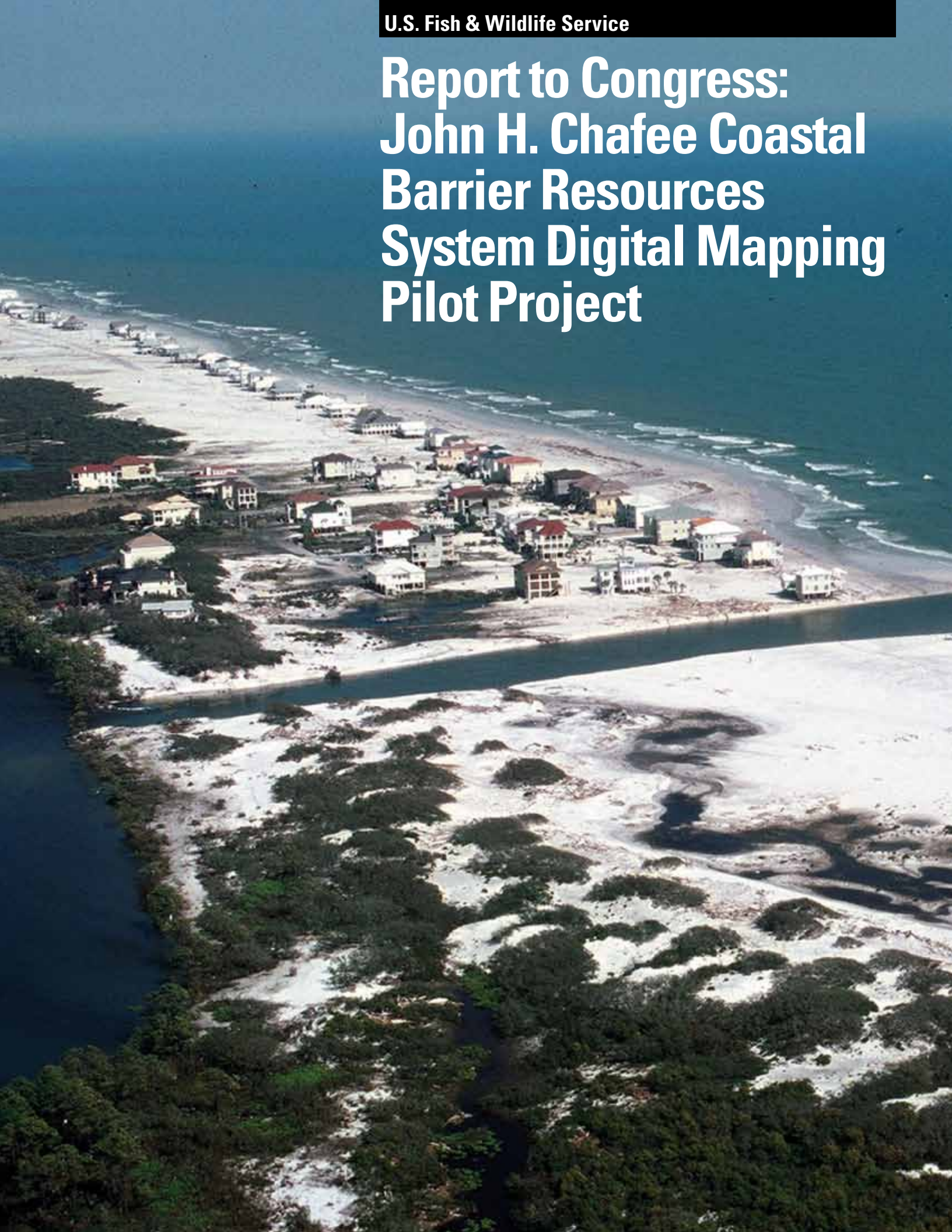
U.S. Fish & Wildlife Service

Report to Congress: John H. Chafee Coastal Barrier Resources System Digital Mapping Pilot Project



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U.S. Fish and Wildlife Service
Fisheries and Habitat Conservation
Washington, D.C.

Preface

The Coastal Barrier Resources Act (CBRA) conserves ecologically important coastal habitat by prohibiting most Federal subsidies that encourage risky development along our Nation's coastal barriers. By discouraging coastal barrier development, the CBRA also protects lives and mainland property, and saves taxpayer dollars. At the time the CBRA was enacted in 1982, President Ronald Reagan said, "This legislation will enhance both wise natural resource conservation and fiscal responsibility. It will save American taxpayers millions of dollars while, at the same time, taking a major step forward in the conservation of our magnificent coastal resources." Today, bearing out President Reagan's words, the John H. Chafee Coastal Barrier Resources System (CBRS) includes more than 3 million acres of coastal barrier habitat, and it is estimated that by 2010, the CBRA will have saved American taxpayers well over $1 billion.

Coastal barriers and their associated aquatic habitats are key components of a strong economy and healthy environment. They support commercial and recreational fisheries; provide essential habitat for many endangered species and migratory birds; protect the mainland from severe storms and hurricanes; and are enjoyed by millions of vacationing Americans every year. The devastating hurricanes striking the Gulf Coast in recent years are a reminder of the dangers associated with building in these hazardous areas. By limiting Federal subsidies such as flood insurance within the CBRS, the CBRA removes unwise Federal incentives to develop these areas.

A major challenge to maintaining the CBRS for the long term is that the existing CBRS maps are inaccurate, outdated, and difficult to interpret. CBRS information is difficult to access because the boundaries of these areas are not available in digital format. Landowners are sometimes unaware that their property is within the CBRS until they are turned down for Federal flood insurance, creating unexpected hardships. Recognizing the limitations and problems associated with the existing set of CBRS maps, Congress enacted the Coastal Barrier Resources Reauthorization Act in 2000, which directs the Secretary of the Interior, in consultation with the Director of the Federal Emergency Management Agency, to conduct a Digital Mapping Pilot Project. This is the Administration's report to Congress, as called for in the 2000 Act, that provides the results of the pilot project, including draft digital maps for 70 CBRS areas, and an assessment of the feasibility, data needs, and costs associated with completing digital maps for the entire CBRS.

