(Scirpus americanus)*
Unspecified	Lacustrine littoral emergent Palustrine emergent Riverine tidal or lower perennial emergent	see "Nontidal" and "Tidal"			
Forested and Scrub-Shrub					
Estuarine	Estuarine intertidal forested or scrub-shrub	black mangrove	*(Avicennia germinans)*	red mangrove	*(Rizophora mangle)*
		marsh elder	*(Iva frutescens)*	douglas spiraea	*(Spiraea douglasii)*
Nontidal Fresh	Palustrine forested or scrub-shrub nontidal	bald cypress	*(Taxodium distichum)*	lodge pole pine	*(Pinus contorte)*
		red maple	*(Acer rubrum L.)*	alders	*(Alnus spp.)*
		willow	*(Salix spp.)*	black gum	*(Nyssa sylvatica)*
		sitka spruce	*(Picea sitchemsis)*	black willow	*(Salix nigra)*
Tidal Fresh	Palustrine forested or scrub-shrub tidal	buttonbush	*(Cephalanthus occidentalis)*	swamp rose	*(Rosa palustris)*
		green ash	*(Fraxinus pennsylvanica)*	same as "Nontidal Fresh"	
Unspecified	Palustrine forested or scrub-shrub	see "Nontidal Fresh"			
Tidal Flats	Estuarine intertidal[b] Marine intertidal	sea lettuce	*(Ulva lactuca)*	green algae	*(Entermorpha spp.)*
		smooth cordgrass	*(Spartina alterniflora)*	salt wort	*(Bastis maritima)*
Open Water					
Fresh	Lacustrine limnetic or littoral[c] Palustrine Riverine	pond weeds	*(Potamogeton spp.)*	duckweed	*(Lemna minor)*
		water lily	*(Nynphaea odorata)*	naiads	*(Najas spp.)*
		spatterdock	*(Nuphar luteum)*	water hyacinth	*(Eichhornia crassipes)*
Non-Fresh	Estuarine or Marine subtidal[d]	sea lettuce	*(Ulva lactuca)*	shoal grass	*(Halodule beaudettei)*
		eel grass	*(Zostera marina)*	turtle grass	*(Thalassia testudinum)*
		widgeon grass	*(Ruppia marina)*		

[a] Abbreviations: ppt, parts per thousand
[a] Based on Cowardin et al., 1979
[b] Includes aquatic beds, beach/bars, flats, reefs, rocky shores, streambeds, and unconsolidated shores.
[c] Includes aquatic beds, beach/bars, flats, open water, rocky bottoms, reefs, rocky shores, streambeds, unconsolidated bottoms and unconsolidated shores.
[d] Includes aquatic beds, open water, rocky bottoms, reefs, and unconsolidated bottoms.

Appendix D

Data Tables: Coastal Wetlands by
Region, State, Estuarine Drainage Area, and County

North Atlantic



Estuarine Drainage Areas

1 Passamaquoddy Bay
2 Englishman Bay
3 Narraguagus Bay
4 Blue Hill Bay
5 Penobscot Bay
6 Muscongus Bay
7 Sheepscot Bay
8 Casco Bay
9 Saco Bay
10 Great Bay
11 Merrimack River
12 Massachusetts Bay
12a Boston Bay
13 Cape Cod Bay

Note: Sub-estuaries are in italics.

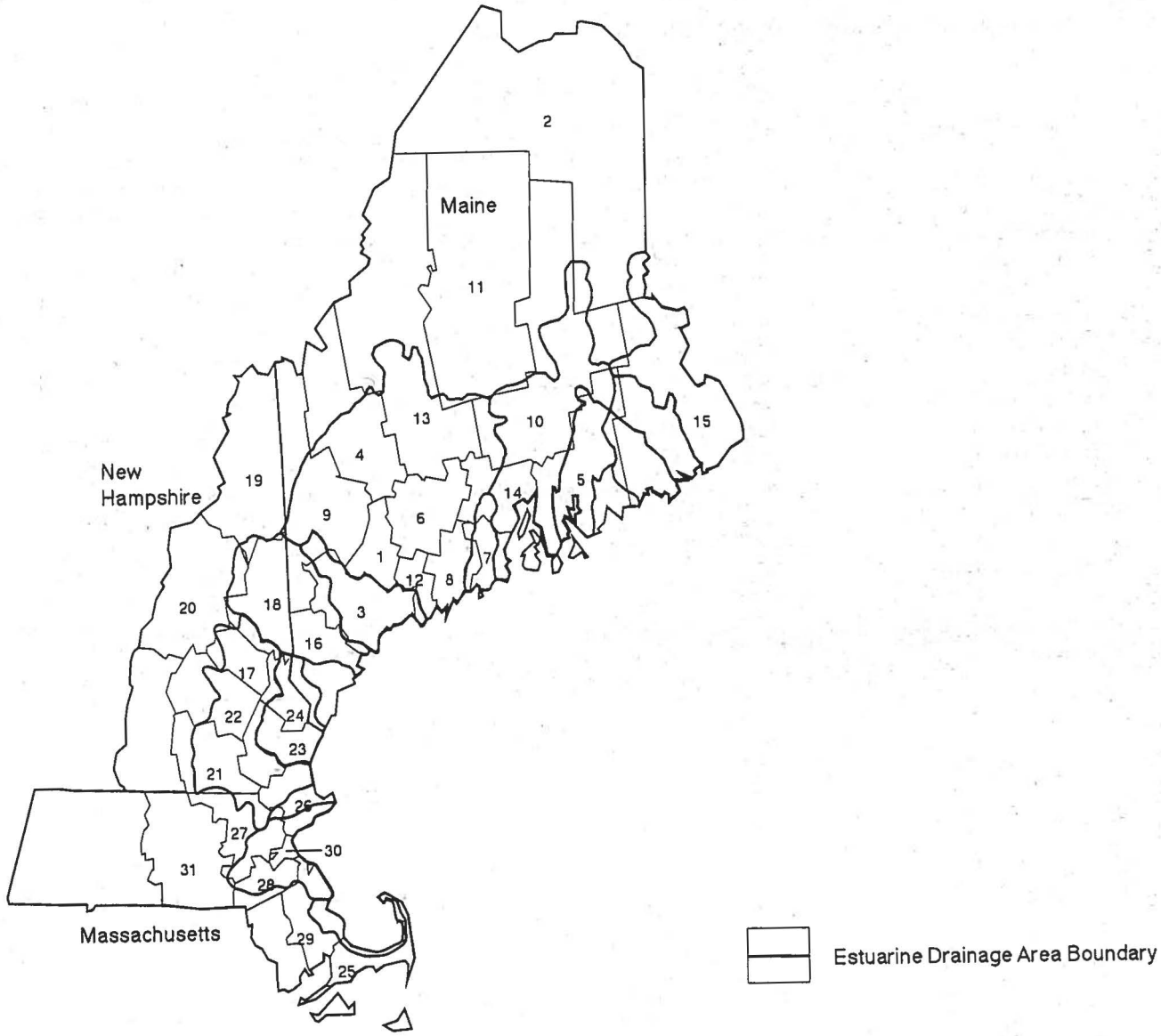
Coastal wetlands by estuarine drainage area (Acres X 100)

Estuarine Drainage Area[a]	Salt Marsh			Fresh Marsh				Forested and Scrub-Shrub					Tidal Flats[b]	
	Brackish	Unsp.	Subtotal[b]	Non Tidal	Tidal	Unsp.	Subtotal[b]	Est.	Fresh (Unsp.)	Non Tidal Fresh	Tidal Fresh	Subtotal[b]		Total
1 Passamaquoddy Bay (83)	0	10	10 (1)	0	0	51	51 (3)	1	1,384	1	0	1,386 (91)	80 (5)	1,526
2 Englishman Bay (91)	0	15	15 (1)	0	0	36	37 (3)	0	954	27	0	982 (86)	105 (9)	1,138
3 Narraguagus Bay (78)	0	23	23 (4)	4	0	1	4 (1)	0	212	239	0	450 (79)	93 (16)	571
4 Blue Hill Bay (88)	0	2	2 (0)	13	0	3	16 (3)	0	64	422	0	486 (84)	73 (13)	576
5 Penobscot Bay (41)	0	10	10 (1)	21	0	7	28 (3)	0	116	659	0	775 (79)	166 (17)	979
6 Muscongus Bay (17)	0	2	2 (2)	0	0	1	1 (1)	0	56	2	0	59 (64)	29 (32)	91
7 Sheepscot Bay (7)	0	50	50 (16)	5	18	5	28 (9)	0	66	41	10	117 (37)	119 (38)	314
8 Casco Bay (65)	1	23	24 (6)	14	0	0	15 (4)	0	0	166	0	167 (43)	186 (48)	391
9 Saco Bay (47)	0	29	29 (6)	39	0	1	41 (8)	0	15	398	0	413 (83)	18 (4)	500
10 Great Bay (61)	0	27	27 (5)	1	0	18	19 (4)	0	392	4	0	396 (78)	67 (13)	509
11 Merrimack River (45)	0	23	23 (4)	1	0	47	48 (8)	0	526	9	0	534 (87)	11 (2)	616
12 Massachusetts Bay	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
12a Boston Bay (100)	0	18	18 (4)	2	0	35	37 (8)	0	242	63	0	306 (69)	79 (18)	441
13 Cape Cod Bay (100)	0	106	106 (23)	7	0	18	24 (5)	0	53	35	3	91 (20)	242 (52)	464
North Atlantic Total	1	337	337 (4)	108	18	223	350 (4)	1	4,082	2,065	13	6,162 (76)	1,266 (16)	8,115

Abbreviations: Unsp., Unspecified; Est., Estuarine; N/A, Not Available

a. Values in parentheses represent the percent of the EDA grid sampled by NOAA. Areas with less than 100 percent coverage may not be completely mapped by the U.S. Fish and Wildlife Service.

b. Values in parentheses represent the percent of total EDA wetlands grid sampled by NOAA.


Maine
New Hampshire
Massachusetts
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Estuarine Drainage Area Boundary

Coastal wetlands by county (Acres X 100)

State/County[a]	Salt Marsh				Fresh Marsh			Forested and Scrub-Shrub					Tidal Flats[b]	
	Brackish	Unsp.	Subtotal[b]	Non Tidal	Tidal	Unsp.	Subtotal[b]	Est.	Fresh (Unsp.)	Non Tidal Fresh	Tidal Fresh	Subtotal[b]		Total
MAINE														
1 Androscoggin	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2 Aroostook (3)	0	1	1 (0)	0	0	2	2 (0)	0	451	0	0	451 (100)	0 (0)	453
3 Cumberland (72)	1	48	48 (10)	18	1	0	18 (4)	0	0	234	2	236 (48)	185 (38)	488
4 Franklin	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5 Hancock (85)	0	11	11 (1)	29	0	9	38 (3)	0	210	808	0	1,018 (77)	263 (20)	1,329
6 Kennebec (<1)	0	0	0 (0)	0	0	0	0 (0)	0	0	0	0	0 (0)	0 (0)	0
7 Knox (28)	0	1	1 (1)	0	0	1	1 (1)	0	49	5	0	54 (49)	55 (50)	110
8 Lincoln (59)	0	15	15 (7)	1	0	6	7 (3)	0	99	15	0	114 (53)	78 (37)	214
9 Oxford (7)	0	0	0 (0)	13	0	0	13 (14)	0	0	77	0	77 (86)	0 (0)	90
10 Penobscot (14)	0	0	0 (0)	17	0	6	22 (4)	0	23	523	0	546 (96)	2 (0)	570
11 Piscataquis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12 Sagadahoc (59)	0	39	39 (23)	4	17	0	22 (13)	0	0	29	8	37 (22)	74 (43)	173
13 Somerset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
14 Waldo (24)	0	6	6 (7)	0	0	1	1 (1)	0	17	33	0	51 (54)	36 (38)	93
15 Washington (88)	0	48	48 (1)	0	0	91	91 (3)	1	2,833	99	0	2,933 (87)	297 (9)	3,369
16 York (100)	0	45	45 (7)	23	0	12	35 (5)	0	390	180	0	570 (82)	48 (7)	699
Subtotal	**1**	**213**	**213 (3)**	**105**	**18**	**127**	**250 (3)**	**1**	**4,073**	**2,003**	**10**	**6,087 (80)**	**1,039 (14)**	**7,589**
NEW HAMPSHIRE														
17 Belknap	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
18 Carroll (3)	0	0	0 (0)	1	0	0	1 (5)	0	0	17	0	17 (95)	0 (0)	18
19 Coos	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20 Grafton	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
21 Hillsborough (71)	0	0	0 (0)	1	0	27	28 (12)	0	208	1	0	209 (88)	0 (0)	237
22 Merrimack	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
23 Rockingham (68)	0	54	54 (11)	0	0	21	21 (4)	0	398	0	0	398 (78)	39 (8)	512
24 Strafford (39)	0	2	2 (2)	0	0	3	4 (4)	0	69	1	0	70 (75)	18 (19)	94
Subtotal	**0**	**56**	**56 (7)**	**2**	**0**	**51**	**54 (6)**	**0**	**675**	**19**	**0**	**694 (81)**	**57 (7)**	**861**
MASSACHUSETTS														
25 Barnstable (100)	1	139	140 (34)	8	0	20	29 (7)	0	31	66	5	101 (24)	147 (35)	416
26 Essex (100)	0	181	181 (27)	0	0	34	34 (5)	0	372	0	0	372 (56)	79 (12)	667
27 Middlesex (100)	0	0	0 (0)	2	0	30	32 (6)	0	408	131	0	540 (94)	0 (0)	572
28 Norfolk (100)	0	10	10 (3)	0	0	17	18 (6)	0	203	53	0	256 (83)	26 (8)	309
29 Plymouth (100)	0	76	76 (9)	0	0	127	128 (14)	0	598	25	0	624 (70)	61 (7)	889
30 Suffolk (100)	0	3	3 (8)	1	0	6	7 (24)	0	3	0	0	3 (11)	18 (57)	32
31 Worcester (71)	0	1	1 (0)	0	0	32	32 (5)	0	583	16	0	599 (95)	1 (0)	633
Subtotal	**1**	**410**	**411 (12)**	**12**	**0**	**267**	**279 (8)**	**1**	**2,199**	**291**	**5**	**2,495 (71)**	**332 (9)**	**3,518**
North Atlantic Total	**2**	**679**	**681 (6)**	**120**	**18**	**445**	**583 (5)**	**2**	**6,947**	**2,313**	**14**	**9,276 (78)**	**1,428 (12)**	**11,968**

Abbreviations: Unsp., Unspecified; Est., Estuarine; N/A, Not Available

a. Values in parentheses represent the percent of county grid sampled by NOAA. Areas with less than 100 percent coverage may not be completely mapped by the U.S. Fish and Wildlife Service.

b. Values in parentheses represent the percent of total county wetlands grid sampled by NOAA.

Middle Atlantic

Estuarine Drainage Areas

1 Buzzards Bay
2 Narragansett Bay
3 Gardiners Bay
4 Long Island Sound
4a Connecticut River
5 Great South Bay
6 Hudson River/Raritan Bay
7 Barnegat Bay
8 New Jersey Inland Bays
9 Delaware Bay
10 Delaware Inland Bays
11 Chincoteague Bay
12 Chesapeake Bay
12a Patuxent River
12b Potomac River
12c Rappahannock River
12d York River
12e James River
12f Chester River
12g Choptank River
12h Tangier/Pocomoke Sounds

Note: Sub-estuaries are in italics.

Coastal wetlands by estuarine drainage area (Acres X 100)

Estuarine Drainage Area[a]	Salt Marsh			Fresh Marsh				Forested and Scrub-Shrub					Tidal Flats[b]	
	Brackish	Unsp.	Subtotal[b]	Non Tidal	Tidal	Unsp.	Subtotal[b]	Est.	Fresh (Unsp.)	Non Tidal Fresh	Tidal Fresh	Subtotal[b]		Total
1 Buzzards Bay (100)	0	41	41 (9)	0	0	81	81 (17)	0	294	13	0	308 (64)	48 (10)	478
2 Narragansett Bay (100)	0	38	38 (4)	2	0	60	62 (6)	0	713	154	0	867 (88)	24 (2)	991
3 Gardiners Bay (93)	0	33	33 (24)	3	0	0	3 (2)	3	0	27	0	30 (21)	74 (53)	141
4 Long Island Sound (92)	55	106	161 (8)	87	13	16	116 (6)	1	428	1,154	4	1,586 (79)	153 (8)	2,016
4a Connecticut River (100)	24	7	31 (8)	27	12	4	43 (12)	0	58	228	3	290 (79)	4 (1)	367
5 Great South Bay (100)	0	183	183 (41)	2	0	0	2 (0)	0	0	44	0	44 (10)	219 (49)	447
6 Hudson Bay (47)	1	166	168 (10)	4	0	143	147 (9)	0	1,218	24	0	1,243 (72)	162 (9)	1,719
7 Barnegat Bay (100)	2	413	416 (17)	0	2	32	35 (1)	4	1,705	0	1	1,710 (70)	299 (12)	2,460
8 New Jersey Inland Bays	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A	N/A
9 Delaware Bay (89)	76	1,396	1,472 (36)	81	64	95	241 (6)	8	1,628	525	41	2,202 (54)	187 (5)	4,102
10 Delaware Inland Bays	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A	N/A
11 Chincoteague Bay (100)	0	249	249 (68)	2	0	0	2 (1)	6	0	64	3	73 (20)	44 (12)	368
12 Chesapeake Bay (97)	180	2,599	2,779 (28)	242	262	4	508 (5)	90	1	5,034	560	5,685 (57)	990 (10)	9,962
12a Patuxent River	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A	N/A
12b Potomac River	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A	N/A
12c Rappahannock River	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A	N/A
12d York River	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A	N/A
12e James River	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A	N/A
12f Chester River	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A	N/A
12g Choptank River	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A	N/A
12h Tangier/Pocomoke Sounds	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A	N/A
Middle Atlantic Total	338	5,231	5,569 (24)	451	354	435	1,240 (5)	112	6,046	7,269	612	14,038 (61)	2,203 (10)	23,051

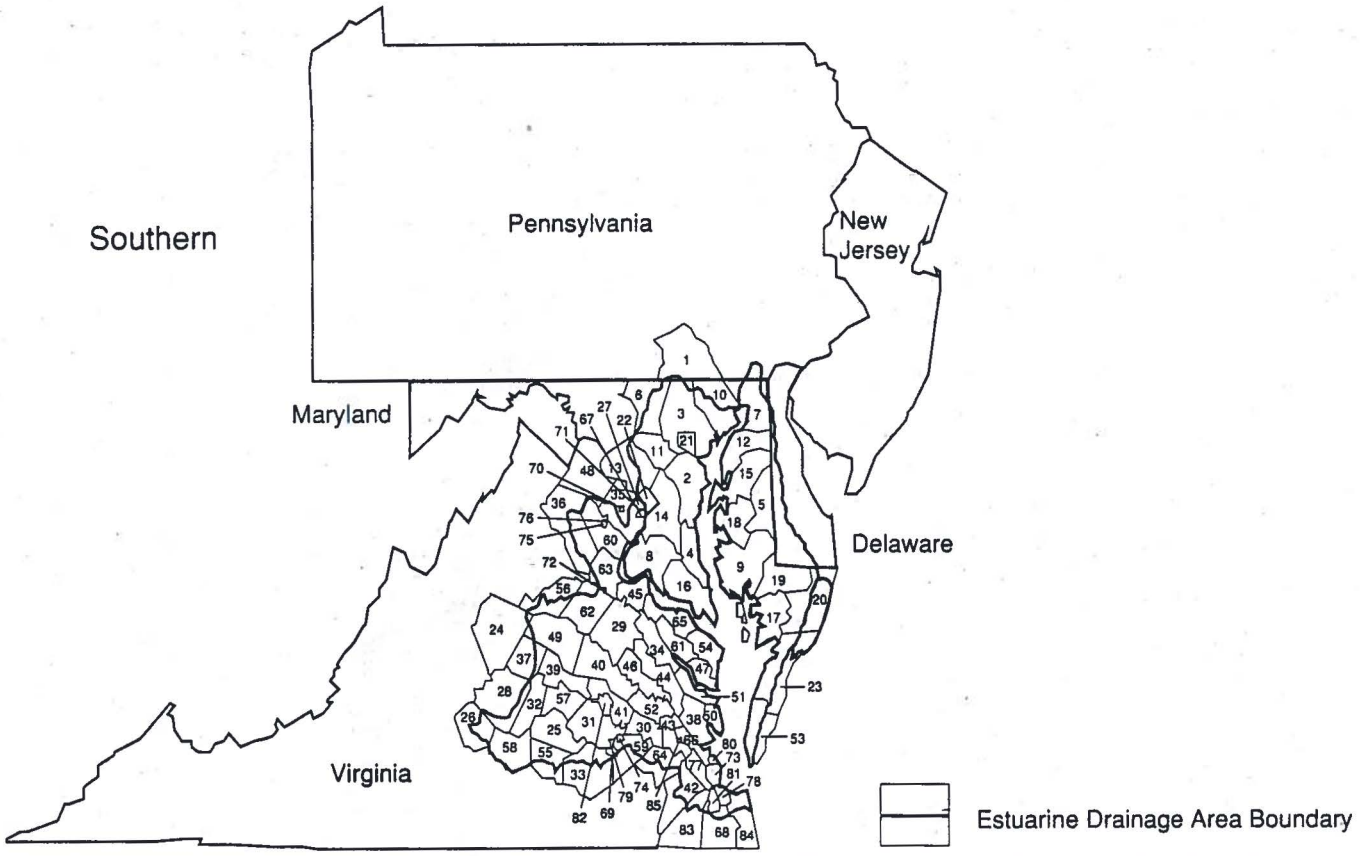
Abbreviations: Unsp., Unspecified; Est., Estuarine; N/A, Not Available

a. Values in parentheses represent the percent of EDA grid sampled by NOAA. Areas with less than 100 percent coverage may not be completely mapped by the U.S. Fish and Wildlife Service.

b. Values in parentheses represent the percent of total EDA wetlands grid sampled by NOAA.

Northern

Southern



Coastal wetlands by county (Acres X 100)

State/County[a]	Salt Marsh			Fresh Marsh				Forested and Scrub-Shrub					Tidal Flats[b]	
	Brackish	Unsp.	Subtotal[b]	Non Tidal	Tidal	Unsp.	Subtotal[b]	Est.	Fresh (Unsp.)	Non Tidal Fresh	Tidal Fresh	Subtotal[b]		Total
Middle Atlantic (Nothern)														
MASSACHUSETTS														
1 Barnstable	*Data for this county is located within the North Atlantic region.*													
2 Berkshire (78)	0	0	0 (0)	0	0	4	4 (2)	0	197	52	0	249 (98)	0 (0)	253
3 Bristol (100)	0	42	42 (6)	1	0	27	28 (4)	0	492	108	0	601 (86)	26 (4)	697
4 Dukes (100)	0	13	13 (24)	0	0	0	0 (0)	0	24	0	0	24 (45)	16 (30)	52
5 Hampden (53)	0	0	0 (0)	0	0	2	2 (2)	0	84	30	0	114 (98)	0 (0)	116
* Hampshire (12)	0	0	0 (0)	0	0	1	1 (5)	0	18	7	0	26 (95)	0 (0)	27
** Nantucket (100)	0	5	5 (16)	0	0	3	3 (10)	0	16	0	0	16 (49)	8 (25)	33
6 Norfolk	*Data for this county is located within the North Atlantic region.*													
7 Plymouth	*Data for this county is located within the North Atlantic region.*													
8 Worcester	*Data for this county is located within the North Atlantic region.*													
Subtotal	0	61	61 (5)	1	0	38	39 (3)	0	831	197	0	1,028 (87)	50	1,178
RHODE ISLAND														
9 Bristol (100)	0	12	12 (56)	0	0	1	1 (6)	0	5	0	0	5 (21)	4 (17)	22
10 Kent (78)	0	2	2 (2)	2	0	1	3 (4)	0	5	64	0	69 (92)	2 (2)	76
11 Newport (100)	0	11	11 (14)	0	0	3	4 (5)	0	48	5	0	54 (68)	10 (13)	79
12 Providence (100)	0	0	0 (0)	2	0	2	4 (3)	0	44	98	0	142 (96)	2 (1)	149
13 Washington (100)	0	13	13 (4)	1	0	3	5 (1)	1	76	218	0	295 (87)	25 (7)	337
Subtotal	0	38	38 (6)	5	0	11	16 (2)	1	179	386	0	565 (85)	43 (6)	662
CONNECTICUT														
14 Fairfield (100)	4	11	15 (9)	5	0	0	5 (3)	0	0	117	0	117 (71)	27 (17)	165
15 Hartford (88)	0	0	0 (0)	13	0	2	15 (9)	0	20	142	0	162 (91)	0 (0)	178
16 Litchfield (94)	0	0	0 (0)	20	0	0	21 (11)	0	20	144	0	164 (89)	0 (0)	185
17 Middlesex (100)	12	12	24 (18)	11	8	0	19 (14)	0	0	83	2	85 (63)	7 (5)	135
18 New Haven (100)	22	32	54 (32)	3	1	0	5 (3)	0	0	95	0	95 (56)	16 (9)	169
19 New London (100)	17	16	33 (11)	9	4	0	12 (4)	0	50	208	1	259 (83)	7 (2)	311
20 Tolland (100)	0	0	0 (0)	7	0	1	8 (8)	0	16	75	0	92 (92)	0 (0)	99
21 Windham (100)	0	0	0 (0)	19	0	3	22 (8)	0	20	243	0	264 (92)	0 (0)	286
Subtotal	55	71	126 (8)	86	13	7	106 (7)	0	127	1,108	4	1,239 (81)	56 (4)	1,527
NEW YORK														
22 Albany	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
23 Bronx (100)	0	2	2 (49)	0	0	0	0 (0)	0	0	1	0	1 (37)	0 (14)	3
24 Columbia (13)	0	0	0 (0)	0	0	0	0 (0)	0	16	1	0	17 (100)	0 (0)	17
25 Dutchess (17)	0	0	0 (0)	0	0	0	0 (0)	0	0	0	0	1 (100)	0 (0)	1
26 Greene	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
27 Kings (100)	0	9	9 (21)	1	0	0	1 (2)	0	0	0	0	0 (0)	32 (77)	41
28 Nassau (100)	0	99	99 (66)	2	0	0	2 (1)	0	0	14	0	14 (9)	36 (24)	151
29 New York (100)	0	0	0 (0)	0	0	0	0 (0)	0	0	0	0	0 (0)	0 (0)	0
30 Orange (80)	0	0	0 (0)	0	0	34	34 (17)	0	163	0	0	163 (83)	0 (0)	197
31 Putnam (12)	0	0	0 (0)	1	0	0	1 (9)	0	0	14	0	14 (91)	0 (0)	16
32 Queens (100)	0	22	22 (49)	2	0	0	2 (5)	0	0	0	0	0 (1)	20 (45)	45
33 Rensselaer (8)	0	0	0 (0)	0	0	0	0 (14)	0	0	2	0	3 (86)	0 (0)	3
34 Richmond (100)	0	9	9 (29)	0	0	5	5 (17)	0	3	0	0	3 (10)	14 (44)	31

Abbreviations: Unsp., Unspecified; Est., Estuarine; N/A, Not Available
* Non coastal county not within EDA boundaries.
** Coastal county not within EDA boundaries.
a. Values in parentheses represent the percent of county grid sampled by NOAA. Areas with less than 100 percent coverage may not be completely mapped by the U.S. Fish and Wildlife Service.
b. Values in parentheses represent the percent of total county wetlands grid sampled by NOAA.

Coastal wetlands by county (Acres X 100)

State/County[a]	Salt Marsh			Fresh Marsh				Forested and Scrub-Shrub					Tidal Flats[b]	
	Brackish	Unsp.	Subtotal[b]	Non Tidal	Tidal	Unsp.	Subtotal[b]	Est.	Fresh (Unsp.)	Non Tidal Fresh	Tidal Fresh	Subtotal[b]		Total
NEW YORK (cont.)														
35 Rockland (100)	0	5	5 (8)	0	0	4	4 (6)	0	52	0	0	52 (86)	0 (0)	60
36 Schenectady	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
37 Schoharie	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
38 Suffolk (100)	0	147	147 (29)	6	0	0	6 (1)	3	0	68	1	72 (14)	284 (56)	509
39 Sullivan (<1)	0	0	0 (0)	0	0	0	0 (0)	0	0	0	0	0 (0)	0 (0)	0
40 Ulster	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
41 Westchester (53)	0	3	3 (18)	4	0	0	4 (25)	0	0	4	0	5 (27)	5 (30)	17
Subtotal	**0**	**295**	**295 (27)**	**16**	**0**	**42**	**59 (5)**	**4**	**236**	**105**	**1**	**345 (32)**	**392 (36)**	**1,091**
NEW JERSEY														
42 Atlantic (100)	2	437	439 (33)	0	0	14	14 (1)	0	692	0	0	693 (53)	168 (13)	1,314
43 Bergen (100)	0	31	31 (35)	0	0	5	5 (6)	0	45	4	0	48 (54)	5 (5)	89
44 Burlington (100)	1	73	74 (6)	0	17	53	70 (5)	0	1,154	1	1	1,156 (89)	2 (0)	1,303
45 Camden (100)	0	0	0 (0)	0	3	4	7 (4)	0	189	0	2	192 (96)	0 (0)	199
46 Cape May (100)	1	332	333 (47)	0	0	17	17 (2)	2	258	0	0	260 (37)	94 (13)	704
47 Cumberland (100)	16	460	476 (55)	0	0	7	7 (1)	1	359	11	0	371 (43)	9 (1)	863
48 Essex (100)	0	0	0 (1)	0	0	6	6 (9)	0	63	0	0	63 (91)	0 (0)	69
49 Gloucester (100)	0	5	5 (1)	1	17	22	41 (12)	0	293	1	1	296 (86)	3 (1)	344
50 Hudson (100)	0	23	23 (65)	0	0	1	1 (3)	0	0	0	0	0 (0)	11 (32)	35
51 Hunterdon (96)	0	0	0 (0)	1	0	3	4 (8)	0	36	6	0	42 (92)	0 (0)	46
52 Mercer (100)	0	0	0 (0)	0	4	8	12 (9)	0	118	3	0	120 (91)	0 (0)	132
53 Middlesex (100)	0	45	45 (20)	1	0	12	13 (6)	0	133	17	0	151 (68)	14 (6)	223
54 Monmouth (100)	1	19	20 (7)	0	0	9	9 (3)	1	206	2	0	209 (73)	46 (16)	284
55 Morris (100)	0	0	0 (0)	0	0	23	23 (6)	0	356	0	0	356 (94)	0 (0)	379
56 Ocean (100)	0	260	260 (21)	0	0	8	8 (1)	4	681	0	0	685 (56)	270 (22)	1,223
57 Passaic (100)	0	0	0 (0)	0	0	1	1 (4)	0	37	0	0	37 (96)	0 (0)	39
58 Salem (100)	27	199	226 (43)	15	1	7	24 (5)	0	197	59	1	258 (49)	15 (3)	522
59 Somerset (100)	0	0	0 (0)	0	0	14	14 (14)	0	88	0	0	88 (86)	0 (0)	103
60 Sussex (67)	0	0	0 (0)	0	0	38	38 (16)	0	199	0	0	199 (84)	0 (0)	236
61 Union (100)	0	3	3 (9)	0	0	2	2 (5)	0	25	0	0	25 (75)	4 (11)	33
* Warren (38)	0	0	0 (0)	0	0	8	9 (20)	0	36	0	0	36 (80)	0 (0)	45
Subtotal	**50**	**1,885**	**1,936 (24)**	**20**	**44**	**262**	**325 (4)**	**8**	**5,164**	**105**	**7**	**5,284 (65)**	**641 (8)**	**8,186**
PENNSYLVANIA														
* Berks (8)	0	0	0 (0)	2	0	0	2 (42)	0	0	2	0	2 (58)	0 (0)	4
62 Bucks (76)	0	0	0 (0)	6	1	2	8 (10)	0	40	37	0	77 (90)	0 (0)	86
63 Chester (73)	0	0	0 (0)	17	0	0	17 (28)	0	0	45	0	45 (72)	0 (0)	61
64 Delaware (94)	0	0	0 (0)	6	4	3	12 (63)	0	1	6	0	7 (35)	0 (2)	20
65 Lancaster (10)	0	0	0 (0)	1	0	0	1 (32)	0	0	3	0	3 (68)	0 (0)	4
66 Montgomery (42)	0	0	0 (0)	1	0	0	1 (5)	0	0	18	0	18 (95)	0 (0)	19
67 Philadelphia (73)	0	0	0 (0)	1	0	5	6 (74)	0	2	0	0	2 (26)	0 (0)	9
Subtotal	**0**	**0**	**0 (0)**	**34**	**5**	**10**	**48 (24)**	**0**	**44**	**112**	**0**	**153 (75)**	**0 (0)**	**203**
DELAWARE														
68 Kent (100)	10	476	486 (49)	28	0	0	28 (3)	5	1	443	12	462 (47)	6 (1)	982
69 New Castle (100)	21	140	160 (54)	26	7	0	33 (11)	0	0	85	0	86 (29)	19 (6)	298

Abbreviations: Unsp., Unspecified; Est., Estuarine; N/A, Not Available

* Non coastal county not within EDA boundaries.

a. Values in parentheses represent the percent of county grid sampled by NOAA. Areas with less than 100 percent coverage may not be completely mapped by the U.S. Fish and Wildlife Service.

b. Values in parentheses represent the percent of total county wetlands grid sampled by NOAA.