The Administration supports the CBRA and modernization of the CBRS maps using digital technology. In May 2006, Congress reaffirmed its support for the CBRA and its commitment towards digital CBRS mapping by enacting the Coastal Barrier Resources Reauthorization Act of 2005 which directs the Secretary of the Interior to finalize the pilot project maps by conducting a public review of the maps included in this report, and creating digital maps for the entire CBRS. Modernized, digital maps will address the inaccuracies of the outdated maps, correct errors that adversely affect private property owners, increase efficiencies and accessibility by allowing the integration of CBRS information into digital planning tools, conserve natural resources, and preserve the integrity of the CBRS for the long-term.

The U.S. Fish and Wildlife Service believes that the CBRA has largely achieved its goals to minimize the loss of human life, wasteful expenditure of Federal revenues, and the damage to natural resources associated with America's coastal barriers. We look forward to working with Congress to move the CBRA into the digital age where it can continue to achieve its goals with greater efficiency.

Digital Mapping Pilot Project Authority

Recognizing the limitations and problems associated with the existing set of John H. Chafee Coastal Barrier Resources System (CBRS) maps, the Coastal Barrier Resources Reauthorization Act (CBRRA) of 2000 directs the Secretary of the Interior (Secretary) to carry out a pilot project that consists of the creation of digital maps for no more than 75 units and no fewer than 50 units of the CBRS, one-third of which shall be otherwise protected areas (OPAs). The CBRRA specifies that not later than three years after the date of enactment, the Secretary shall submit a report that describes the results of the pilot project and the feasibility, data needs, and costs of completing digital maps for the entire CBRS to the Committee on Environment and Public Works of the Senate and the Committee on Natural Resources of the House of Representatives. The CBRRA specifies that the report shall include a description of:

- the cooperative agreements that will be necessary to complete digital mapping of the entire CBRS;
- the extent to which the data necessary to complete digital mapping of the entire CBRS are available;
- the need for additional data to complete digital mapping of the entire CBRS;
- the extent to which the boundary lines on the digital maps differ from the boundary lines on the original maps; and
- the amount of funding necessary to complete digital mapping of the entire CBRS.

This report to Congress provides the results of the pilot project and an assessment of the feasibility and costs associated with completing digital maps for the entire CBRS.

The CBRRA of 2005 directs the Secretary to: (1) finalize the digital mapping pilot project by providing for public review of the draft maps and presenting Congress with final recommended pilot project maps; and (2) create draft digital maps for the remainder of the CBRS, provide for public review, and present Congress with final recommended maps.

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List of Acronyms and Abbreviations

CBIA – Coastal Barrier Improvement Act of 1990
CBRA – Coastal Barrier Resources Act of 1982
CBRRA of 2000 – Coastal Barrier Resources Reauthorization Act of 2000
CBRRA of 2005 – Coastal Barrier Resources Reauthorization Act of 2005
CBRS – John H. Chafee Coastal Barrier Resources System
CIR – Color infrared
Department – Department of the Interior
DOQQ – Digital Orthophoto Quarter Quadrangle
FEMA – Federal Emergency Management Agency
FGDC – Federal Geographic Data Committee
FIRM – Flood Insurance Rate Map
GIS – Geographic Information System
NASA – National Aeronautics and Space Administration
NFIA – National Flood Insurance Act of 1968
NFIP – National Flood Insurance Program
NOAA – National Oceanic and Atmospheric Administration
NRCS – Natural Resources Conservation Service
NSDI – National Spatial Data Infrastructure
NWI – National Wetlands Inventory
OBRA – Omnibus Budget Reconciliation Act of 1981
OPA – Otherwise Protected Area
Secretary – Secretary of the Interior
Service – United States Fish and Wildlife Service
USDA – United States Department of Agriculture
USGS – United States Geological Survey

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Photo by U.S. Geological Survey
This aerial photograph of Navarre Beach, Florida, was taken after Hurricane Dennis in 2005. The undeveloped portion of the coastal barrier in the distance is within John H. Chafee Coastal Barrier Resources System Unit FL-97.

Executive Summary

OVERVIEW OF THE COASTAL BARRIER RESOURCES SYSTEM

Some of our Nation's most beautiful beaches, most valuable real estate, and most popular recreational areas are located on coastal barriers. Coastal barriers are elongated, narrow landforms located at the interface of land and sea. Coastal barriers buffer the lagoons, wetlands, and salt marshes behind them that in turn support commercial and recreational fisheries and protect people and property on the mainland from the full impact of hurricanes and other severe storms. The location and dynamic nature of coastal barriers make building on them a risky proposition. Development of these areas not only puts property owners at risk of losing their homes and lives, but also disrupts the natural movement of the barriers, harming fish and wildlife habitat, and often increasing natural erosion processes. Despite their instability and the risks associated with building on narrow spits of sand, the aesthetic and recreational lures of coastal barriers have enticed people to develop these areas. In many cases, this development is encouraged by the availability of various types of Federal financial assistance, including Federal flood insurance.

With the passage of the Coastal Barrier Resources Act (CBRA) in 1982, Congress recognized that certain actions and programs of the Federal Government have historically subsidized and encouraged development on coastal barriers, resulting in the loss of natural resources; threats to human life, health, and property; and the expenditure of millions of tax dollars each year. To remove the Federal incentive to develop these areas, the CBRA designated relatively undeveloped coastal barriers along the Atlantic and Gulf coasts as part of the John H. Chafee Coastal Barrier Resources System (CBRS), and made these "System units" ineligible for most new Federal expenditures and financial assistance. The Coastal Barrier Improvement Act (CBIA) of 1990 reauthorized the CBRA; expanded the CBRS to include undeveloped coastal barriers along the Florida Keys, Great Lakes, Puerto Rico, and U.S. Virgin Islands; and added a new category of coastal barriers to the CBRS called "otherwise protected areas" (OPAs). OPAs are undeveloped coastal barriers that are within the boundaries of an area established under Federal, State, or local law, or held by a qualified organization, primarily for wildlife refuge, sanctuary, recreational, or natural resource conservation purposes.

By removing Federal subsidies, the CBRA has been instrumental in ensuring that the Federal Government does not encourage the development of these high-risk and biologically important coastal barrier habitats. For the 3.1 million acres currently included in the CBRS, the CBRA has fulfilled its purpose by removing an incentive to develop without prohibiting development. Development can still occur provided that private developers or other non-Federal parties bear the full cost. According to a 2002 U.S. Fish and Wildlife Service (Service) economic report, the CBRA will save American taxpayers approximately $1.3 billion in Federal dollars between 1982 and 2010.

NEED FOR MAP MODERNIZATION

CBRA references a series of maps that depict the specific boundaries of individual System units and OPAs; these maps are controlling and dictate which lands are affected by the CBRA. The maps are maintained by the Department of the Interior (Department) through the Service. Aside from three minor exceptions, only Congress has the authority to add or delete land from the CBRS and create new units. These exceptions include: (1) voluntary additions to the CBRS by property owners; (2) additions of excess Federal property to the CBRS; and (3) the CBRA 5-year review requirement that solely considers changes that have occurred to System units by natural forces such as erosion and accretion.

The CBRS boundaries are depicted on U.S. Geological Survey (USGS) topographic quadrangle maps, which are, on average, 30 years old. The maps are outdated technologically. Because of the limitations of mapping technology when the CBRS was created, CBRS boundaries do not align precisely with the geomorphic, cultural, or development features they were intended to follow. As a result, some properties and projects intended to be eligible for Federal subsidies are not eligible, and vice-versa.

The CBRA has significant impacts on property owners within the CBRS. Therefore, it is critical that the Service be able to determine the exact location of properties and public works projects (e.g., road construction, channel dredging, and beach nourishment) in relation to CBRS boundaries. Some structures are located mere feet away from CBRS boundaries. In these cases, even a small error on the CBRS map can have significant economic effects on a developer or property owner. The Service's ability to provide efficient customer service to the public and other Federal agencies is significantly impeded by the antiquated maps that currently depict the CBRS. Private property owners seeking Federal flood insurance must sometimes wait several months for a determination of whether or not their property is affected by the CBRA. This is due to the antiquated maps combined with the large volume of requests for property determinations and the critical need for accurate determinations. Similarly, coastal communities and developers must sometimes wait several months for a determination of whether or not a proposed public works project is affected by the CBRA.

Currently, issues arising from

the inaccuracy of existing maps are addressed on a case-by-case basis when the Service is made aware of the potential problems. In such cases, the Service applies standard review criteria to assess a potential mapping error. If a revision to the map is warranted, Congress works with the Service and interested stakeholders to enact a comprehensively revised map created with modern digital technology. Over the past few years, the number of "technical correction" requests has increased. This trend is likely to continue as a result of increasing development and redevelopment along the coasts and the effects of the 2005 hurricane season on the availability and cost of flood insurance. Addressing these individual technical correction requests is time and resource intensive and further decreases overall program efficiency.

One way to address these challenges is by moving away from the reactive technical correction process to address individual problems, and toward a proactive process of comprehensively modernizing the entire set of CBRS maps using digital technology. State and local governments have begun to take advantage of modern mapping technology with the creation of geographic information systems (GIS). Many of these GIS are available online for public use in the form of mapping websites. Government officials and members of the public can access these websites to make planning decisions, or get information about certain properties. Without digital CBRS boundaries, local governments cannot integrate reliable CBRS information into their GIS to use in their planning decisions or to make it available to the public.

Modernizing the CBRS maps using digital technology will address the inaccuracies of the outdated maps; correct errors that adversely affect private property owners; increase efficiencies and accessibility by allowing the integration of CBRS information into digital planning tools; and conserve natural resources. Most importantly, map modernization will ensure the integrity of the CBRS for the long-term by reviewing the intent of each boundary, applying that intent on more current digital base maps, conducting a public review of the proposed maps, and providing clear explanations for the locations of boundaries in a comprehensive background record for each unit.

AUTHORITY FOR THE DIGITAL MAPPING PILOT PROJECT

Recognizing the limitations and challenges associated with the existing set of CBRS maps, the Coastal Barrier Resources Reauthorization Act (CBRRA) of 2000 directs the Secretary of the Interior (Secretary) to carry out a pilot project that consists of the creation of digital maps for no more than 75 units and no fewer than 50 units of the CBRS, one-third of which shall be OPAs. The CBRRA specifies that not later than three years after the date of enactment, the Secretary shall submit a report that describes the results of the pilot project and the feasibility, data needs, and costs of completing digital maps for the entire CBRS to the Committee on Environment and Public Works of the Senate and the Committee on Natural Resources of the House of Representatives. The CBRRA specifies that the report shall include a description of:

- the cooperative agreements that will be necessary to complete digital mapping of the entire CBRS;
- the extent to which the data necessary to complete digital mapping of the entire CBRS are available;
- the need for additional data to complete digital mapping of the entire CBRS;
- the extent to which the boundary lines on the digital maps differ from the boundary lines on the original maps; and
- the amount of funding necessary to complete digital mapping of the entire CBRS.

DIGITAL DATA STANDARDS, NEEDS, AND AVAILABILITY

As required by the CBRRA of 2000, this report includes a description of the extent to which the data necessary to complete digital mapping of the entire CBRS are available, the need for additional data to complete digital mapping of the entire CBRS, and the cooperative agreements that will be necessary to complete digital mapping of the entire CBRS. In carrying out the pilot project, the Service used several types of data, including digital raster graphics, aerial imagery, geomorphic data (e.g., wetlands and soils information), development data (e.g., property parcel, date of construction, and infrastructure information), and conservation and recreation area boundary data (for OPA mapping). The Service found that most of this data is readily available from Federal, State, local, and private entities, generally at little or no cost to the Service. All primary source data used for CBRS mapping in the pilot project complies with the National Spatial Data Infrastructure (NSDI) and the other standards established by the Federal Geographic Data Committee (FGDC).