Coastal wetlands by county (Acres X 100)

State/County[a]	Salt Marsh			Fresh Marsh				Forested and Scrub-Shrub					Tidal Flats[b]	
	Brackish	Unsp.	Subtotal[b]	Non Tidal	Tidal	Unsp.	Subtotal[b]	Est.	Fresh (Unsp.)	Non Tidal Fresh	Tidal Fresh	Subtotal[b]		Total
DELAWARE cont.														
70 Sussex (100)	19	201	220 (23)	16	17	2	35 (4)	7	0	648	37	692 (72)	18 (2)	965
Subtotal	**49**	**817**	**866 (39)**	**69**	**25**	**2**	**96 (4)**	**13**	**1**	**1,176**	**49**	**1,240 (55)**	**43 (2)**	**2,245**
Middle Atlantic (Southern)														
PENNSYLVANIA														
1 York (8)	0	0	0 (0)	0	0	0	0 (0)	0	0	1	0	1 (100)	0 (0)	1
MARYLAND														
2 Anne Arundel (100)	2	19	21 (13)	4	4	0	8 (5)	0	0	118	6	124 (77)	8 (5)	160
3 Baltimore (100)	1	18	18 (39)	7	0	0	7 (15)	0	0	17	2	20 (42)	2 (4)	47
4 Calvert (100)	19	15	34 (29)	2	0	0	2 (2)	0	0	54	5	59 (50)	23 (20)	119
5 Caroline (100)	24	0	24 (8)	6	3	0	9 (3)	0	0	258	12	270 (88)	3 (1)	306
6 Carroll (67)	0	0	0 (0)	6	0	0	6 (28)	0	0	16	0	16 (72)	0 (0)	23
7 Cecil (100)	16	2	18 (24)	7	5	3	16 (21)	0	0	34	3	36 (48)	5 (7)	75
8 Charles (100)	18	29	47 (19)	4	1	0	5 (2)	2	0	156	14	173 (71)	20 (8)	244
9 Dorchester (100)	14	782	796 (51)	8	13	0	21 (1)	26	0	530	133	689 (44)	58 (4)	1,564
* Frederick (10)	0	0	0 (0)	3	0	0	3 (34)	0	0	6	0	6 (66)	0 (0)	9
10 Harford (100)	3	64	68 (55)	4	0	0	4 (3)	0	0	46	5	51 (41)	0 (0)	123
11 Howard (100)	0	1	1 (3)	2	0	0	2 (8)	0	0	25	0	25 (89)	0 (0)	28
12 Kent (100)	4	31	35 (25)	4	0	0	4 (3)	0	0	99	0	99 (69)	5 (3)	144
13 Montgomery (74)	0	2	2 (3)	9	0	0	9 (15)	0	0	49	0	49 (82)	0 (0)	60
14 Prince Georges (100)	17	1	17 (10)	9	5	0	14 (8)	0	0	136	11	147 (82)	0 (0)	178
15 Queen Annes (100)	5	37	42 (14)	5	0	0	5 (2)	1	0	224	3	228 (78)	18 (6)	293
16 St Marys (100)	2	29	31 (23)	2	0	0	2 (2)	0	0	36	4	39 (29)	63 (47)	135
17 Somerset (100)	4	543	546 (68)	8	0	0	9 (1)	13	0	172	9	194 (24)	56 (7)	805
18 Talbot (100)	23	23	47 (30)	2	4	0	7 (4)	0	0	71	7	78 (50)	24 (15)	155
19 Wicomico (100)	11	122	133 (36)	6	7	0	13 (3)	2	0	196	19	218 (59)	5 (1)	369
20 Worcester (100)	0	161	161 (29)	9	2	0	10 (2)	5	0	318	51	374 (67)	11 (2)	556
21 Baltimore City (100)	0	0	0 (18)	0	0	0	0 (12)	0	0	0	0	0 (31)	1 (40)	1
Subtotal	**162**	**1,879**	**2,041 (38)**	**107**	**46**	**4**	**157 (3)**	**49**	**0**	**2,562**	**285**	**2,896 (54)**	**302 (6)**	**5,395**
22 D. of Columbia (100)	0	0	0 (0)	1	0	0	1 (50)	0	0	1	0	1 (50)	0 (0)	3
VIRGINIA														
23 Accomack (100)	0	704	704 (66)	1	1	0	2 (0)	37	0	21	16	74 (7)	281 (26)	1,059
24 Albemarle (10)	0	0	0 (6)	0	0	0	0 (6)	2	0	5	0	6 (88)	0 (0)	7
25 Amelia (100)	0	0	0 (0)	15	0	0	15 (12)	0	0	111	0	111 (88)	0 (0)	126
26 Appomattox (55)	0	0	0 (0)	2	0	0	2 (12)	0	0	13	0	13 (88)	0 (0)	14
27 Arlington	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
* Brunswick (<1)	0	0	0 (0)	0	0	0	0 (0)	0	0	0	0	0 (0)	0 (0)	0
28 Buckingham (74)	0	0	0 (0)	6	0	0	6 (11)	0	0	49	0	49 (89)	0 (0)	56
29 Caroline (100)	0	0	0 (0)	10	3	0	13 (6)	0	0	197	13	210 (94)	0 (0)	223
30 Charles City (100)	0	0	0 (0)	2	34	0	37 (36)	0	0	48	18	66 (64)	0 (0)	102
* Charlotte (27)	0	0	0 (0)	4	0	0	4 (9)	0	0	38	0	38 (91)	0 (0)	42
31 Chesterfield (100)	0	0	0 (0)	3	11	0	14 (14)	0	0	62	22	84 (86)	0 (0)	97
* Culpeper (17)	0	0	0 (0)	0	0	0	0 (20)	0	0	2	0	2 (80)	0 (0)	2
32 Cumberland (100)	0	0	0 (0)	13	0	0	13 (12)	0	0	98	0	98 (88)	0 (0)	111

Abbreviations: Unsp., Unspecified; Est., Estuarine; N/A, Not Available

* Non Coastal county not within EDA boundaries.

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b. Values in parentheses represent the percent of total county wetlands grid sampled by NOAA.

Coastal wetlands by county (Acres X 100)

State/County[a]	Salt Marsh			Fresh Marsh				Forested and Scrub-Shrub					Tidal Flats[b]	
	Brackish	Unsp.	Subtotal[b]	Non Tidal	Tidal	Unsp.	Subtotal[b]	Est.	Fresh (Unsp.)	Non Tidal Fresh	Tidal Fresh	Subtotal[b]		Total
VIRGINIA cont.														
33 Dinwiddie (75)	0	0	0 (0)	2	0	0	2 (3)	0	0	81	0	81 (97)	0 (0)	83
34 Essex (100)	0	45	45 (33)	5	5	0	10 (7)	0	0	66	14	80 (59)	0 (0)	136
35 Fairfax (100)	0	0	0 (0)	6	0	0	6 (25)	0	0	16	3	19 (75)	0 (0)	25
36 Fauqier (67)	0	0	0 (0)	5	0	0	5 (22)	0	0	17	0	17 (78)	0 (0)	22
37 Fluvanna (47)	0	0	0 (0)	1	0	0	1 (5)	0	0	18	0	18 (95)	0 (0)	19
38 Gloucester (100)	0	59	59 (48)	1	1	0	2 (2)	1	0	35	9	44 (37)	16 (13)	122
39 Goochland (100)	0	0	0 (0)	2	0	0	2 (4)	0	0	54	0	54 (96)	0 (0)	57
* Greene (6)	0	0	0 (0)	0	0	0	0 (0)	0	0	0	0	1 (100)	0 (0)	1
40 Hanover (100)	0	0	0 (0)	4	0	0	4 (3)	0	0	119	2	121 (97)	0 (0)	125
41 Henrico (100)	0	0	0 (0)	1	2	0	4 (6)	0	0	58	0	59 (94)	0 (0)	62
42 Isle of Wight (100)	0	56	56 (33)	1	0	0	1 (1)	0	0	105	1	107 (63)	6 (4)	170
43 James City (100)	0	13	13 (12)	2	53	0	54 (51)	0	0	25	11	36 (34)	3 (3)	107
44 King and Queen (100)	0	31	31 (21)	2	12	0	14 (9)	0	0	96	8	104 (69)	1 (1)	151
45 King George (94)	3	7	10 (16)	4	6	0	10 (15)	0	0	24	14	39 (61)	5 (7)	63
46 King William (100)	0	30	30 (18)	4	23	0	27 (16)	0	0	72	36	108 (65)	0 (0)	165
47 Lancaster (100)	0	11	11 (29)	1	0	0	1 (2)	0	0	13	0	13 (33)	14 (35)	39
48 Loudoun (28)	0	0	0 (0)	3	0	0	3 (17)	0	0	15	0	15 (83)	0 (0)	18
49 Louisa (100)	0	0	0 (0)	4	0	0	4 (4)	0	0	98	0	98 (96)	0 (0)	101
* Lunenburg (100)	0	0	0 (0)	2	0	0	2 (8)	0	0	22	0	22 (92)	0 (0)	23
50 Mathews (100)	0	24	24 (47)	0	0	0	0 (0)	0	0	6	3	9 (18)	18 (35)	51
51 Middlesex (100)	0	12	12 (21)	0	2	0	2 (3)	0	0	30	6	36 (61)	9 (15)	58
52 New Kent (100)	0	21	21 (14)	5	26	0	31 (20)	0	0	67	37	104 (66)	1 (1)	157
53 Northampton (94)	0	362	362 (37)	0	0	0	0 (0)	13	0	2	3	18 (2)	599 (61)	980
54 Northumberland (94)	0	8	8 (18)	0	0	0	0 (0)	2	0	13	2	17 (38)	20 (45)	45
55 Nottoway (100)	0	0	0 (0)	11	0	0	11 (14)	0	0	63	0	63 (86)	0 (0)	74
56 Orange (100)	0	0	0 (0)	3	0	0	3 (16)	0	0	17	0	17 (84)	0 (0)	20
57 Powhatan (100)	0	0	0 (0)	2	0	0	2 (13)	0	0	12	0	12 (87)	0 (0)	14
58 Prince Edward (100)	0	0	0 (0)	16	0	0	16 (13)	0	0	110	0	110 (87)	0 (0)	126
59 Prince George (100)	0	0	0 (0)	1	11	0	12 (13)	0	0	61	18	79 (87)	0 (0)	91
60 Prince William (37)	0	4	4 (13)	3	0	0	3 (12)	0	0	14	6	20 (73)	0 (2)	28
61 Richmond (100)	0	47	47 (51)	1	0	0	2 (2)	0	0	39	5	44 (47)	0 (0)	92
62 Spotsylvania (24)	0	0	0 (0)	2	0	0	2 (3)	0	0	65	1	66 (97)	0 (0)	68
63 Stafford (100)	7	0	7 (13)	0	2	0	2 (3)	0	0	39	6	45 (83)	0 (0)	54
64 Surry (100)	0	4	4 (3)	1	12	0	13 (10)	0	0	100	12	112 (86)	2 (1)	131
* Sussex (100)	0	0	0 (0)	0	0	0	0 (1)	0	0	41	0	41 (99)	0 (0)	42
65 Westmoreland (<1)	0	8	8 (10)	1	2	0	3 (4)	3	0	23	3	29 (38)	36 (48)	76
66 York (100)	0	24	24 (45)	1	0	0	1 (2)	1	0	17	4	21 (40)	7 (14)	54
VIRGINIA (Independent Cities)														
67 Alexandria	N/A	N/A	N/A N/A	N/A	N/A	N/A	N/A N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A N/A	N/A
68 Chesapeake	N/A	N/A	N/A N/A	N/A	N/A	N/A	N/A N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A N/A	N/A
69 Colonial Heights	N/A	N/A	N/A N/A	N/A	N/A	N/A	N/A N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A N/A	N/A
70 Fairfax	N/A	N/A	N/A N/A	N/A	N/A	N/A	N/A N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A N/A	N/A
71 Falls Church	N/A	N/A	N/A N/A	N/A	N/A	N/A	N/A N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A N/A	N/A

Abbreviations: Unsp., Unspecified; Est., Estuarine; N/A, Not Available
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b. Values in parentheses represent the percent of total county wetlands grid sampled by NOAA.

Coastal wetlands by county (Acres X 100)

State/County[a]	Salt Marsh				Fresh Marsh			Forested and Scrub-Shrub					Tidal Flats[b]	
	Brackish	Unsp.	Subtotal[b]	Non Tidal	Tidal	Unsp.	Subtotal[b]	Est.	Fresh (Unsp.)	Non Tidal Fresh	Tidal Fresh	Subtotal[b]		Total
VIRGINIA (cont.)														
72 Fredericksburg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
**73 Hampton (100)	0	19	19 (61)	0	0	0	0 (0)	5	0	4	1	10 (32)	2 (7)	32
74 Hopewell	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
75 Manassas	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
76 Manassas Park	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
77 Newport News (<1)	0	28	28 (61)	0	0	0	0 (1)	0	0	7	2	9 (21)	8 (18)	46
78 Norfolk (<1)	0	4	4 (55)	0	0	0	0 (0)	0	0	0	1	1 (21)	2 (24)	7
79 Petersburg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
80 Poquoson	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
81 Portsmouth (100)	0	1	1 (45)	0	0	0	0 (0)	0	0	0	0	0 (14)	1 (41)	3
82 Richmond (100)	0	0	0 (0)	0	0	0	0 (0)	0	0	1	0	1 (100)	0 (0)	1
83 Suffolk	*Data for this city is located within the South Atlantic Region.*													
84 Virginia Beach	*Data for this city is located within the South Atlantic Region.*													
85 Williamsburg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Subtotal	11	1,676	1,687 (23)	167	207	0	374 (5)	66	1	3,692	481	4,240 (58)	1,052 (14)	7,354
Middle Atlantic Total	327	6,568	6,896 (26)	494	338	376	1,208 (5)	139	6,583	8,060	621	15,401 (59)	2,561 (10)	26,067

Abbreviations: Unsp., Unspecified; Est., Estuarine; N/A, Not Available

** Coastal city not within EDA boundaries.

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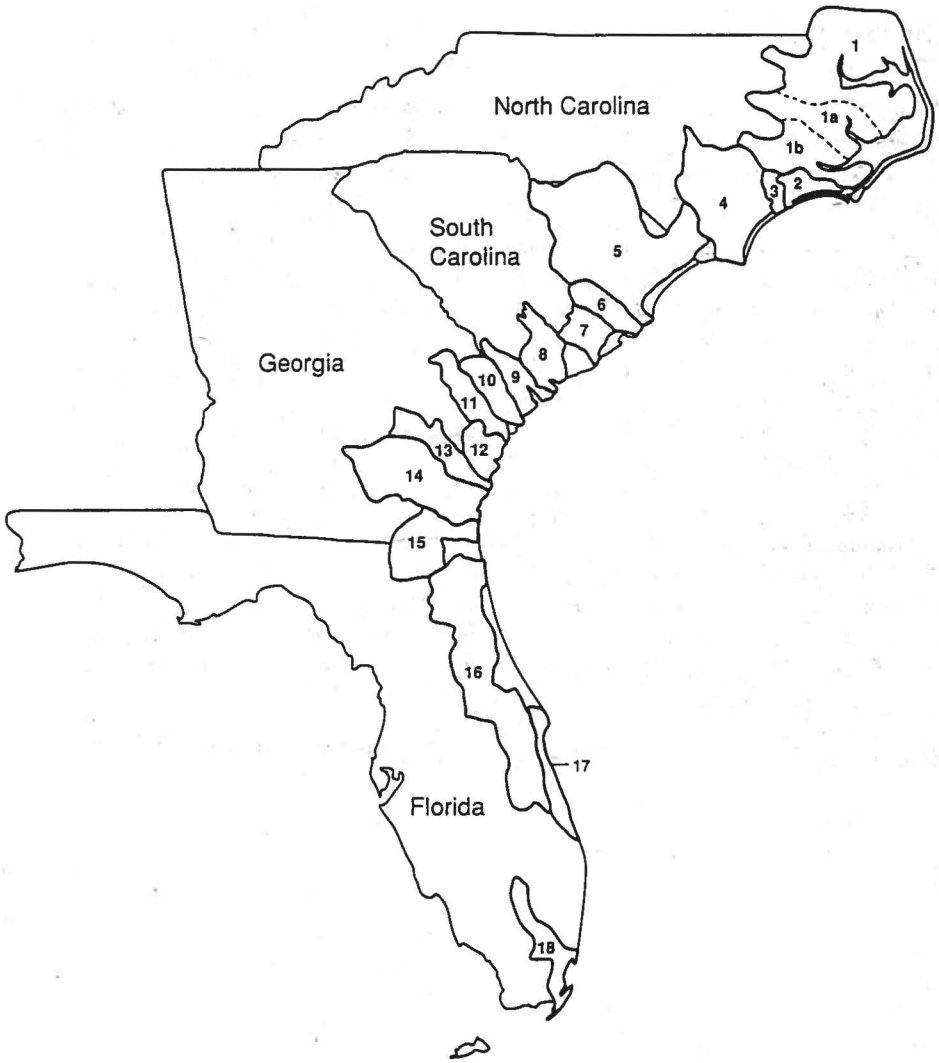
b. Values in parentheses represent the percent of total city wetlands grid sampled by NOAA.

South Atlantic



Estuarine Drainage Areas

1	Albemarle/Pamlico Sounds
1a	*Pamlico/Pungo Rivers*
1b	*Neuse River*
2	Bogue Sound
3	New River
4	Cape Fear River
5	Winyah Bay
6	North Santee/South Santee Rivers
7	Charleston Harbor
8	St. Helena Sound
9	Broad River
10	Savannah River
11	Ossabaw Sound
12	St. Catherines/Sapelo Sounds
13	Altamaha River
14	St. Andrew/St. Simons Sounds
15	St. Marys River/Cumberland Sound
16	St. Johns River
17	Indian River
18	Biscayne Bay

Note: Sub-estuaries are in italics.