Subsequent to the Service's acquisition of data necessary to begin the Digital Mapping Pilot Project, the Council of Environmental Quality's Joint Subcommittee on Ocean Science and Technology established the Interagency Working Group on Ocean and Coastal Mapping (IWG-OCM) to facilitate the coordination and leveraging of mapping resources across the Federal sector and with State and local governments, industry, and non-governmental organization interests. As the Service continues its modernization of CBRS maps, we will coordinate with the IWG-OCM in our data acquisition.

The most significant shortcomings of the existing CBRS maps are the outdated and inaccurate base maps that currently depict the CBRS. The Service determined that recent, orthorectified imagery with a high image resolution is the most suitable base map for the CBRS. If suitable imagery for a certain area is not available within the public domain, or does not meet national standards, new imagery may be acquired through cooperative agreements with public entities or through the

private sector.

DIGITAL MAPPING METHODOLOGY

The Service selected 60 CBRS units for this pilot project, one-third (20) of which are OPA units. The pilot project maps depict a total of 70 CBRS units (encompassing 284,434 acres), including new and reclassified units. The pilot project units represent approximately 10 percent of the entire CBRS and are located in Delaware, North Carolina, South Carolina, Florida, and Louisiana.

The pilot project mapping process included: selection of pilot project units; adjustments to "fit" the digital data to the underlying base map; digitization of the existing CBRS boundaries and establishment of horizontal control; assessment of boundary intent; adjustment of existing boundaries to create proposed boundaries that align with geomorphic, development, or cultural features, and, in limited cases, to add new fastland; and calculation of the acreage and shoreline mileage associated with each unit. In cases where the intent of a CBRS boundary could not be determined, the Service made no proposed boundary adjustments.

The remapping process for each of the pilot project units is documented in background records maintained by the Service and available upon request at the Service's headquarters office.

PILOT PROJECT RESULTS

As required by the CBRRA of 2000, this report includes a description of the extent to which the proposed boundary lines on the pilot project maps differ from the boundary lines on the existing maps. The nature and extent of proposed boundary changes varies widely. The pilot project maps make the following proposed changes to the 45 System units:

- adjustment to reflect geomorphic change (affecting 14 units);
- alignment with geomorphic features (affecting 28 units);
- addition of associated aquatic habitat (affecting 23 units);
- adjustment to map channel boundaries consistently (affecting 14 units);
- alignment with development features (affecting 31 units);
- alignment with cultural features (affecting 7 units);
- addition of fastland not currently within the CBRS (affecting 8 units);
- reclassification from System unit to OPA (affecting 7 units); and
- no adjustment (affecting 3 units).

The pilot project maps make the following proposed changes to the 25 OPA units:

- alignment with cultural features (affecting 19 units);
- addition of conservation or recreation area (affecting 9 units);
- removal of private land (affecting 9 units);
- reclassification from OPA to System unit (affecting 10 units);
- addition of new OPAs (2 proposed new units); and
- adjustment to map channel boundaries consistently (affecting 5 units).

The proposed pilot project boundary changes are described in Chapter 5 and are depicted in Appendix D, which includes pilot project unit summaries and maps. Below is a summary table of the proposed pilot project acreage changes. If enacted, the pilot project maps will result in a total net addition of approximately 23,840 acres to the CBRS (mainly associated aquatic habitat). The 363 acres of fastland proposed for removal from the CBRS are generally private lands that contain approximately 300 structures and will be made eligible for Federal flood insurance and other Federal subsidies if Congress were to enact the proposed pilot project maps. Of the total 1,625 acres of fastland proposed for addition to the CBRS, 618 acres are proposed for System unit status and are generally undeveloped private lands that will be made ineligible for Federal flood insurance and other Federal subsidies. The Service is not aware of any existing private structures located within the areas proposed for addition to the CBRS.

Summary of Proposed Pilot Project Acreage Changes

	Fastland acres	*Associated Aquatic Habitat acres*	*Total acres*
Addition to the CBRS	1,624.7	23,366.0	24,990.7
Deletion from the CBRS	362.8	787.5	1,150.3
Net Change	1,261.9	22,578.5	23,840.4

CONCLUSIONS, COSTS, AND NEXT STEPS

The effectiveness of the CBRA and the efficiency of the CBRA program are limited by the outdated maps used to administer the CBRS. An investment in CBRS map modernization over the next several years is critical to achieving numerous program goals, including: addressing the inaccuracies of the outdated maps; correcting errors that adversely affect private property owners; increasing efficiencies and accessibility by allowing the integration of CBRS information into digital planning

tools; conserving natural resources; and maintaining the integrity of the CBRS for the long-term.

As required by the CBRRA of 2000, this report includes a description of the amount of funding necessary to complete digital mapping of the entire CBRS. The Service estimates that it will cost up to $17 million to comprehensively modernize the CBRS with the new generation of digital maps created in the course of the pilot project.

The Administration supports the CBRA and modernization of the CBRS maps using digital technology. CBRS map modernization is consistent with many Administration goals and priorities, including the President's Management Agenda initiative of expanded electronic government and the U.S. Ocean Action Plan initiative to coordinate ocean and coastal mapping activities. Moving forward with CBRS map modernization, the Service will seek to continue coordination with our Federal partners in order to reduce duplicative efforts.

The Service has identified three general steps necessary to finalize the pilot project maps and complete digital mapping for the remainder of the CBRS. The following three steps are consistent with the directives contained in the Coastal Barrier Resources Reauthorization Act of 2005:

(1) Public review of the pilot project maps whereby the Governors of the States, other government officials, and members of the public have the opportunity to review and provide comments to the Service on the proposed changes depicted on the maps in Appendix D of this report.