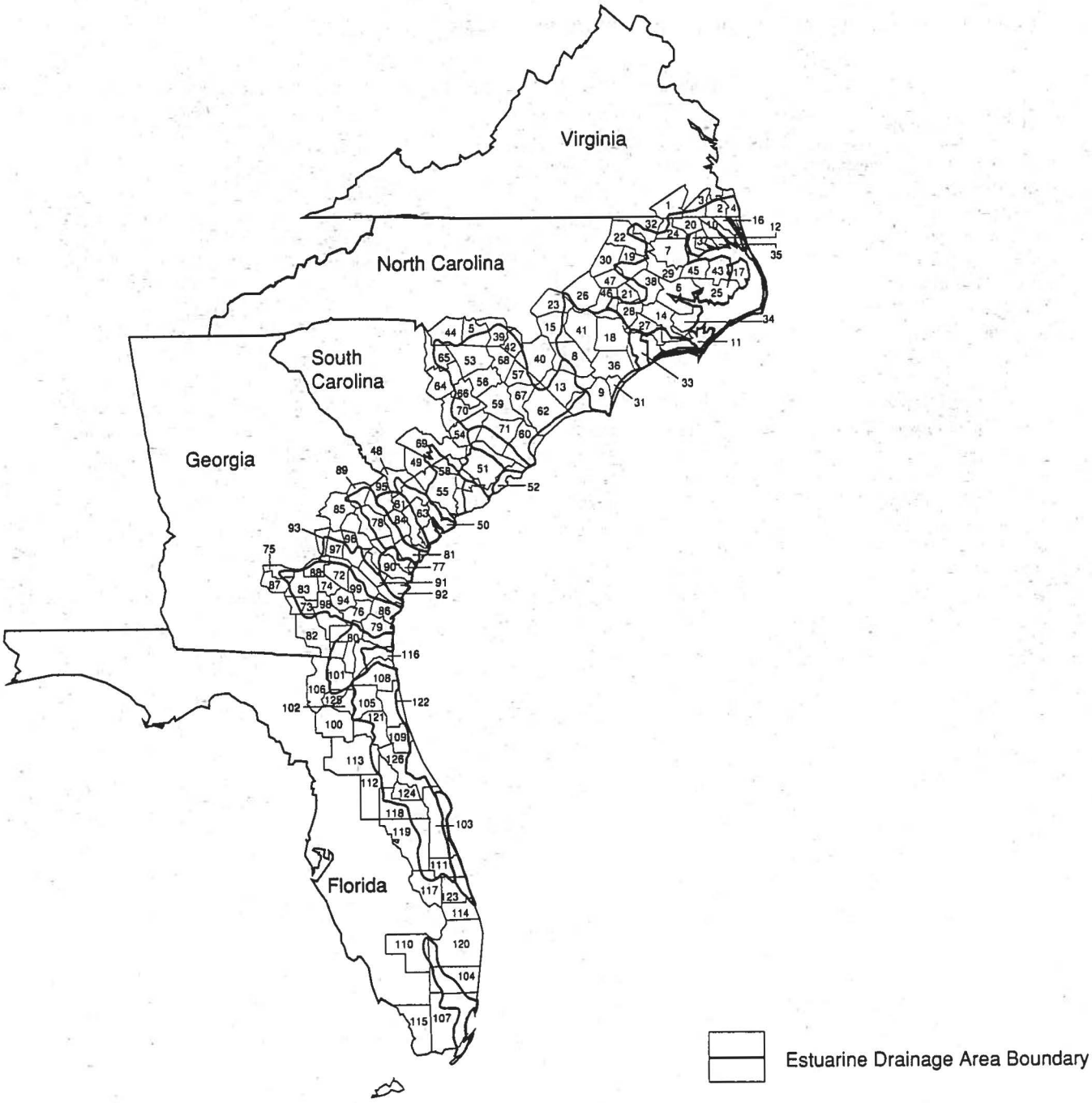
Coastal wetlands by estuarine drainage area (Acres X 100)

Estuarine Drainage Area[a]	Salt Marsh				Fresh Marsh			Forested and Scrub-Shrub					Tidal Flats[b]	
	Brackish	Unsp.	Subtotal[b]	Non Tidal	Tidal	Unsp.	Subtotal[b]	Est.	Fresh (Unsp.)	Non Tidal Fresh	Tidal Fresh	Subtotal[b]		Total
1 Albemarle/Pamlico Sounds (8)	589	987	1,576 (14)	365	0	0	365 (3)	261	0	8,783	17	9,062 (80)	311 (3)	11,314
2 Bogue Sound (65)	0	211	211 (22)	9	2	0	11 (1)	24	0	591	2	616 (64)	118 (12)	956
3 New River (46)	0	41	41 (16)	5	0	0	5 (2)	9	0	194	0	203 (81)	4 (1)	252
4 Cape Fear River (13)	0	90	90 (6)	77	19	1	97 (6)	4	0	1,275	12	1,291 (86)	20 (1)	1,498
5 Winyah Bay (30)	0	124	124 (2)	109	171	28	308 (5)	0	1,855	2,964	652	5,472 (93)	6 (0)	5,910
6 North and South Santee Rivers (88)	0	129	129 (7)	129	41	4	174 (9)	0	35	1,358	220	1,613 (84)	1 (0)	1,916
7 Charleston Harbor (10)	0	268	268 (14)	90	78	0	169 (9)	5	0	1,518	17	1,540 (78)	8 (0)	1,985
8 St. Helena Sound (100)	0	916	916 (21)	147	139	35	321 (7)	6	1,311	1,605	115	3,036 (71)	25 (1)	4,299
9 Broad River (89)	0	883	883 (42)	30	2	4	35 (2)	6	505	604	6	1,123 (53)	70 (3)	2,111
10 Savannah Sound (100)	0	322	322 (11)	16	18	107	141 (5)	5	1,765	649	9	2,428 (84)	9 (0)	2,900
11 Ossabaw Sound (82)	15	230	245 (10)	25	15	0	40 (2)	0	27	2,222	33	2,282 (89)	4 (0)	2,571
12 St. Catherines/Sapelo Sounds (29)	19	333	352 (40)	23	22	0	46 (5)	1	0	417	43	461 (53)	13 (2)	872
13 Altamaha River (35)	0	79	79 (7)	41	40	0	81 (7)	0	0	731	245	976 (86)	2 (0)	1,138
14 St. Andrews/Simons Sounds (66)	64	1,071	1,134 (20)	144	13	0	157 (3)	20	0	4,163	237	4,420 (77)	59 (1)	5,771
15 St. Marys R./Cumberland Sound	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
16 St. Johns River (96)	0	168	168 (2)	2,646	0	0	2,646 (25)	2	0	7,662	0	7,665 (73)	2 (0)	10,481
17 Indian River (95)	0	24	24 (2)	535	55	0	591 (57)	112	0	241	16	368 (36)	45 (4)	1,028
18 Biscayne Bay (79)	0	104	104 (3)	1,556	0	0	1,556 (41)	345	0	1,714	0	2,059 (55)	49 (1)	3,769
South Atlantic Total	687	5,979	6,666 (11)	5,947	616	180	6,743 (11)	800	5,500	36,690	1,625	44,615 (78)	747 (1)	58,770

Abbreviations: Unsp., Unspecified; Est., Estuarine; N/A, Not Available

a. Values in parentheses represent the percent of EDA grid sampled by NOAA. Areas with less than 100 percent coverage may not be completely mapped by the U.S. Fish and Wildlife Service.

b. Values in parentheses represent the percent of total EDA wetlands grid sampled by NOAA.


Virginia
North Carolina
South Carolina
Georgia
Florida
Estuarine Drainage Area Boundary

Coastal wetlands by county (Acres X 100)

State/County[a]	Salt Marsh			Fresh Marsh				Forested and Scrub-Shrub					Tidal Flats[b]	
	Brackish	Unsp.	Subtotal[b]	Non Tidal	Tidal	Unsp.	Subtotal[b]	Est.	Fresh (Unsp.)	Non Tidal Fresh	Tidal Fresh	Subtotal[b]		Total
VIRGINIA														
1 Southampton (100)	0	0	0 (0)	0	0	0	0 (0)	0	0	162	0	162 (100)	0 (0)	162
2 Chesapeake (100)	0	16	16 (2)	2	0	0	2 (0)	0	0	712	93	805 (98)	1 (0)	824
3 Suffolk (100)	0	39	39 (8)	0	0	0	1 (0)	0	0	449	1	450 (91)	4 (1)	495
4 Virginia Beach (90)	0	98	98 (33)	12	0	0	12 (4)	0	0	60	112	173 (58)	15 (5)	298
Subtotal	0	154	154 (9)	14	0	0	15 (1)	0	0	1,384	206	1,591 (89)	20 (1)	1,779
NORTH CAROLINA														
5 Anson	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6 Beaufort (88)	0	80	80 (8)	27	0	0	27 (3)	14	0	940	0	955 (90)	0 (0)	1,062
7 Bertie (21)	0	0	0 (0)	1	0	0	1 (0)	0	0	351	0	351 (100)	0 (0)	352
8 Bladen	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9 Brunswick (30)	0	106	106 (16)	53	14	2	68 (10)	2	135	340	7	483 (72)	16 (2)	674
10 Camden (16)	0	16	16 (12)	0	0	0	0 (0)	2	0	116	0	118 (88)	0 (0)	134
11 Carteret (88)	169	394	563 (31)	15	2	0	17 (1)	77	0	932	2	1,010 (55)	234 (13)	1,823
12 Chowan (4)	0	0	0 (0)	0	0	0	0 (0)	0	0	0	0	0 (0)	0 (0)	0
13 Columbus (4)	0	0	0 (0)	1	0	0	1 (3)	0	0	43	0	43 (97)	0 (0)	44
14 Craven (50)	1	16	17 (2)	16	0	0	16 (2)	2	0	773	0	775 (96)	4 (0)	811
15 Cumberland	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
16 Currituck (57)	0	159	159 (37)	4	0	0	4 (1)	4	0	235	20	259 (61)	5 (1)	426
17 Dare (80)	104	180	284 (14)	172	0	0	172 (8)	132	0	1,453	0	1,585 (76)	36 (2)	2,077
18 Duplin	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19 Edgecombe (12)	0	0	0 (0)	0	0	0	0 (1)	0	0	52	0	52 (99)	0 (0)	52
20 Gates	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
21 Greene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
22 Halifax	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
23 Harnett (1)	0	0	0 (0)	0	0	0	0 (0)	0	0	1	0	1 (100)	0 (0)	1
24 Hertford	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
25 Hyde (81)	299	115	415 (18)	61	0	0	61 (3)	26	0	1,782	0	1,808 (78)	46 (2)	2,330
26 Johnston (2)	0	0	0 (0)	0	0	0	0 (0)	0	0	14	0	14 (100)	0 (0)	14
27 Jones (22)	0	0	0 (0)	0	0	0	0 (0)	0	0	138	0	138 (100)	0 (0)	139
28 Lenior	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
29 Martin (30)	0	0	0 (0)	0	0	0	0 (0)	0	0	266	0	266 (100)	0 (0)	266
30 Nash (4)	0	0	0 (0)	0	0	0	0 (2)	0	0	26	0	26 (98)	0 (0)	27
31 New Hanover (99)	0	76	76 (17)	21	5	0	27 (6)	5	0	320	5	330 (74)	16 (4)	449
32 Northampton (8)	0	0	0 (0)	0	0	0	0 (0)	0	0	15	0	15 (100)	0 (0)	15
33 Onslow (39)	0	118	118 (25)	6	0	0	6 (1)	13	0	312	0	325 (69)	21 (4)	470
34 Pamlico (89)	17	191	208 (18)	42	0	0	43 (4)	19	0	860	0	879 (75)	47 (4)	1,176
35 Pasquotank	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
36 Pender (29)	0	79	79 (9)	6	0	0	6 (1)	0	0	738	0	738 (88)	16 (2)	839
37 Perquimans (14)	0	0	0 (0)	1	0	0	1 (8)	0	0	10	0	10 (92)	0 (0)	11
38 Pitt (3)	0	0	0 (1)	1	0	0	1 (2)	0	0	59	0	59 (96)	0 (1)	61
39 Richmond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
40 Robeson	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
41 Sampson	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
42 Scotland	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Abbreviations: Unsp., Unspecified; Est., Estuarine; N/A, Not Available
a. Values in parentheses represent the percent of county grid sampled by NOAA. Areas with less than 100 percent coverage may not be completely mapped by the U.S. Fish and Wildlife Service.
b. Values in parentheses represent the percent of total county wetlands grid sampled by NOAA.

Coastal wetlands by county (Acres X 100)

State/County[a]	Salt Marsh			Fresh Marsh				Forested and Scrub-Shrub					Tidal Flats[b]	
	Brackish	Unsp.	Subtotal[b]	Non Tidal	Tidal	Unsp.	Subtotal[b]	Est.	Fresh (Unsp.)	Non Tidal Fresh	Tidal Fresh	Subtotal[b]		Total
NORTH CAROLINA (cont.)														
43 Tyrrell (81)	0	7	7 (0)	7	0	0	7 (0)	1	0	1,427	0	1,428 (99)	0 (0)	1,441
44 Union	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
45 Washington (99)	0	0	0 (0)	27	0	0	27 (4)	0	0	590	0	590 (96)	0 (0)	618
* Wake (5)	0	0	0 (0)	0	0	0	0 (0)	0	0	20	0	20 (100)	0 (0)	20
46 Wayne (11)	0	0	0 (0)	2	0	0	2 (2)	0	0	95	0	95 (98)	0 (0)	97
47 Wilson (42)	0	0	0 (0)	1	0	0	1 (0)	0	0	182	0	182 (100)	0 (0)	183
Subtotal	**589**	**1,539**	**2,128 (14)**	**460**	**22**	**3**	**488 (3)**	**297**	**135**	**12,090**	**35**	**12,556 (80)**	**440 (3)**	**15,612**
SOUTH CAROLINA														
48 Allendale (5)	0	0	0 (0)	0	0	2	2 (3)	0	60	4	0	64 (97)	0 (0)	66
49 Bamberg (30)	0	0	0 (0)	0	0	10	10 (2)	0	376	49	0	424 (98)	0 (0)	434
50 Beaufort (100)	0	1,231	1,231 (72)	37	24	4	65 (4)	9	5	296	27	336 (20)	82 (5)	1,714
51 Berkeley (96)	0	74	74 (3)	82	78	0	160 (8)	0	24	1,803	63	1,891 (89)	0 (0)	2,125
* Calhoun (2)	0	0	0 (0)	0	0	0	0 (3)	0	16	0	0	16 (97)	0 (0)	16
52 Charleston (100)	0	1,302	1,302 (48)	125	19	1	144 (5)	15	0	1,030	41	1,086 (40)	196 (7)	2,728
53 Chesterfield	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
54 Clarendon (10)	0	0	0 (0)	0	0	2	2 (2)	0	51	28	0	78 (98)	0 (0)	80
55 Colleton (94)	0	367	367 (13)	123	112	15	250 (9)	2	504	1,550	69	2,125 (77)	5 (0)	2,747
56 Darlington	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
57 Dillon	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
58 Dorchester (100)	0	10	10 (1)	5	3	24	31 (2)	1	475	950	0	1,426 (97)	0 (0)	1,468
59 Florence (44)	0	0	0 (0)	0	0	3	3 (1)	0	502	0	0	502 (99)	0 (0)	505
60 Georgetown (95)	0	304	304 (15)	112	203	5	320 (16)	1	9	858	480	1,348 (67)	25 (1)	1,997
61 Hampton (74)	0	0	0 (0)	4	0	8	12 (1)	0	640	176	0	816 (99)	0 (0)	828
62 Horry (93)	0	19	19 (1)	46	5	0	51 (2)	1	136	1,958	250	2,344 (97)	6 (0)	2,420
63 Jasper (100)	0	353	353 (18)	23	18	76	116 (6)	5	1,025	417	5	1,452 (75)	5 (0)	1,926
64 Kershaw	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
65 Lancaster	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
66 Lee	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
67 Marion (45)	0	0	0 (0)	2	2	7	11 (2)	0	354	263	68	685 (98)	0 (0)	696
68 Marlboro	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
69 Orangeburg (45)	0	0	0 (0)	3	0	13	16 (1)	0	1,444	3	0	1,447 (99)	0 (0)	1,463
70 Sumter (2)	0	0	0 (0)	0	0	1	1 (2)	0	24	0	0	24 (98)	0 (0)	25
71 Williamsburg (94)	0	0	0 (0)	14	0	20	34 (2)	0	985	416	16	1,417 (98)	0 (0)	1,452
Subtotal	**0**	**3,659**	**3,659 (16)**	**575**	**463**	**190**	**1,228 (5)**	**34**	**6,631**	**9,800**	**1,018**	**17,483 (77)**	**320 (1)**	**22,689**
GEORGIA														
72 Appling	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
73 Atkinson (80)	0	0	0 (0)	7	0	0	7 (2)	0	0	453	0	453 (98)	0 (0)	461
74 Bacon (24)	0	0	0 (0)	5	0	0	5 (4)	0	0	97	0	97 (95)	0 (0)	101
75 Ben Hill (32)	0	0	0 (0)	2	0	0	2 (4)	0	0	62	0	62 (96)	0 (0)	64
76 Brantley (100)	0	1	1 (0)	14	0	0	14 (1)	0	0	1,027	1	1,028 (99)	0 (0)	1,043
77 Bryan (80)	0	34	34 (4)	18	4	0	22 (3)	0	0	748	30	777 (93)	0 (0)	834
78 Bulloch (83)	0	0	0 (0)	14	0	0	14 (1)	0	0	989	0	989 (99)	0 (0)	1,004
* Burke (10)	0	0	0 (0)	2	0	0	2 (2)	0	0	75	0	75 (98)	0 (0)	77

Abbreviations: Unsp., Unspecified; Est., Estuarine; N/A, Not Available

* Non coastal county not within EDA boundries.

a. Values in parentheses represent the percent of county grid sampled by NOAA. Areas with less than 100 percent coverage may not be completely mapped by the U.S. Fish and Wildlife Service.

b. Values in parentheses represent the percent of total county wetlands grid sampled by NOAA.

Coastal wetlands by county (Acres X 100)

State/County[a]	Salt Marsh			Fresh Marsh				Forested and Scrub-Shrub					Tidal Flats[b]	
	Brackish	Unsp.	Subtotal[b]	Non Tidal	Tidal	Unsp.	Subtotal[b]	Est.	Fresh (Unsp.)	Non Tidal Fresh	Tidal Fresh	Subtotal[b]		Total
GEORGIA (cont.)														
79 Camden (100)	20	733	754 (42)	54	16	0	70 (4)	14	0	732	199	945 (53)	26 (1)	1,794
* Candler (10)	0	0	0 (0)	0	0	0	0 (0)	0	0	29	0	29 (100)	0 (0)	29
80 Charlton (25)	0	0	0 (0)	13	0	0	13 (3)	0	0	334	43	377 (97)	0 (0)	391
81 Chatham (7)	0	90	90 (87)	0	0	0	0 (0)	1	2	3	0	6 (6)	7 (7)	104
82 Clinch (23)	0	0	0 (0)	5	0	0	5 (1)	0	0	432	0	432 (99)	0 (0)	437
83 Coffee (36)	0	0	0 (0)	6	0	0	6 (3)	0	0	230	0	230 (97)	0 (0)	236
84 Effingham (100)	0	0	0 (0)	2	0	0	2 (0)	0	342	794	0	1,137 (100)	0 (0)	1,138
85 Emanuel (17)	0	0	0 (0)	1	0	0	1 (1)	0	0	81	0	81 (99)	0 (0)	81
* Evans (59)	0	0	0 (0)	1	0	0	1 (1)	0	0	135	0	135 (99)	0 (0)	136
86 Glynn (99)	43	616	660 (50)	23	22	0	45 (3)	7	0	467	99	573 (44)	33 (3)	1,310
87 Irwin (37)	0	0	0 (0)	8	0	0	8 (6)	0	0	134	0	134 (94)	0 (0)	142
88 Jeff Davis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
89 Jenkins (93)	0	0	0 (0)	7	0	0	8 (2)	0	0	434	0	434 (98)	0 (0)	441
* Lanier (12)	0	0	0 (0)	1	0	0	1 (3)	0	0	34	0	34 (97)	0 (0)	35
90 Liberty (53)	0	0	0 (0)	8	0	0	8 (1)	0	0	578	0	578 (99)	0 (0)	586
91 Long (10)	0	0	0 (0)	1	0	0	1 (1)	0	0	91	0	91 (99)	0 (0)	93
92 Mcintosh (50)	19	383	402 (45)	42	43	0	85 (10)	1	0	187	208	397 (44)	9 (1)	893
93 Montgomery (66)	0	0	0 (0)	6	0	0	6 (3)	0	0	174	0	174 (97)	0 (0)	180
94 Pierce (98)	0	0	0 (0)	21	0	0	21 (3)	0	0	612	0	612 (97)	0 (0)	632
95 Screven (92)	0	0	0 (0)	23	0	2	25 (3)	0	199	706	0	905 (97)	0 (0)	930
96 Tattnall (43)	0	0	0 (0)	8	0	0	8 (3)	0	0	230	0	230 (97)	0 (0)	238
97 Toombs (47)	0	0	0 (0)	5	0	0	5 (5)	0	0	100	0	100 (95)	0 (0)	105
98 Ware (55)	0	0	0 (0)	36	0	0	36 (4)	0	0	1,000	0	1,000 (96)	0 (0)	1,036
99 Wayne (37)	0	0	0 (0)	7	0	0	7 (1)	0	0	621	7	628 (99)	0 (0)	634
* Wheeler (3)	0	0	0 (0)	0	0	0	0 (0)	0	0	32	0	32 (100)	0 (0)	32
Subtotal	83	1,858	1,941 (13)	341	86	4	431 (3)	24	544	11,620	587	12,774 (84)	75 (0)	15,221
FLORIDA														
100 Alachua (8)	0	0	0 (0)	12	0	0	12 (15)	0	0	68	0	68 (85)	0 (0)	80
101 Baker (6)	0	0	0 (0)	0	0	0	0 (0)	0	0	71	0	71 (100)	0 (0)	71
102 Bradford (39)	0	0	0 (0)	8	0	0	8 (5)	0	0	149	0	149 (94)	0 (0)	158
103 Brevard (95)	0	6	6 (0)	1,292	57	0	1,349 (68)	30	0	564	19	613 (31)	22 (1)	1,990
104 Broward (70)	0	0	0 (0)	2,436	0	0	2,436 (73)	19	0	878	0	897 (27)	1 (0)	3,335
105 Clay (71)	0	1	1 (0)	36	0	0	36 (8)	0	0	439	0	440 (92)	0 (0)	477
106 Columbia	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
107 Dade (49)	0	223	223 (8)	1,528	0	0	1,528 (53)	397	0	744	0	1,141 (39)	17 (1)	2,909
108 Duval (87)	0	336	336 (27)	40	0	0	40 (3)	7	0	838	12	856 (69)	12 (1)	1,245
109 Flagler (100)	0	35	35 (3)	98	0	0	98 (9)	6	0	978	2	986 (88)	2 (0)	1,120
110 Hendry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
111 Indian River (97)	0	3	3 (0)	369	0	0	369 (45)	44	0	401	0	445 (54)	8 (1)	825
112 Lake (36)	0	0	0 (0)	107	0	0	107 (14)	0	0	632	0	632 (86)	0 (0)	739
113 Marion (33)	0	0	0 (0)	75	0	0	75 (22)	0	0	270	0	270 (78)	0 (0)	346
114 Martin (83)	0	0	0 (0)	492	0	0	492 (76)	22	0	129	0	150 (23)	4 (1)	646
115 Monroe (0)	0	0	0 (0)	0	0	0	0 (0)	0	0	0	0	0 (0)	0 (0)	0
116 Nassau (63)	0	249	249 (30)	11	3	0	14 (2)	7	0	459	69	535 (64)	38 (5)	836

Abbreviations: Unsp., Unspecified; Est., Estuarine; N/A, Not Available

* Non coastal county not within EDA boundaries.

a. Values in parentheses represent the percent of county grid sampled by NOAA. Areas with less than 100 percent coverage may not be completely mapped by the U.S. Fish and Wildlife Service.

b. Values in parentheses represent the percent of total county wetlands grid sampled by NOAA.

Coastal wetlands by county (Acres X 100)

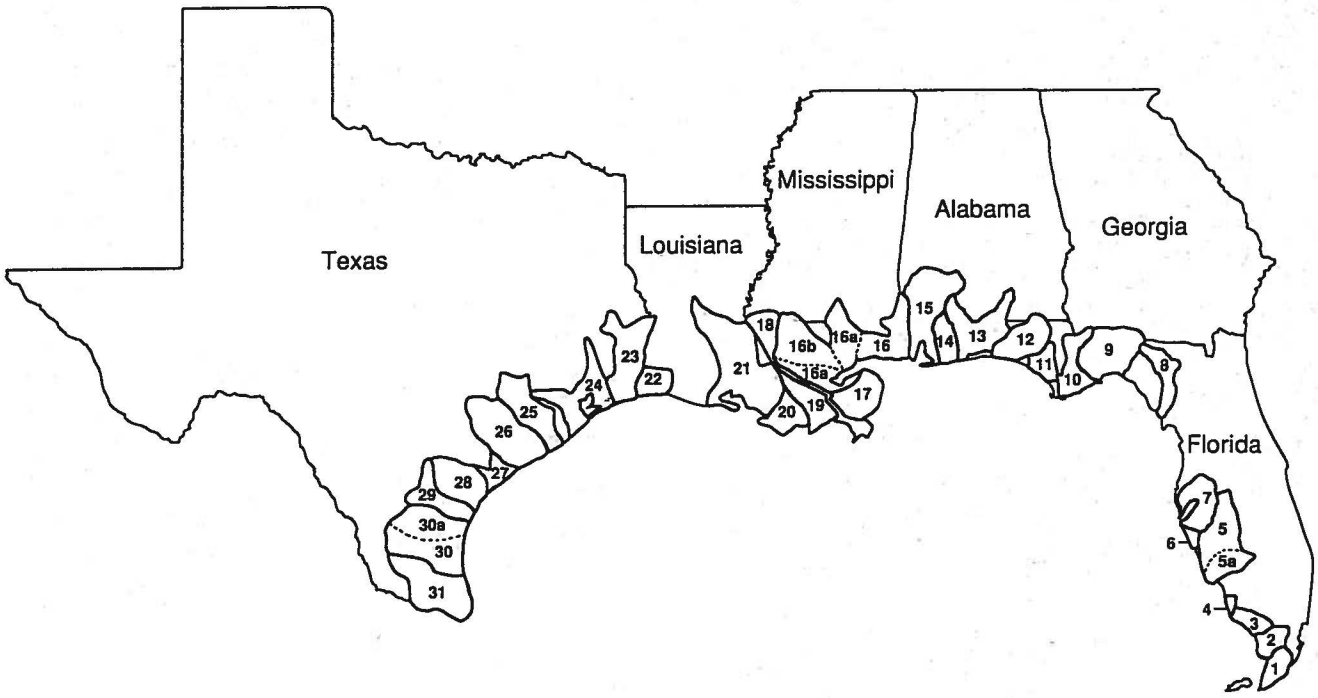
State/County[a]	Salt Marsh			Fresh Marsh				Forested and Scrub-Shrub					Tidal Flats[b]	
	Brackish	Unsp.	Subtotal[b]	Non Tidal	Tidal	Unsp.	Subtotal[b]	Est.	Fresh (Unsp.)	Non Tidal Fresh	Tidal Fresh	Subtotal[b]		Total
FLORIDA (cont.)														
117 Okeechobee (46)	0	0	0 (0)	289	0	0	289 (63)	0	0	170	0	170 (37)	0 (0)	459
118 Orange (76)	0	0	0 (0)	235	0	0	235 (24)	0	0	727	0	727 (76)	0 (0)	962
119 Osceola (56)	0	0	0 (0)	429	0	0	429 (33)	0	0	866	0	866 (67)	0 (0)	1,295
120 Palm Beach (88)	0	0	0 (0)	2,388	0	0	2,388 (62)	5	0	1,451	0	1,456 (38)	6 (0)	3,850
121 Putnam (96)	0	0	0 (0)	108	0	0	108 (10)	0	0	974	0	974 (90)	0 (0)	1,083
122 St. Johns (100)	0	169	169 (12)	89	1	0	90 (6)	12	0	1,126	1	1,140 (80)	27 (2)	1,425
123 St. Lucie (91)	0	11	11 (2)	274	0	0	274 (57)	49	0	137	1	187 (39)	5 (1)	477
124 Seminole (100)	0	0	0 (0)	158	0	0	158 (30)	0	0	376	0	376 (70)	0 (0)	534
125 Union	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
126 Volusia (92)	0	27	27 (1)	413	5	0	418 (18)	72	0	1,806	1	1,880 (80)	19 (1)	2,344
Subtotal	**0**	**1,060**	**1,060 (4)**	**10,888**	**65**	**1**	**10,954 (40)**	**668**	**1**	**14,254**	**105**	**15,028 (55)**	**161 (1)**	**27,204**
South Atlantic Total	**672**	**8,270**	**8,942 (11)**	**12,278**	**637**	**197**	**13,116 (16)**	**1,024**	**7,310**	**49,148**	**1,950**	**59,432 (72)**	**1,016 (1)**	**82,505**

Abbreviations: Unsp., Unspecified; Est., Estuarine; N/A, Not Available

a. Values in parentheses represent the percent of county grid sampled by NOAA. Areas with less than 100 percent coverage may not be completely mapped by the U.S. Fish and Wildlife Service.

b. Values in parentheses represent the percent of total county wetlands grid sampled by NOAA.

Gulf of Mexico



Estuarine Drainage Areas

1 Florida Bay
2 South Ten Thousand Islands
3 North Ten Thousand Islands
4 Rookery Bay
5 Charlotte Harbor
5a Caloosahatchee River
6 Sarasota Bay
7 Tampa Bay
8 Suwannee River
9 Apalachee Bay
10 Apalachicola Bay
11 St. Andrew Bay
12 Choctawhatchee Bay
13 Pensacola Bay
14 Perdido Bay
15 Mobile Bay
16 Mississippi Sound
16a Lake Borgne
16b Lake Pontchartrain
17 Breton/Chandeleur Sounds
18 Mississippi River
19 Barataria Bay
20 Terrebonne/Timbalier Bays
21 Atchafalaya/Vermilion Bays
22 Calcasieu Lake
23 Sabine Lake
24 Galveston Bay
25 Brazos River
26 Matagorda Bay
27 San Antonio Bay
28 Aransas Bay
29 Corpus Christi Bay
30 Upper Laguna Madre
30a Baffin Bay
31 Lower Laguna Madre

Note: Sub-estuaries are in italics.

Coastal wetlands by estuarine drainage area (Acres X 100)

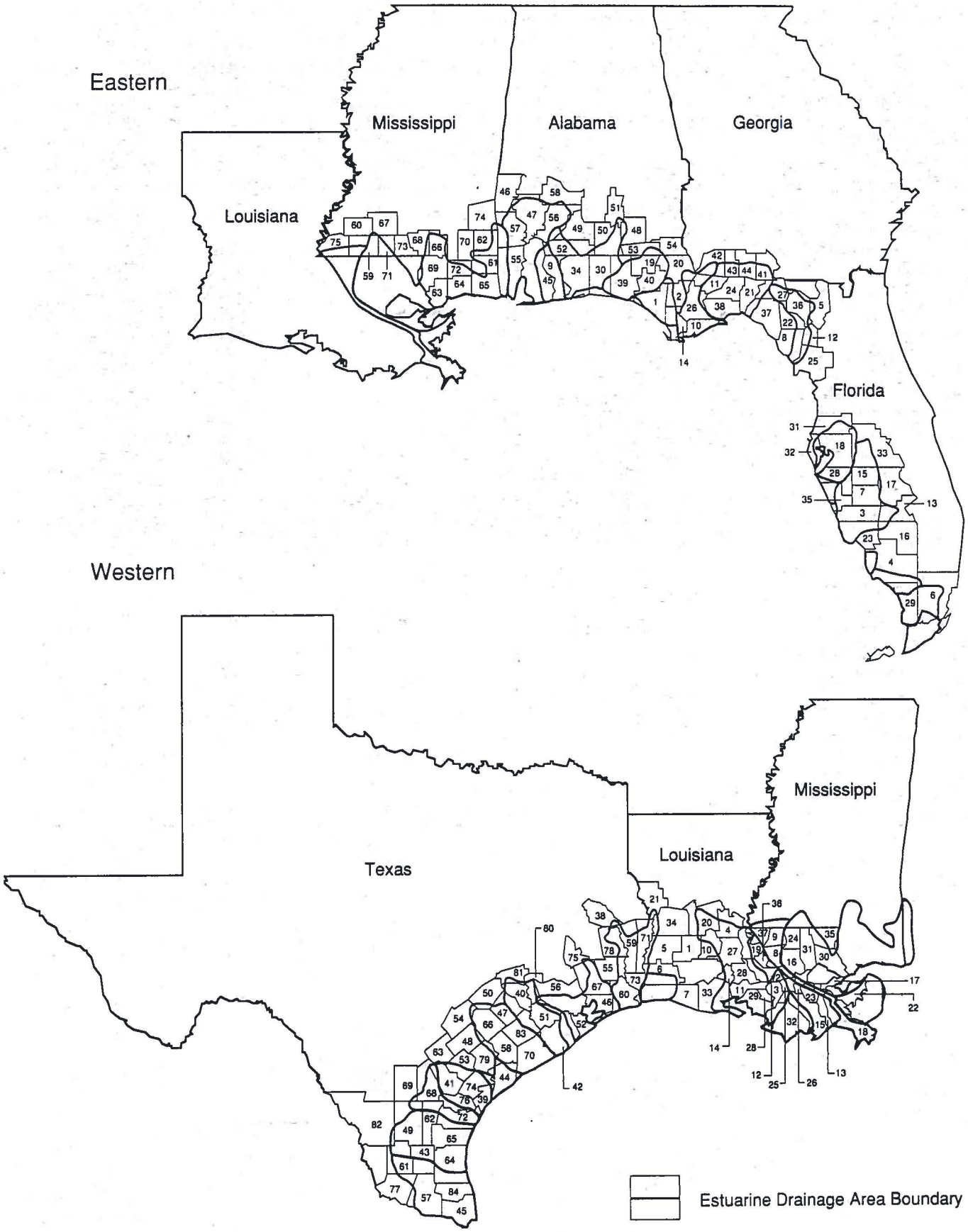
Estuarine Drainage Area[a]	Salt Marsh			Fresh Marsh				Forested and Scrub-Shrub					Tidal Flats[b]	
	Brackish	Unsp.	Subtotal[b]	Non Tidal	Tidal	Unsp.	Subtotal[b]	Est.	Fresh (Unsp.)	Non Tidal Fresh	Tidal Fresh	Subtotal[b]		Total
1 Florida Bay	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ten Thousand Islands (100)[c]	0	548	548 (3)	8,076	0	0	8,077 (37)	4,003	0	8,613	0	12,616 (58)	409 (2)	21,650
2 South Ten Thousand Islands	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3 North Ten Thousand Islands	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4 Rookery Bay	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5 Charlotte Harbor (100)	0	68	68 (1)	2,892	4	0	2,897 (46)	526	0	2,184	3	2,713 (43)	563 (9)	6,240
5a Caloosahatchee River	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6 Sarasota Bay	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7 Tampa Bay (100)	0	31	31 (1)	466	0	0	467 (19)	160	0	1,482	5	1,648 (65)	376 (15)	2,522
8 Suwanee Bay (100)	0	209	209 (9)	174	2	0	175 (8)	10	0	1,891	1	1,903 (83)	3 (0)	2,290
9 Apalachee Bay (87)	0	244	244 (4)	252	1	0	254 (4)	5	0	6,356	7	6,369 (92)	88 (1)	6,954
10 Apalachicola Bay (95)	0	170	170 (3)	41	46	0	87 (1)	0	0	5,478	107	5,585 (94)	75 (1)	5,916
11 St. Andrew Bay (100)	0	85	85 (3)	28	0	0	28 (1)	0	0	2,357	6	2,363 (94)	35 (1)	2,511
12 Choctawhatchee Bay (87)	0	27	27 (1)	37	0	0	37 (1)	3	0	2,672	5	2,679 (96)	58 (2)	2,801
13 Pensacola Bay (54)	0	67	67 (3)	61	0	0	61 (3)	3	0	2,291	4	2,297 (94)	20 (1)	2,445
14 Perdido Bay (100)	0	19	19 (1)	18	0	0	18 (1)	10	0	1,641	6	1,657 (97)	7 (0)	1,702
15 Mobile Bay (89)	0	170	170 (3)	70	1	1	72 (1)	19	8	6,233	13	6,272 (96)	30 (0)	6,545
16 Mississippi Sound (63)	976	730	1,706 (16)	104	0	328	432 (4)	12	1,649	6,816	0	8,477 (79)	75 (1)	10,689
16a Lake Borgne	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
16b Lake Pontchartrain	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mississippi Delta Region (73)[c]	5,137	5,292	10,429 (59)	717	644	1,964	3,324 (19)	85	1,253	2,402	48	3,788 (21)	151 (1)	17,693
17 Breton/Chandeleur Sounds	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
18 Mississippi River	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19 Barataria Bay	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20 Terrebone/Timbalier Bays	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
21 Atchafalaya/Vermilion Bays (41)	1,263	2	1,265 (27)	27	0	999	1,027 (22)	0	1,089	1,215	0	2,304 (50)	19 (0)	4,615
22 Calcasieu Lake (55)	805	21	826 (68)	0	0	328	328 (27)	0	0	0	0	0 (0)	65 (5)	1,220
23 Sabine Lake (67)	388	712	1,100 (28)	802	44	6	852 (22)	0	0	1,869	1	1,871 (48)	114 (3)	3,937
24 Galveston Bay (82)	0	949	949 (40)	515	74	0	589 (25)	2	0	704	38	744 (31)	111 (5)	2,393
25 Brazos River (57)	0	3	3 (1)	67	0	0	68 (35)	0	0	124	2	126 (64)	0 (0)	196
26 Matagorda Bay (54)	0	435	435 (51)	287	2	0	289 (34)	0	0	69	1	71 (8)	64 (7)	859
27 San Antonio Bay (100)	0	329	329 (49)	241	42	0	283 (42)	1	0	15	7	23 (3)	35 (5)	670
28 Aransas Bay (92)	0	307	307 (32)	396	24	0	420 (43)	17	0	79	12	107 (11)	139 (14)	974
29 Corpus Christi Bay (59)	0	122	122 (41)	65	8	0	73 (25)	0	0	13	1	14 (5)	87 (29)	295
30 Upper Laguna Madre	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
30a Baffin Bay	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
31 Lower Laguna Madre	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Laguna Madre (100)[c]	0	678	678 (15)	1,932	1	0	1,934 (43)	8	0	218	0	227 (5)	1,668 (37)	4,506
Gulf of Mexico Total	**8,567**	**11,220**	**19,788 (18)**	**17,269**	**895**	**3,628**	**21,793 (20)**	**4,865**	**3,999**	**54,721**	**267**	**63,852 (58)**	**4,192 (4)**	**109,625**