(2) Submit final recommended pilot project maps to Congress for its adoption after the Service's consideration of public comments.

(3) Create digital maps for the remainder of the CBRS using the lessons learned during the course of the pilot project and applying the protocols described in this report. This will entail replacing the entire set of existing CBRS maps with much more accurate and precise digital maps that are drafted by the Service, reviewed by the public, and enacted by Congress.

CHAPTER 1: OVERVIEW OF THE COASTAL BARRIER RESOURCES SYSTEM

Congress recognized the value of coastal barriers to fish, wildlife, and other natural resources, and the risks associated with their development, when it enacted the Coastal Barrier Resources Act (CBRA) and created the John H. Chafee Coastal Barrier Resources System (CBRS) in 1982. The CBRS was subsequently modified by the Coastal Barrier Improvement Act (CBIA) of 1990 and numerous "technical correction" laws. This chapter describes the geomorphology of coastal barriers, the value of coastal barriers, the risks associated with developing coastal barriers, the role of the U.S. Fish and Wildlife Service (Service) in administering the CBRA, and the legislation that created and modified the CBRS.

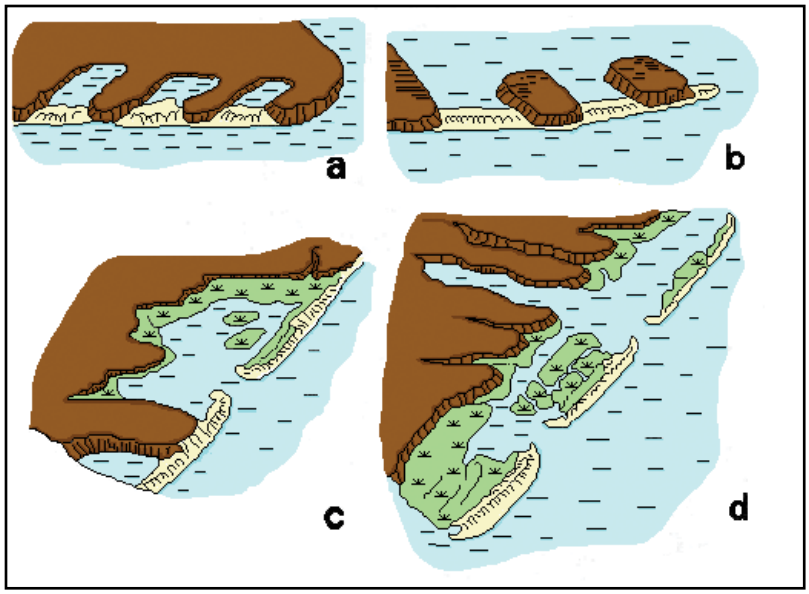


Figure 1. Types of coastal barriers. Bay barriers (a), tombolos (b), barrier spits (c), and barrier islands (d).

Geomorphology of Coastal Barriers

In general, the term "coastal barrier" describes a class of low lying coastal landforms that are long and narrow and parallel to the coast. They are surrounded, or nearly so, by open water, wetlands, or other aquatic habitat which separate them from the mainland. Often, substantial portions are sufficiently above normal high tides that dunes and terrestrial vegetation are prevalent. Figure 1 illustrates the four general categories of coastal barriers, including bay barriers, tombolos, barrier spits, and barrier islands. Bay barriers have grown entirely across the mouth of a bay. Tombolos are formed when sand accumulates between the mainland and an island. Barrier spits extend into open water. Barrier islands are detached from the mainland. Coastal barriers can, and often do, change position in response to storms, sea level rise, currents, and numerous other factors. Coastal barriers are distributed along the Atlantic, Gulf, and Pacific coasts, as well as in Alaska, Hawaii, the Great Lakes, and the U.S. territories. Currently, only certain coastal barriers located along the Atlantic, Gulf, and Great Lakes coasts, Puerto Rico, and the U.S. Virgin Islands are within the CBRS.

Value of Coastal Barriers

Coastal barriers and the bays, salt marshes, and wetlands behind them, sustain a great diversity of plants and animals. Many Service trust species, such as migratory birds and interjurisdictional fish species, as well as threatened and endangered species (e.g., piping plover, and several species of beach mice and sea turtles) rely on coastal barrier habitat for survival.

Marshes, tidal channels, shallow lakes, and other wetland areas are vital fish and wildlife habitat because of their role as nursery grounds for many commercial and sport fish species. The commercial and sport fishing industry generates $116.1 billion per year, $31.1 billion of which are from commercial and sport saltwater fishing alone.[1] The sport fishing industry relies on the sustained quality of wetland habitat, and thus relies on the preservation of the coastal barriers that protect the habitat and support fish species.

Figure 2. The habitats created and protected by coastal barriers are vital to recreational industries. (Credit USFWS)

Migratory birds depend on the food sources and habitat created and protected by coastal barriers as feeding and resting stops on their marathon flights from Alaska, Canada and the northern U.S. to Mexico and South America. Without the opportunity to feed and rest, they would be unable to complete their journey to wintering sites.

Figure 3. The endangered piping plover, *Charadrius melodus*, walking on a New Jersey beach. (Credit USFWS)

Endangered manatees take shelter in and feed on the grasses that grow in the calm waters protected by coastal barriers. Marine turtles return to coastal barriers to build their nests and deposit their eggs, after spending decades in the open water. The six marine turtle species under U.S. jurisdiction are currently listed as endangered species, and their recovery is dependent upon the survival of their nests.

Figure 4. A leatherback sea turtle, *Dermochelys coriacea*, nesting on a coastal barrier in Canaveral National Seashore, Florida. (Credit National Park Service)

For most of these species, there is no substitute for coastal barrier habitat. The loss and degradation of coastal barriers removes the staging grounds of vital parts of the life cycle. Increased pressure has been placed on many species populations over the past few decades as they struggle to survive with a shrinking habitat caused, in part, by the rapid development of our coasts.