Abbreviations: Unsp., Unspecified; Est., Estuarine; N/A, Not Available

a. Values in parentheses represent the percent of EDA grid sampled by NOAA. Areas with less than 100 percent coverage may not be completely mapped by the U.S. Fish and Wildlife Service.

b. Values in parentheses represent the percent of total EDA wetlands grid sampled by NOAA.

c. One of the 92 estuaries from Volume 1 of NOAA's National Estuarine Inventory now divided into new estuarine drainage areas.


Eastern
Mississippi
Alabama
Georgia
Louisiana
Florida
Western
Texas
Louisiana
Mississippi
Estuarine Drainage Area Boundary

Coastal wetlands by county (Acres X 100)

State/County[a]	Salt Marsh			Fresh Marsh				Forested and Scrub-Shrub					Tidal Flats[b]	
	Brackish	Unsp.	Subtotal[b]	Non Tidal	Tidal	Unsp.	Subtotal[b]	Est.	Fresh (Unsp.)	Non Tidal Fresh	Tidal Fresh	Subtotal[b]		Total
Gulf of Mexico (Eastern)														
FLORIDA														
1 Bay (100)	0	82	82 (5)	24	0	0	24 (1)	0	0	1,584	6	1,591 (91)	48 (3)	1,746
** Broward (30)	0	0	0 (0)	993	0	0	993 (43)	0	0	1,318	0	1,318 (57)	0 (0)	2,311
2 Calhoun (100)	0	0	0 (0)	6	0	0	6 (1)	0	0	1,054	0	1,054 (99)	0 (0)	1,060
3 Charlotte (100)	0	51	51 (4)	545	1	0	546 (43)	226	0	272	0	498 (39)	184 (14)	1,279
** Citrus (100)	0	274	274 (33)	104	35	0	139 (17)	66	0	318	21	405 (49)	5 (1)	824
4 Collier (100)	0	150	150 (2)	1,606	0	0	1,606 (17)	959	0	6,678	0	7,637 (81)	91 (1)	9,484
5 Columbia (23)	0	0	0 (0)	7	0	0	7 (12)	0	0	49	0	49 (88)	0 (0)	56
6 Dade (54)	0	84	84 (1)	5,001	0	0	5,002 (79)	727	0	489	0	1,216 (19)	11 (0)	6,313
7 De Soto (88)	0	0	0 (0)	449	1	0	450 (63)	0	0	258	3	261 (37)	0 (0)	711
8 Dixie (100)	0	203	203 (9)	104	3	0	107 (5)	8	0	1,896	1	1,905 (85)	27 (1)	2,242
9 Escambia (100)	0	13	13 (1)	9	0	0	9 (1)	6	0	889	2	896 (95)	29 (3)	948
10 Franklin (100)	0	184	184 (7)	29	15	0	44 (2)	1	0	2,399	77	2,477 (90)	60 (2)	2,765
11 Gadsden (82)	0	0	0 (0)	7	0	0	7 (2)	0	0	462	0	462 (98)	0 (0)	470
12 Gilchrist (76)	0	0	0 (0)	18	0	0	18 (7)	0	0	260	0	260 (93)	0 (0)	278
13 Glades (3)	0	0	0 (0)	928	0	0	928 (80)	0	0	236	0	236 (20)	0 (0)	1,164
14 Gulf (100)	0	28	28 (1)	11	32	0	43 (2)	0	0	2,108	48	2,156 (96)	20 (1)	2,247
** Hamilton (15)	0	0	0 (0)	3	0	0	3 (9)	0	0	30	0	30 (91)	0 (0)	33
15 Hardee (100)	0	0	0 (0)	238	0	0	238 (31)	0	0	527	0	527 (69)	0 (0)	766
16 Hendry (100)	0	0	0 (0)	926	0	0	926 (54)	0	0	785	0	785 (46)	0 (0)	1,711
** Hernando (100)	0	92	92 (17)	50	5	0	55 (10)	4	0	361	3	368 (69)	17 (3)	532
17 Highlands (31)	0	0	0 (0)	175	0	0	175 (57)	0	0	133	0	133 (43)	0 (0)	308
18 Hillsborough (100)	0	12	12 (1)	164	0	0	165 (15)	74	0	775	3	852 (78)	68 (6)	1,096
19 Holmes (90)	0	0	0 (0)	8	0	0	8 (1)	0	0	724	0	724 (99)	0 (0)	731
20 Jackson (53)	0	0	0 (0)	16	0	0	16 (3)	0	0	534	0	534 (97)	0 (0)	550
21 Jefferson (100)	0	38	38 (3)	29	0	0	29 (2)	1	0	1,262	1	1,264 (95)	4 (0)	1,336
22 Lafayette (100)	0	0	0 (0)	118	0	0	118 (7)	0	0	1,486	0	1,486 (93)	0 (0)	1,603
23 Lee (100)	0	32	32 (2)	234	2	0	236 (13)	417	0	663	0	1,080 (58)	499 (27)	1,847
24 Leon (100)	0	0	0 (0)	107	0	0	107 (11)	0	0	836	0	836 (89)	0 (0)	943
25 Levy (100)	0	354	354 (17)	185	3	0	188 (9)	26	0	1,476	0	1,501 (73)	13 (1)	2,056
26 Liberty (100)	0	0	0 (0)	11	0	0	11 (0)	0	0	2,803	0	2,803 (100)	0 (0)	2,814
27 Madison (90)	0	0	0 (0)	78	0	0	78 (7)	0	0	1,106	0	1,106 (93)	0 (0)	1,185
28 Manatee (100)	0	17	17 (2)	294	0	0	294 (32)	60	0	419	2	481 (53)	113 (12)	904
** Marion (12)	0	0	0 (0)	27	0	0	27 (24)	0	0	86	0	86 (76)	0 (0)	113
29 Monroe (79)	0	393	393 (7)	958	0	0	958 (16)	3,450	0	748	0	4,197 (70)	413 (7)	5,962
30 Okaloosa (10)	0	3	3 (1)	9	0	0	9 (2)	1	0	534	0	535 (92)	33 (6)	580
** Palm Beach (5)	0	0	0 (0)	3	0	0	3 (2)	0	0	179	0	179 (98)	0 (0)	182
31 Pasco (100)	0	46	46 (4)	250	1	0	251 (24)	7	0	737	2	746 (71)	10 (1)	1,054
32 Pinellas (100)	0	9	9 (3)	14	0	0	14 (5)	55	0	89	1	145 (50)	119 (42)	288
33 Polk (61)	0	0	0 (0)	403	0	0	403 (32)	0	0	871	0	871 (68)	0 (0)	1,274
34 Santa Rosa (82)	0	65	65 (5)	48	0	0	48 (4)	3	0	1,099	4	1,106 (89)	24 (2)	1,243
35 Sarasota (100)	0	9	9 (1)	437	0	0	437 (59)	14	0	236	0	250 (34)	45 (6)	741
** Sumter	0	0	0 (0)	87	0	0	87 (16)	0	0	447	0	447 (84)	0 (0)	534

Abbreviations: Unsp., Unspecified; Est., Estuarine; N/A, Not Available

** Coastal county not within EDA boundaries.

a. Values in parentheses represent the percent of county grid sampled by NOAA, Areas with less than 100 percent coverage may not be completely mapped by the U.S. Fish and Wildlife Service.

b. Values in parentheses represent the percent of total county wetlands grid sampled by NOAA.

Coastal wetlands by county (Acres X 100)

State/County[a]	Salt Marsh			Fresh Marsh				Forested and Scrub-Shrub					Tidal Flats[b]	
	Brackish	Unsp.	Subtotal[b]	Non Tidal	Tidal	Unsp.	Subtotal[b]	Est.	Fresh (Unsp.)	Non Tidal Fresh	Tidal Fresh	Subtotal[b]		Total
FLORIDA (cont.)														
36 Suwannee (91)	0	0	0 (0)	14	0	0	14 (12)	0	0	102	0	102 (88)	0 (0)	115
37 Taylor (100)	0	218	218 (7)	275	0	0	275 (9)	28	0	2,539	0	2,566 (83)	18 (1)	3,077
38 Wakulla (100)	0	186	186 (10)	40	0	0	41 (2)	2	0	1,610	6	1,617 (85)	53 (3)	1,897
39 Walton (68)	0	27	27 (2)	15	0	0	15 (1)	3	0	1,026	5	1,034 (93)	34 (3)	1,110
40 Washington (100)	0	0	0 (0)	15	0	0	15 (2)	0	0	857	0	857 (98)	0 (0)	872
Subtotal	0	2,572	2,572 (4)	15,081	98	1	15,180 (21)	6,138	0	45,348	184	51,671 (72)	1,939 (3)	71,361
GEORGIA														
41 Brooks (26)	0	0	0 (0)	11	0	0	11 (9)	0	0	111	0	111 (91)	0 (0)	122
42 Decatur (14)	0	0	0 (0)	2	0	0	2 (3)	0	0	52	0	52 (97)	0 (0)	54
43 Grady (13)	0	0	0 (0)	1	0	0	1 (2)	0	0	82	0	82 (98)	0 (0)	83
* Lowndes (10)	0	0	0 (0)	1	0	0	1 (3)	0	0	29	0	29 (97)	0 (0)	30
* Seminole (<1)	0	0	0 (0)	0	0	0	0 (0)	0	0	0	0	0 (0)	0 (0)	0
44 Thomas (25)	0	0	0 (0)	9	0	0	9 (13)	0	0	59	0	59 (87)	0 (0)	68
Subtotal	0	0	0 (0)	24	0	0	24 (7)	0	0	332	0	332 (93)	0 (0)	356
ALABAMA														
45 Baldwin (100)	0	138	138 (5)	33	0	0	34 (1)	24	0	2,655	19	2,698 (93)	21 (1)	2,891
46 Choctaw (14)	0	0	0 (0)	1	0	0	1 (0)	0	0	219	0	219 (100)	0 (0)	220
47 Clarke (100)	0	0	0 (0)	19	0	0	19 (1)	0	0	1,524	0	1,524 (99)	0 (0)	1,543
48 Coffee	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
49 Conecuh (19)	0	0	0 (0)	3	0	0	3 (2)	0	0	182	0	182 (98)	0 (0)	185
50 Covington	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
51 Crenshaw	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
52 Escambia (54)	0	0	0 (0)	12	0	0	12 (2)	0	0	629	0	629 (98)	0 (0)	641
53 Geneva (2)	0	0	0 (0)	0	0	0	0 (0)	0	0	16	0	16 (100)	0 (0)	16
54 Houston (<1)	0	0	0 (0)	0	0	0	0 (0)	0	0	0	0	0 (100)	0 (0)	0
55 Mobile (63)	0	117	117 (8)	15	1	3	19 (1)	4	7	1,315	1	1,327 (89)	20 (1)	1,483
56 Monroe (100)	0	0	0 (0)	18	0	0	18 (2)	0	0	1,036	0	1,036 (98)	0 (0)	1,054
57 Washington (100)	0	0	0 (0)	20	0	0	20 (1)	0	0	2,342	0	2,342 (99)	0 (0)	2,363
58 Wilcox (29)	0	0	0 (0)	7	0	0	7 (2)	0	0	302	0	302 (98)	0 (0)	309
Subtotal	0	255	255 (2)	128	2	3	133 (1)	27	8	10,220	20	10,275 (96)	42 (0)	10,705
MISSISSIPPI														
59 Amite (30)	0	0	0 (0)	0	0	0	0 (0)	0	0	76	0	76 (100)	0 (0)	76
* Forrest (7)	0	0	0 (0)	0	0	0	0 (0)	0	0	39	0	39 (100)	0 (0)	39
60 Franklin (12)	0	0	0 (0)	0	0	0	0 (0)	0	0	2	0	2 (100)	0 (0)	2
61 George (100)	0	0	0 (0)	18	0	0	18 (2)	0	0	913	0	913 (98)	0 (0)	931
62 Greene (33)	0	0	0 (0)	3	0	0	3 (1)	0	0	450	0	450 (99)	0 (0)	453
63 Hancock (100)	9	220	230 (28)	22	0	9	30 (4)	1	147	398	0	547 (68)	0 (0)	807
64 Harrison (100)	9	68	78 (7)	17	0	0	17 (2)	3	1	940	0	944 (90)	12 (1)	1,050
65 Jackson (94)	0	282	282 (16)	23	0	0	23 (1)	5	31	1,443	0	1,478 (82)	11 (1)	1,794
66 Lamar (<1)	0	0	0 (0)	0	0	0	0 (0)	0	0	6	0	6 (100)	0 (0)	6
67 Lincoln (16)	0	0	0 (0)	0	0	0	0 (0)	0	0	20	0	20 (100)	0 (0)	20
68 Marion (6)	0	0	0 (0)	0	0	0	0 (0)	0	0	1	0	1 (100)	0 (0)	1
69 Pearl River (92)	0	0	0 (0)	8	0	0	8 (1)	0	0	1,009	0	1,009 (99)	0 (0)	1,017

Abbreviations: Unsp., Unspecified; Est., Estuarine; N/A, Not Available

* Non coastal county not within EDA boundaries.

a. Values in parentheses represent the percent of county grid sampled by NOAA. Areas with less than 100 percent coverage may not be completely mapped by the U.S. Fish and Wildlife Service.

b. Values in parentheses represent the percent of total county wetlands grid sampled by NOAA.

Coastal wetlands by county (Acres X 100)

State/County[a]	Salt Marsh			Fresh Marsh				Forested and Scrub-Shrub					Tidal Flats[b]	
	Brackish	Unsp.	Subtotal[b]	Non Tidal	Tidal	Unsp.	Subtotal[b]	Est.	Fresh (Unsp.)	Non Tidal Fresh	Tidal Fresh	Subtotal[b]		Total
MISSISSIPPI (cont.)														
70 Perry (19)	0	0	0 (0)	0	0	0	0 (0)	0	0	127	0	127 (100)	0 (0)	127
71 Pike (88)	0	0	0 (0)	1	0	0	1 (1)	0	0	129	0	129 (99)	0 (0)	130
72 Stone (93)	0	0	0 (0)	3	0	0	3 (1)	0	0	590	0	590 (99)	0 (0)	593
73 Walthall (38)	0	0	0 (0)	0	0	0	0 (0)	0	0	90	0	90 (100)	0 (0)	90
74 Wayne (6)	0	0	0 (0)	0	0	0	0 (0)	0	0	60	0	60 (100)	0 (0)	60
75 Wilkinson	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Subtotal	19	571	589 (8)	95	0	9	104 (1)	10	179	6,292	0	6,480 (90)	23 (0)	7,196
Gulf of Mexico (Western)														
LOUISIANA														
1 Allen (18)	0	0	0 (0)	0	0	0	0 (0)	0	0	96	0	96 (100)	0 (0)	96
2 Ascension (30)	0	0	0 (0)	0	0	0	0 (5)	0	2	0	0	2 (95)	0 (0)	2
3 Assumption (14)	0	0	0 (0)	2	0	0	2 (0)	0	0	761	0	761 (100)	0 (0)	763
4 Avoyelles (18)	0	0	0 (0)	6	0	0	6 (3)	0	0	215	0	215 (97)	0 (0)	221
5 Beauregard (30)	0	0	0 (0)	3	0	0	3 (1)	0	0	386	0	386 (99)	0 (0)	389
6 Calcasieu (14)	78	0	78 (40)	0	0	109	109 (56)	0	0	0	0	0 (0)	6 (3)	193
7 Cameron (95)	3,152	404	3,556 (63)	0	0	1,885	1,885 (34)	0	6	0	0	6 (0)	155 (3)	5,602
8 East Baton Rouge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9 East Feliciana	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10 Evangeline (65)	0	0	0 (0)	10	0	0	10 (3)	0	0	346	0	346 (97)	0 (0)	356
11 Iberia (52)	856	39	895 (85)	0	0	48	48 (5)	0	106	0	0	106 (10)	0 (0)	1,050
12 Iberville	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
13 Jefferson (77)	501	100	601 (56)	6	0	163	169 (16)	5	273	28	0	305 (28)	8 (1)	1,083
14 Lafayette	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15 Lafourche (70)	313	1,925	2,238 (65)	278	0	263	541 (16)	23	178	420	0	621 (18)	34 (1)	3,434
16 Livingston (20)	0	0	0 (0)	0	0	0	0 (0)	0	12	0	0	12 (100)	0 (0)	12
17 Orleans (92)	409	0	409 (73)	0	0	11	11 (2)	0	142	0	0	142 (25)	0 (0)	563
18 Plaquemines (100)	2,297	290	2,587 (72)	1	650	40	691 (19)	5	244	3	48	301 (8)	19 (1)	3,598
19 Point Coupee	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20 Rapides (7)	0	0	0 (0)	1	0	0	1 (1)	0	0	164	0	164 (99)	0 (0)	166
21 Sabine	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
22 St Bernard (100)	2,076	11	2,088 (95)	0	0	1	1 (0)	3	97	0	0	100 (5)	18 (1)	2,207
23 St Charles (53)	67	0	67 (8)	362	0	3	365 (45)	0	4	381	0	384 (47)	0 (0)	817
24 St. Helena	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
25 St James (86)	0	0	0 (0)	3	0	5	8 (1)	0	413	387	0	800 (99)	0 (0)	808
26 St John The Baptist (48)	68	0	68 (16)	12	0	37	49 (11)	0	220	100	0	321 (73)	0 (0)	437
27 St Landry (34)	0	0	0 (0)	5	0	0	5 (1)	0	0	369	0	369 (99)	0 (0)	374
28 St. Martin (10)	0	0	0 (0)	3	0	0	3 (1)	0	0	381	0	381 (99)	0 (0)	384
29 St Mary (90)	184	0	184 (9)	11	0	829	841 (41)	0	863	169	0	1,032 (50)	1 (0)	2,058
30 St Tammany (70)	253	60	313 (31)	0	0	141	141 (14)	1	190	362	0	553 (55)	1 (0)	1,008
31 Tangipahoa (28)	0	0	0 (0)	0	0	129	129 (19)	0	538	0	0	538 (81)	0 (0)	667
32 Terrebonne (90)	109	3,015	3,124 (58)	57	0	1,474	1,531 (28)	65	403	198	0	666 (12)	69 (1)	5,391
33 Vermilion (47)	1,019	2	1,021 (78)	0	0	219	219 (17)	0	53	17	0	70 (5)	6 (0)	1,315
34 Vernon (8)	0	0	0 (0)	0	0	0	0 (1)	0	0	86	0	87 (99)	0 (0)	87
35 Washington (41)	0	0	0 (0)	1	0	0	1 (0)	0	0	382	0	382 (100)	0 (0)	382

Abbreviations: Unsp., Unspecified; Est., Estuarine; N/A, Not Available

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b. Values in parentheses represent the percent of total county wetlands grid sampled by NOAA.

Coastal wetlands by county (Acres X 100)

State/County[a]	Salt Marsh			Fresh Marsh				Forested and Scrub-Shrub					Tidal Flats[b]	
	Brackish	Unsp.	Subtotal[b]	Non Tidal	Tidal	Unsp.	Subtotal[b]	Est.	Fresh (Unsp.)	Non Tidal Fresh	Tidal Fresh	Subtotal[b]		Total
LOUISIANA (cont.)														
36 West Baton Rouge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
37 West Feliciana	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Subtotal	11,382	5,847	17,229 (51)	759	650	5,358	6,767 (20)	102	3,744	5,253	48	9,147 (27)	318 (1)	33,462
TEXAS														
38 Angelina (27)	0	0	0 (0)	15	0	0	15 (19)	0	0	64	0	64 (81)	0 (0)	79
39 Aransas (100)	0	254	254 (45)	183	3	0	186 (33)	6	0	3	1	10 (2)	109 (20)	559
40 Austin (18)	0	0	0 (0)	1	0	0	1 (15)	0	0	5	0	5 (85)	0 (0)	6
41 Bee (70)	0	0	0 (0)	6	0	0	6 (50)	0	0	6	0	6 (50)	0 (0)	13
42 Brazoria (100)	0	536	536 (51)	245	28	0	274 (26)	0	0	186	19	205 (19)	41 (4)	1,056
43 Brooks (100)	0	0	0 (0)	27	0	0	27 (68)	0	0	13	0	13 (32)	0 (0)	40
44 Calhoun (90)	0	338	338 (49)	234	41	0	275 (40)	1	0	22	5	27 (4)	50 (7)	691
45 Cameron (100)	0	312	312 (30)	198	0	0	198 (19)	6	0	11	0	17 (2)	531 (50)	1,059
46 Chambers (100)	0	459	459 (56)	185	71	0	256 (31)	0	0	47	33	80 (10)	28 (3)	822
47 Colorado	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
48 De Witt (2)	0	0	0 (0)	0	0	0	0 (0)	0	0	0	0	0 (0)	0 (0)	0
49 Duval (90)	0	0	0 (0)	14	0	0	14 (22)	0	0	48	0	48 (78)	0 (0)	62
50 Fayette (8)	0	0	0 (0)	0	0	0	0 (0)	0	0	1	0	1 (100)	0 (0)	1
51 Fort Bend (68)	0	0	0 (0)	43	0	0	43 (33)	0	0	89	0	89 (67)	0 (0)	132
52 Galveston (100)	0	351	351 (74)	37	0	0	37 (8)	2	0	4	0	7 (1)	80 (17)	475
53 Goliad (52)	0	0	0 (0)	27	0	0	27 (47)	0	0	30	0	30 (53)	0 (0)	57
54 Gonzales	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
* Grimes (2)	0	0	0 (0)	0	0	0	0 (0)	0	0	0	0	0 (100)	0 (0)	0
55 Hardin (100)	0	0	0 (0)	50	0	0	50 (8)	0	0	606	0	606 (92)	0 (0)	655
56 Harris (64)	0	12	12 (9)	83	3	0	85 (59)	0	0	38	0	39 (27)	8 (6)	144
57 Hidalgo (100)	0	0	0 (0)	30	0	0	30 (56)	0	0	24	0	24 (44)	0 (0)	54
58 Jackson (75)	0	105	105 (54)	43	1	0	44 (23)	0	0	40	1	42 (21)	5 (2)	195
59 Jasper (86)	0	0	0 (0)	24	0	0	24 (4)	0	0	534	0	534 (96)	0 (0)	558
60 Jefferson (100)	0	629	629 (37)	852	35	0	888 (53)	0	0	120	1	121 (7)	44 (3)	1,681
61 Jim Hogg (94)	0	0	0 (0)	1	0	0	1 (17)	0	0	5	0	5 (83)	0 (0)	5
62 Jim Wells (94)	0	0	0 (0)	7	0	0	7 (15)	0	0	39	0	39 (85)	0 (0)	46
63 Karnes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
64 Kenedy (100)	0	244	244 (10)	921	0	0	921 (39)	1	0	45	0	47 (2)	1,120 (48)	2,332
65 Kleberg (100)	0	47	47 (7)	467	1	0	469 (70)	0	0	5	0	5 (1)	148 (22)	668
66 Lavaca	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
* Lee (48)	0	0	0 (0)	0	0	0	0 (0)	0	0	0	0	0 (0)	0 (0)	0
67 Liberty (93)	0	0	0 (0)	136	0	0	136 (15)	0	0	759	0	759 (85)	0 (0)	895
68 Live Oak (18)	0	0	0 (0)	9	0	0	9 (90)	0	0	1	0	1 (10)	0 (0)	9
69 McMullen	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
70 Matagorda (100)	0	563	563 (62)	202	4	0	206 (23)	0	0	56	1	58 (6)	87 (10)	914
71 Newton (71)	0	0	0 (0)	9	0	0	9 (2)	0	0	471	0	472 (98)	0 (0)	480
72 Nueces (100)	0	52	52 (21)	94	0	0	95 (39)	10	0	6	0	17 (7)	81 (33)	244
73 Orange (7)	0	31	31 (16)	74	9	0	83 (44)	0	0	75	0	76 (40)	0 (0)	190
* Polk (4)	0	0	0 (0)	2	0	0	2 (12)	0	0	12	0	12 (88)	0 (0)	14
74 Refugio (5)	0	112	112 (21)	291	22	0	312 (59)	0	0	74	12	86 (16)	21 (4)	531

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b. Values in parentheses represent the percent of total county wetlands grid sampled by NOAA.

Coastal wetlands by county (Acres X 100)

State/County[a]	Salt Marsh			Fresh Marsh				Forested and Scrub-Shrub					Tidal Flats[b]	
	Brackish	Unsp.	Subtotal[b]	Non Tidal	Tidal	Unsp.	Subtotal[b]	Est.	Fresh (Unsp.)	Non Tidal Fresh	Tidal Fresh	Subtotal[b]		Total
TEXAS (cont.)														
* Sabine (100)	0	0	0 (0)	0	0	0	0 (14)	0	0	3	0	3 (86)	0 (0)	3
* San Augustine (38)	0	0	0 (0)	2	0	0	2 (100)	0	0	0	0	0 (0)	0 (0)	2
75 San Jacinto (67)	0	0	0 (0)	5	0	0	5 (24)	0	0	14	0	14 (76)	0 (0)	19
76 San Patricio (91)	0	120	120 (52)	50	9	0	60 (26)	0	0	9	2	11 (5)	40 (17)	230
77 Starr (46)	0	0	0 (0)	3	0	0	3 (35)	0	0	5	0	5 (65)	0 (0)	7
78 Tyler (61)	0	0	0 (0)	13	0	0	13 (4)	0	0	320	0	320 (96)	0 (0)	333
79 Victoria (10)	0	15	15 (5)	150	0	0	150 (46)	0	0	157	0	157 (49)	1 (0)	323
80 Waller (67)	0	0	0 (0)	20	0	0	20 (59)	0	0	14	0	14 (41)	0 (0)	34
81 Washington (100)	0	0	0 (0)	2	0	0	2 (20)	0	0	10	0	10 (80)	0 (0)	13
82 Webb (5)	0	0	0 (0)	6	0	0	6 (32)	0	0	13	0	13 (68)	0 (0)	20
83 Wharton (11)	0	0	0 (0)	37	0	0	37 (67)	0	0	18	0	18 (33)	0 (0)	56
84 Willacy (33)	0	139	139 (18)	260	0	0	260 (33)	0	0	21	0	21 (3)	358 (46)	779
* Zapata (59)	0	0	0 (0)	0	0	0	0 (100)	0	0	0	0	0 (0)	0 (0)	0
Subtotal	0	4,321	4,321 (26)	5,075	227	0	5,303 (32)	29	1	4,107	75	4,213 (25)	2,753 (17)	16,590
Gulf of MexicoTotal	11,401	13,565	24,966 (18)	21,162	977	5,372	27,511 (20)	6,307	3,932	71,553	327	82,118 (59)	5,075 (4)	139,670

Abbreviations: Unsp., Unspecified; Est., Estuarine; N/A, Not Available

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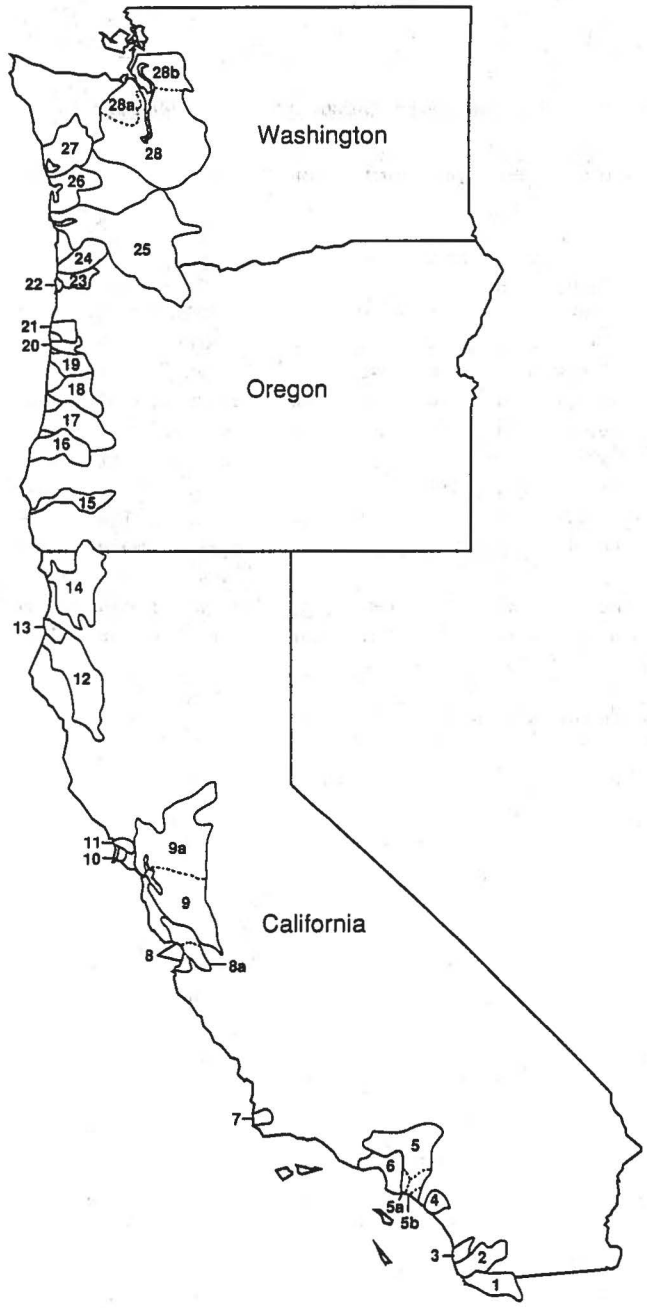
b. Values in parentheses represent the percent of total county wetlands grid sampled by NOAA.

Pacific



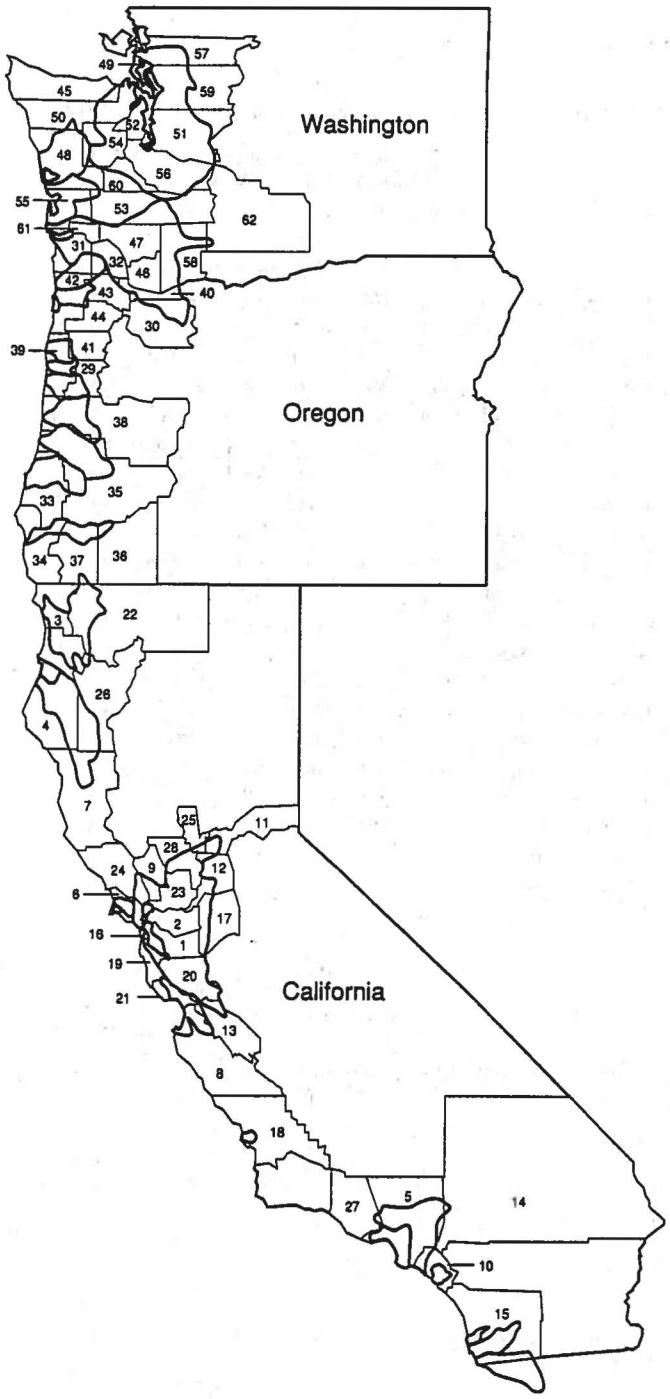
Estuarine Drainage Areas

1 Tijuana Estuary
2 San Diego Bay
3 Mission Bay
4 Newport Bay
5 San Pedro Bay
5a Alamitos Bay
5b Anaheim Bay
6 Santa Monica Bay
7 Morro Bay
8 Monterey Bay
8a Elkhorn Slough
9 San Francisco Bay
9a Central San Francisco/ San Pablo/Suisun Bays
10 Drakes Estero
11 Tomales Bay
12 Eel River
13 Humboldt Bay
14 Klamath River
15 Rogue River
16 Coos Bay
17 Umpqua River (old Winchester Bay)
18 Siuslaw River
19 Alsea River
20 Yaquina Bay
21 Siletz Bay
22 Netarts Bay
23 Tillamook Bay
24 Nehalem River
25 Columbia River
26 Willapa Bay
27 Grays Harbor
28 Puget Sound
28a Hood Canal
28b Skagit Bay

Note: Sub-estuaries are in italics.