The benefits provided by coastal barriers extend beyond fish and wildlife. Coastal barriers can change drastically as a result of a storm. Mainland communities, and the substantial economic investments they represent, are spared the full damage of hurricane winds and storm surge because coastal barriers and wetlands absorb the brunt of these destructive forces. Scientists estimate that every 2.7 miles of wetlands absorbs one foot of storm surge.[2]

Figure 5. Public recreation on Sanibel Island, Florida. (Credit USFWS)

Coastal barriers contain some of the Nation's most beautiful beaches and popular tourist destinations. More than 180 million Americans travel to our coasts each year to take advantage of the many recreational activities offered. These visitors to coastal States generate over $560 billion in tourism revenue annually.[3]

Risks Associated with Developing Coastal Barriers

Coastal barriers are continually shifting and moving in response to the forces of wind, wave, and tidal action. A severe storm repeats the annual cycle of changing width and slope of a beach within a few hours. Figure 6 illustrates the extreme geomorphic change resulting from Hurricane Charley which breached North Captiva Island, Florida, in 2004. The principal threat to beaches and coastal barriers, however, is not intense storms, but a steady reduction in the sand supply caused by dams on tributary streams and the diversion or interruption of littoral transport, (the movement of sedimentary material along the shoreline by waves and currents) along the seaward edge of beaches and barriers by bulkheads, groins, and jetties. In some areas, offshore mining of beach sand has contributed to the problem. This type of physical alteration compromises the coastal barrier's natural ability to "go with the flow" and adjust to changes.

Most coastal barriers are made of unconsolidated sediments (e.g., sand and gravel). This geological composition, in addition to their very dynamic nature, makes them highly unstable areas on which to build. Despite their instability and high risk, the aesthetic and recreational attributes of coastal barriers continue to drive the development of coastal barriers along our Nation's coasts.

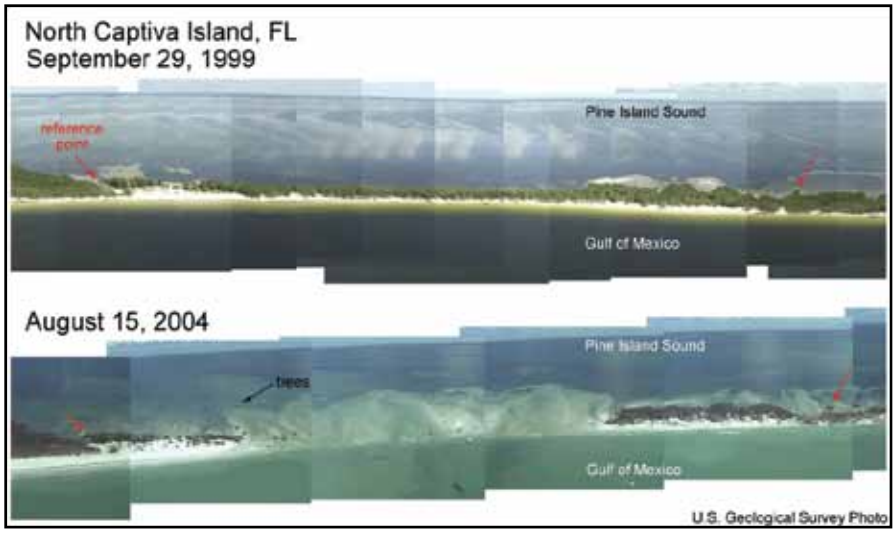


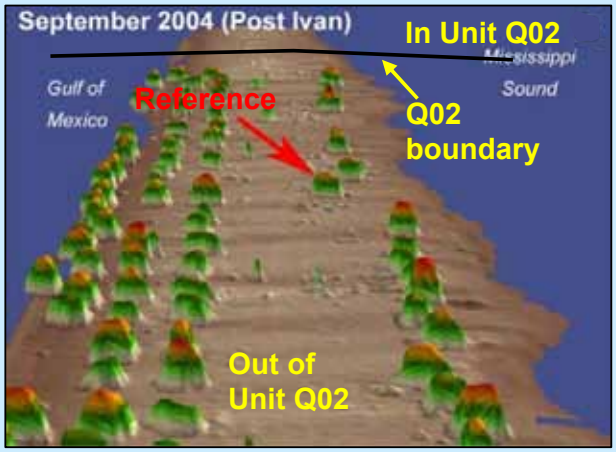
Figure 6. North Captiva Island, Florida, before and after Hurricane Charley in 2004. CBRS Units P19 and P19P are located on North Captiva Island. (Credit USGS)

Box 1. Impact of Hurricanes on Dauphin Island, Alabama.

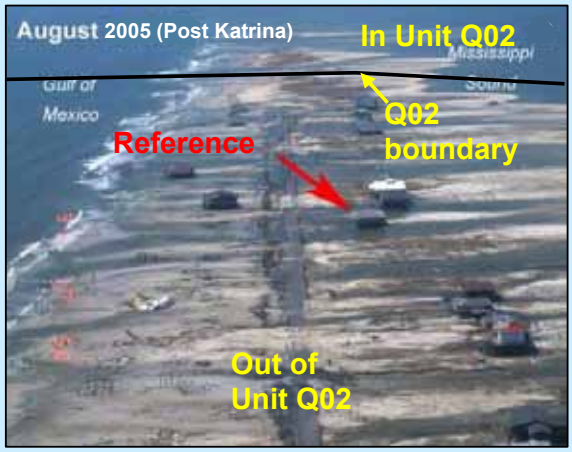
Dauphin Island, Alabama, pre-Hurricane Katrina *(Credit NASA)*

Dauphin Island, Alabama, post-Hurricane Katrina *(Credit NASA)*

Pre- and post-Hurricane Katrina images of Dauphin Island, Alabama, illustrate an area that has been hit hard by hurricanes Frederick (1979); Danny (1997); George (1998); Ivan (2004); and Dennis, Katrina and Wilma (2005); and has repeatedly redeveloped at the expense of the federal taxpayer. Aerial views of Dauphin Island (left) before and after Hurricane Katrina demonstrate the vulnerability of coastal barriers. The images below are enlargements of the detail area (middle left). The structures remaining after Hurricane Ivan in 2004, some partially in the surf of the Gulf of Mexico (bottom left), were almost completely destroyed by Hurricane Katrina in 2005 (bottom right). Note that construction abruptly ends at the Unit Q02 boundary.



Dauphin Island, Alabama, September 2004 (*Credit USGS*)



Dauphin Island, Alabama, August 2005 (*Credit USGS*)

Fish and Wildlife Service Role in Administering the Coastal Barrier Resources Act

The Department of the Interior (Department), through the Service, is responsible for administering the CBRA by: maintaining the official maps of the CBRS; conducting a review of the CBRS every 5 years to make minor and technical modifications to the boundaries to reflect changes that have occurred in the shape or location of any System units as a result of natural forces (erosion and accretion); consulting with Federal agencies that propose spending funds within the CBRS (CBRA consistency consultations); determining whether properties are located in or out of the CBRS (CBRA property determinations); and making recommendations to Congress regarding the addition of areas to the CBRS and determining whether a coastal barrier was undeveloped at the time of its inclusion in the CBRS.

Legislation that Created and Modified the Coastal Barrier Resources System

Below is a summary of the legislation that created and modified the CBRS.

Omnibus Budget Reconciliation Act of 1981

Prior to the enactment of the CBRA in 1982, Congress recognized that certain Federal programs have encouraged development of coastal barriers, and that the cost of development, including the threats to humans and natural resources, were more significant than previously understood. The Omnibus Budget Reconciliation Act (OBRA) of 1981 (P.L. 97-35) amended the National Flood Insurance Act of 1968 to prohibit the issuance of Federal flood insurance coverage for new construction or substantial improvements of existing structures on undeveloped coastal barriers as defined by the OBRA and designated by the Secretary of the Interior (Secretary). In response to this directive, the Secretary established a Coastal Barrier Task Force comprised of representatives from various agencies in the Department. This task force developed proposed delineations of undeveloped coastal barriers, which went through a public review, pursuant to a Notice of Proposed Rulemaking published in the Federal Register in 1981. Although the enactment of the OBRA was an important first step in the protection of undeveloped coastal barriers, it only prohibited the issuance of Federal flood insurance coverage and did not limit other types of Federal assistance in vulnerable coastal areas. In addition, the maps designated by the Secretary were not enacted by law and could be subject to lawsuits for years, blocking both development and protection of coastal barriers.

Coastal Barrier Resources Act of 1982

With the passage of the CBRA (P.L. 97-348) in 1982, Congress recognized that certain actions and programs of the Federal Government have historically subsidized and encouraged development on coastal barriers and have resulted in the loss of valuable natural resources; threats to human life, health, and property; and the expenditure of millions of tax dollars to build structures and infrastructure and then rebuild them after damaging storms. The CBRA designated various undeveloped coastal barriers along the Atlantic and Gulf of Mexico coasts for inclusion in the CBRS.

The CBRA introduced one type of CBRS unit, subsequently referred to as the "System unit." The CBRA defines a System unit as "any undeveloped coastal barrier, or combination of closely-related undeveloped coastal barriers, included within the John H. Chafee Coastal Barrier Resources System." System units are generally comprised of private lands that were not held for conservation or recreation at the time of their designation within the CBRS. The boundaries of these units are generally intended to follow geomorphic, development, or cultural features.

System units are delineated on maps according to certain criteria and mapping protocols, which are specified in the OBRA of 1981, CBRA of 1982, CBIA of 1990, Coastal Barrier Resources Reauthorization Act (CBRRA) of 2000, the legislative histories of those laws, Department reports to Congress and other policy documents, and several notices published in the Federal Register since 1981. Areas designated within the CBRS as System units are ineligible for most Federal financial assistance that might support development, including new infrastructure projects and Federal flood insurance coverage through the National Flood Insurance Program (NFIP).[4]

The CBRA designated 186 System units encompassing approximately 452,834 acres and 666 shoreline miles. Prior to the CBRA's passage, the Department created draft maps for public and Congressional review. The 1982 units were delineated on a set of 177 maps comprised of photocopied enlargements of the U.S. Geological Survey (USGS) map series entitled "topographic quadrangles" (quadrangles) at a scale of 1:12,000 which equates to one inch of map distance equaling 1000 feet on-the-ground (see Figure 7). System unit boundaries were hand-drawn directly on the maps.

Great Lakes Coastal Barrier Act of 1988

The Great Lakes Coastal Barrier Act of 1988 (P.L. 100-007) directed the Secretary to recommend to Congress and prepare maps identifying the boundaries of undeveloped coastal barriers along the shores of the Great Lakes that the Secretary considered appropriate for inclusion within the CBRS. Under this statute, the Secretary was not to recommend any areas for inclusion that were publicly owned and protected by Federal, State, or local law, or held by a privately owned organization primarily for wildlife refuge, sanctuary, recreational, or natural resource conservation purposes.

The maps prepared by the Department went through a public review and were presented to Congress for its consideration. Congress enacted these maps, along with others, in the CBIA of 1990.

Coastal Barrier Improvement Act of 1990

The CBIA of 1990 (P.L. 101-591) reauthorized the CBRA; made additions, deletions, and modifications to many existing System units; adopted new System units along the Great Lakes, Atlantic, and Gulf coasts; expanded the definition of "coastal barriers," effectively including secondary barriers and undeveloped coastal barriers in the Florida Keys; and added a second type of coastal barriers to the CBRS known as otherwise protected areas (OPAs).