Coastal wetlands by estuarine drainage area (Acres X 100)

Estuarine Drainage Area[a]	Salt Marsh			Fresh Marsh				Forested and Scrub-Shrub					Tidal Flats[b]	
	Brackish	Unsp.	Subtotal[b]	Non Tidal	Tidal	Unsp.	Subtotal[b]	Est.	Fresh (Unsp.)	Non Tidal Fresh	Tidal Fresh	Subtotal[b]		Total
1 Tijuana Estuary	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2 San Diego Bay (97)	0	1	1 (4)	19	0	0	19 (51)	0	0	10	0	10 (27)	7 (19)	37
3 Mission Bay	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4 Newport Bay	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5 San Pedro Bay (71)	0	9	9 (20)	12	0	0	12 (28)	0	0	13	0	13 (30)	9 (22)	43
6 Santa Monica Bay (95)	0	1	1 (3)	0	0	0	1 (3)	0	0	0	0	0 (0)	26 (94)	28
7 Morro Bay	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8 Monterey Bay (81)	0	11	11 (33)	15	0	0	15 (45)	0	0	1	1	3 (8)	5 (14)	33
9 San Francisco Bay (95)	0	797	797 (14)	401	72	5	477 (8)	0	3,822	87	45	3,955 (68)	589 (10)	5,819
10 Drakes Estero	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11 Tomales Bay	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12 Eel Bay (98)	0	5	5 (4)	84	0	1	85 (66)	0	6	19	0	25 (19)	14 (11)	129
13 Humboit Bay (99)	0	12	12 (6)	80	0	0	80 (38)	0	0	6	0	6 (3)	115 (54)	213
14 Klamath River (100)	0	0	0 (0)	2	0	2	4 (30)	0	1	8	0	9 (70)	0 (0)	13
15 Rogue River	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
16 Coos Bay (100)	0	15	15 (8)	76	4	0	80 (42)	0	0	24	1	25 (13)	69 (37)	189
17 Umpqua River	0	4	4 (4)	38	6	0	44 (44)	0	0	36	2	38 (38)	14 (14)	100
18 Siuslaw River	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19 Alsea River	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20 Yaquina Bay	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
21 Siletz Bay	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
22 Netarts Bay	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
23 Tillamook Bay	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
24 Nehalem River	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
25 Columbia River (91)	0	53	53 (5)	368	35	0	403 (40)	0	1	370	88	459 (45)	98 (10)	1,013
26 Willapa Bay (83)	0	79	79 (12)	61	6	11	78 (12)	0	0	135	18	116 (17)	400 (59)	673
27 Grays Harbor (89)	0	42	42 (6)	48	11	5	64 (9)	0	0	170	56	229 (32)	373 (53)	708
28 Puget Sound (89)	0	79	79 (3)	579	8	0	587 (24)	0	0	752	11	764 (31)	1,048 (42)	2,478
Pacific Total	1	1,108	1,109 (10)	1,784	141	23	1,948 (17)	2	3,831	1,631	224	5,652 (49)	2,768 (24)	11,476
National Total	9,594	23,875	33,469 (16)	25,559	2,024	4,490	32,073 (15)	5,780	23,458	102,340	2,741	134,320 (64)	11,177 (5)	211,037



Estuarine Drainage Area Boundary

Coastal wetlands by county (Acres X 100)

State/County[a]	Salt Marsh				Fresh Marsh			Forested and Scrub-Shrub					Tidal Flats[b]	
	Brackish	Unsp.	Subtotal[b]	Non Tidal	Tidal	Unsp.	Subtotal[b]	Est.	Fresh (Unsp.)	Non Tidal Fresh	Tidal Fresh	Subtotal[b]		Total
CALIFORNIA														
1 Alameda (98)	0	40	40 (14)	41	0	4	44 (16)	0	7	6	0	13 (5)	184 (65)	281
2 Contra Costa (100)	0	73	73 (14)	25	8	0	33 (6)	0	352	10	3	365 (68)	66 (12)	538
3 Del Norte (95)	0	0	0 (0)	30	1	1	32 (45)	0	1	37	0	37 (52)	2 (3)	71
* Fresno (5)	0	0	0 (0)	0	0	0	0 (0)	0	0	0	0	0 (100)	0 (0)	0
* Glenn (2)	0	0	0 (0)	1	0	0	1 (0)	0	0	0	0	0 (0)	0 (0)	1
4 Humboldt (97)	0	18	18 (5)	183	0	5	189 (48)	0	11	34	2	47 (12)	137 (35)	391
* Imperial (5)	0	0	0 (0)	0	0	0	0 (0)	0	0	0	0	0 (100)	0 (0)	0
* Kern (10)	0	0	0 (0)	1	0	0	1 (35)	0	0	2	0	2 (65)	0 (0)	3
* Kings (3)	0	0	0 (0)	0	0	0	0 (0)	0	0	0	0	0 (0)	0 (0)	0
* Lake (34)	0	0	0 (0)	6	0	0	6 (78)	0	0	2	0	2 (22)	0 (0)	8
5 Los Angeles (71)	0	1	1 (2)	11	0	0	12 (19)	0	0	30	0	30 (49)	18 (29)	60
6 Marin (95)	0	37	37 (13)	44	6	0	50 (18)	0	47	10	0	57 (21)	130 (47)	275
7 Mendocino (100)	0	2	2 (6)	10	0	0	10 (33)	0	0	13	0	13 (44)	5 (16)	29
* Merced (6)	0	0	0 (0)	0	0	0	0 (12)	0	0	0	0	0 (88)	0 (0)	1
8 Monterey (94)	0	14	14 (8)	22	0	0	23 (13)	0	0	129	2	131 (76)	5 (3)	173
9 Napa (85)	0	30	30 (35)	31	0	0	31 (37)	0	6	9	1	15 (18)	9 (10)	85
10 Orange (98)	0	12	12 (18)	14	0	0	14 (21)	0	0	26	0	26 (40)	13 (20)	65
11 Placer (23)	0	0	0 (0)	20	0	0	20 (62)	0	0	12	0	12 (38)	0 (0)	32
* Riverside (16)	0	0	0 (0)	45	0	0	45 (45)	0	0	54	0	54 (54)	0 (0)	100
12 Sacramento (76)	0	0	0 (0)	46	22	0	69 (9)	0	687	39	6	733 (91)	0 (0)	802
13 San Benito (75)	0	0	0 (2)	5	0	0	5 (21)	0	0	18	0	18 (77)	0 (0)	23
14 San Bernardino (0)	0	0	0 (0)	1	0	0	1 (33)	0	0	3	0	3 (67)	0 (0)	4
15 San Diego (60)	0	8	8 (6)	53	0	0	53 (38)	0	0	64	0	64 (46)	14 (10)	140
16 San Francisco (100)	0	0	0 (0)	0	0	0	0 (16)	0	0	0	0	0 (16)	2 (69)	3
17 San Joaquin (57)	0	0	0 (0)	19	13	0	32 (2)	0	1,810	21	27	1,859 (98)	0 (0)	1,891
18 San Luis Obispo (97)	0	1	1 (1)	17	0	0	17 (15)	0	0	86	0	86 (74)	14 (12)	117
19 San Mateo (86)	0	32	32 (19)	7	1	2	9 (5)	0	0	13	0	13 (8)	110 (67)	164
* Santa Barbara (98)	0	8	8 (8)	8	1	0	9 (12)	0	0	42	1	43 (57)	17 (23)	76
20 Santa Clara (98)	0	17	17 (24)	15	0	0	15 (21)	0	0	9	0	9 (13)	29 (41)	70
21 Santa Cruz (50)	0	0	0 (13)	0	0	0	0 (13)	0	0	1	0	1 (40)	1 (33)	3
22 Siskiyou (23)	0	0	0 (0)	0	0	1	1 (7)	0	7	0	0	7 (93)	0 (0)	8
23 Solano (99)	0	524	524 (43)	95	11	0	106 (9)	0	457	4	3	464 (38)	113 (9)	1,207
24 Sonoma (89)	0	61	61 (17)	30	0	0	30 (8)	0	191	26	0	217 (59)	58 (16)	366
* Stanislaus (8)	0	0	0 (0)	5	0	0	5 (35)	0	0	9	0	9 (65)	0 (0)	14
25 Sutter (42)	0	0	0 (0)	17	0	0	17 (37)	0	0	30	0	30 (63)	0 (0)	47
* Tehama (2)	0	0	0 (0)	1	0	0	1 (100)	0	0	0	0	0 (0)	0 (0)	1
26 Trinity (27)	0	0	0 (0)	0	0	0	0 (20)	0	1	0	0	2 (80)	0 (0)	2
27 Ventura (97)	0	31	31 (24)	28	0	0	28 (22)	0	0	56	0	56 (44)	13 (10)	128
28 Yolo (69)	0	0	0 (0)	86	12	1	99 (24)	0	288	21	4	312 (76)	0 (0)	411
* Yuba (2)	0	0	0 (0)	2	0	0	2 (19)	0	0	8	0	8 (81)	0 (0)	9
Subtotal	0	909	909 (12)	922	77	14	1,013 (13)	0	3,865	826	50	4,741 (62)	939 (12)	7,603
OREGON														
29 Benton (98)	0	0	0 (0)	14	0	0	14 (11)	0	0	107	0	107 (88)	0 (0)	122

Abbreviations: Unsp., Unspecified; Est., Estuarine; N/A, Not Available

* Non coastal county not within EDA boundaries.

a. Values in parentheses represent the percent of county grid sampled by NOAA. Areas with less than 100 percent coverage may not be completely mapped by the U.S. Fish and Wildlife Service.

b. Values in parentheses represent the percent of total county wetlands grid sampled by NOAA.

Coastal wetlands by county (Acres X 100)

State/County[a]	Salt Marsh			Fresh Marsh				Forested and Scrub-Shrub					Tidal Flats[b]	
	Brackish	Unsp.	Subtotal[b]	Non Tidal	Tidal	Unsp.	Subtotal[b]	Est.	Fresh (Unsp.)	Non Tidal Fresh	Tidal Fresh	Subtotal[b]		Total
OREGON (cont.)														
30 Clackamas (60)	0	0	0 (1)	7	0	0	7 (15)	0	0	37	0	37 (84)	0 (0)	44
31 Clatsop (88)	0	52	52 (27)	28	3	0	32 (16)	0	1	38	41	81 (42)	29 (15)	193
32 Columbia (95)	0	0	0 (0)	86	11	0	96 (55)	0	0	61	18	80 (45)	0 (0)	176
33 Coos (100)	0	20	20 (5)	228	5	13	246 (62)	0	0	60	1	62 (16)	68 (17)	395
34 Curry (100)	0	1	1 (1)	10	0	8	18 (29)	0	6	11	0	17 (28)	27 (43)	62
35 Douglas (97)	0	4	4 (2)	69	6	0	75 (41)	0	0	85	2	87 (48)	16 (9)	182
36 Jackson (13)	0	0	0 (0)	0	0	0	0 (33)	0	0	0	0	1 (67)	0 (0)	1
37 Josephine (77)	0	0	0 (0)	1	0	5	7 (26)	0	16	3	0	19 (74)	0 (0)	26
* Klamath (5)	0	0	0 (0)	2	0	0	2 (13)	0	0	12	0	12 (87)	0 (0)	14
38 Lane (88)	0	9	9 (4)	79	0	1	80 (34)	0	0	130	1	132 (56)	13 (5)	234
39 Lincoln (98)	0	24	24 (18)	38	2	0	40 (30)	1	0	24	0	24 (18)	48 (36)	135
* Linn (34)	0	0	0 (0)	17	0	0	17 (18)	0	0	78	0	78 (82)	0 (0)	95
* Marion (31)	0	0	0 (0)	11	0	0	11 (21)	0	0	43	0	43 (79)	0 (0)	54
40 Multnomah (100)	0	0	0 (0)	44	5	0	49 (52)	0	0	43	2	45 (48)	0 (0)	94
41 Polk (99)	0	0	0 (0)	15	0	0	15 (15)	0	0	82	0	82 (85)	0 (0)	97
42 Tillamook (96)	0	22	22 (13)	22	1	0	23 (13)	0	0	16	2	18 (11)	108 (63)	171
43 Washington (95)	0	0	0 (0)	24	0	0	24 (39)	0	0	37	0	37 (61)	0 (0)	60
44 Yamhill (96)	0	0	0 (0)	15	0	0	15 (27)	0	0	41	0	41 (73)	0 (0)	56
Subtotal	**0**	**132**	**132 (6)**	**711**	**31**	**28**	**770 (35)**	**1**	**23**	**908**	**69**	**1,101 (50)**	**309 (14)**	**2,213**
WASHINGTON														
* Chelan (2)	0	0	0 (0)	0	0	0	0 (0)	0	0	0	0	0 (0)	0 (0)	0
45 Clallam (26)	0	8	8 (8)	6	1	0	7 (7)	0	0	37	0	37 (38)	45 (47)	97
46 Clark	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
47 Cowlitz (89)	0	0	0 (0)	46	1	0	47 (53)	0	0	42	0	43 (48)	0 (0)	89
48 Grays Harbor (95)	0	39	39 (9)	76	12	5	93 (21)	0	0	209	57	266 (60)	44 (10)	442
49 Island (97)	0	4	4 (4)	30	0	0	30 (33)	0	0	14	0	14 (16)	43 (48)	90
50 Jefferson (94)	0	6	6 (3)	40	1	0	41 (18)	0	0	129	3	132 (57)	53 (23)	232
51 King (94)	0	0	0 (0)	81	0	0	81 (34)	0	0	142	0	142 (59)	16 (7)	239
52 Kitsap (99)	0	2	2 (2)	24	0	0	24 (25)	0	0	40	0	40 (41)	32 (33)	98
* Kittitas (11)	0	0	0 (0)	5	0	0	5 (35)	0	0	8	0	8 (65)	0 (0)	13
* Klickitat (1)	0	0	0 (0)	3	0	0	3 (23)	0	0	8	0	8 (77)	0 (0)	11
53 Lewis (83)	0	0	0 (0)	186	0	0	186 (56)	0	0	144	0	144 (44)	0 (0)	330
* Lincoln (92)	0	4	4 (1)	29	0	0	29 (11)	0	0	149	1	150 (56)	86 (32)	269
54 Mason	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
55 Pacific (84)	0	66	66 (14)	78	7	11	96 (20)	0	0	121	19	140 (29)	177 (37)	479
56 Pierce (73)	0	3	3 (1)	69	0	0	69 (28)	0	0	122	0	122 (50)	50 (20)	244
* San Juan (95)	0	0	0 (1)	22	0	0	22 (29)	0	0	5	0	5 (7)	48 (63)	75
57 Skagit (90)	0	23	23 (10)	57	2	0	59 (26)	0	0	92	4	96 (42)	51 (22)	229
58 Skamania (70)	0	0	0 (0)	14	0	0	14 (26)	0	0	39	0	39 (74)	0 (0)	52
59 Snohomish (97)	0	13	13 (4)	86	6	0	91 (30)	0	0	160	5	165 (55)	31 (10)	300
60 Thurston (89)	0	6	6 (3)	75	0	0	75 (34)	0	0	99	0	99 (45)	42 (19)	222
61 Wahkiakum (58)	0	7	7 (11)	23	4	0	27 (44)	0	0	9	17	26 (43)	1 (1)	61

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Coastal wetlands by county (Acres X 100)

State/County[a]	Salt Marsh			Fresh Marsh				Forested and Scrub-Shrub					Tidal Flats[b]	
	Brackish	Unsp.	Subtotal[b]	Non Tidal	Tidal	Unsp.	Subtotal[b]	Est.	Fresh (Unsp.)	Non Tidal Fresh	Tidal Fresh	Subtotal[b]		Total
WASHINGTON (cont.)														
* Whatcom (78)	0	2	2 (1)	123	0	0	123 (41)	0	0	139	0	140 (47)	34 (11)	299
62 Yakima (5)	0	0	0 (0)	8	0	0	8 (46)	0	0	10	0	10 (54)	0 (0)	18
Subtotal	0	183	183 (5)	1,079	32	17	1,128 (29)	2	0	1,720	108	1,829 (47)	752 (19)	3,886
Pacific Total	1	1,218	1,219 (9)	2,713	143	58	2,912 (21)	2	3,889	3,454	227	7,571 (55)	2,001 (15)	13,703
National Total	12,404	30,299	42,703 (16)	36,767	2,114	6,447	45,328 (17)	7,474	28,661	134,528	3,139	173,802 (63)	12,080 (4)	273,912

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