The CBIA defines an OPA as "an undeveloped coastal barrier within the boundaries of an area established under Federal, State, or local law, or held by a qualified organization, primarily for wildlife refuge, sanctuary, recreational, or natural resource conservation purposes." Unlike System unit boundaries, which are generally intended to follow geomorphic and development features, OPA boundaries are generally intended to coincide with the boundaries of conservation or recreation areas such as State parks and national wildlife refuges. The only Federal funding prohibition within OPAs is Federal flood insurance.[5]

The Service believes that Congress created OPAs for two primary reasons: (1) to ensure that the land will not be eligible for Federal flood insurance if it is ever sold or otherwise made available for development; and (2) to ensure that the restrictions on Federal flood insurance apply to privately owned inholdings within the protected area.

The Service considers inholdings to be developed or undeveloped private tracts of land which are not held for conservation or recreation purposes by their owners, and are contained within the exterior boundaries of the areas held primarily for wildlife refuge, sanctuary, recreation, or natural resource conservation purposes.

Below is a summary history of OPAs.

- 1982: The Department submitted a report to Congress that recommended that otherwise protected coastal barriers be included in the CBRS to ensure that owners of property within the boundaries of these areas not be granted Federal flood insurance, and that prohibitions on Federal flood insurance would be in place should the land ever become available for future development.[6]

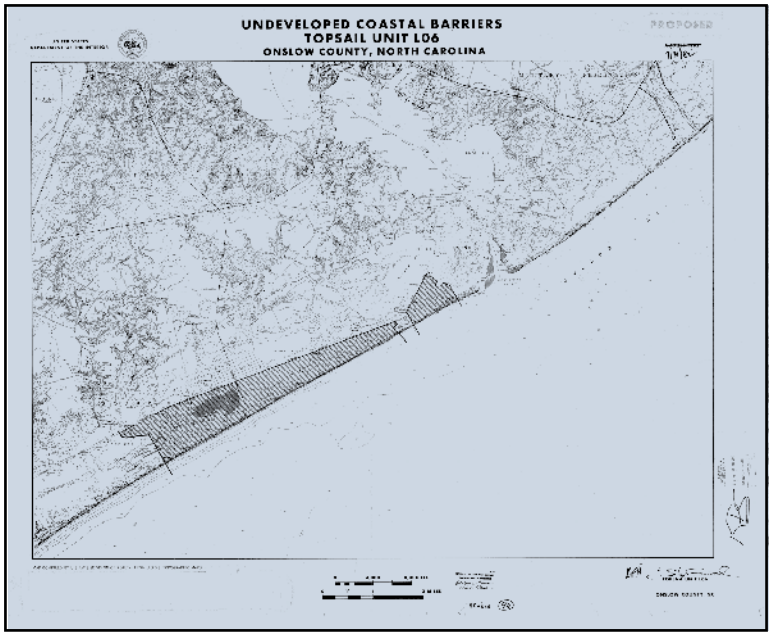


Figure 7. Unit L06 map enacted by the CBRA in 1982.

- 1982: Congress enacted the CBRA, which excluded from the definition of an "undeveloped coastal barrier" areas established under Federal, State, or local law, or held by a qualified organization, primarily for wildlife refuge, sanctuary, recreational, or natural resource conservation purposes.
- 1988: The Department submitted a report to Congress that recommended changes to existing System units and also identified "otherwise protected" areas on the draft maps for informational purposes. The Department did not recommend adding these areas to the CBRS unless they were made available for development. Further, the Department recommended that all privately owned property that is within, but is not a part of, an otherwise protected area (i.e., inholdings) be included in the CBRS.[7]
- 1990: Many of the "otherwise protected" areas identified and delineated in the Department's 1988 report to Congress were designated by the CBIA as OPAs.

The CBIA enlarged the CBRS to include a total of 857 units (585 System units and 272 OPAs) encompassing approximately 3.1 million acres and 2,470 shoreline miles. The 1990 units were delineated on a set of 632 maps comprised of photocopied USGS quadrangles at a scale of 1 inch of map distance equaling 2,000 feet on-the-ground. CBRS boundaries were again hand drawn directly on the maps. The maps enacted by the CBIA in 1990 have, in most cases, not been updated and are still the controlling CBRS maps today (see Figure 8).

Coastal Barrier Resources Reauthorization Act of 2000

The CBRRA of 2000 (P.L. 106-514) reauthorized the CBRA; codified the development criteria to be used by the Secretary when making recommendations to Congress[8]; amended the CBRA to allow for voluntary additions to the CBRS; directed the Secretary to complete a Digital Mapping Pilot Project; and directed the Secretary to complete an economic assessment of the CBRS.

Codification of the development criteria and the directive to undertake a Digital Mapping Pilot Project both attempted to address the problem of increased requests for modifications to CBRS maps. A clearly defined set of criteria used to make recommendations to Congress has been helpful not only to the Service as we react to technical correction requests, but also to the public in understanding which types of situations may merit a technical correction to a CBRS map.

Coastal Barrier Resources Reauthorization Act of 2005

The Coastal Barrier Resources Reauthorization Act (CBRRA) of 2005 (P.L. 109-226) reauthorizes the CBRA through 2010, and directs the Secretary to: (1) finalize the Digital Mapping Pilot Project by providing for public review and presenting Congress with the final recommended digital maps, and (2) create final recommended digital maps for the remainder of the CBRS.

If the goals of the CBRRA of 2005 are achieved, at some point in the future Congress will adopt a new set of maps for the entire CBRS. This will be a major milestone in the history of the CBRA, similar to the passage of the original law in 1982 and the CBIA in 1990.

Technical Correction Legislation

Aside from three minor exceptions, only Congress, through new legislation, can modify the boundaries of the CBRS. These exceptions are: (1) voluntary additions to the CBRS by the owners of undeveloped coastal barrier property[9]; (2) additions of excess property under the Federal Property and Administrative Services Act, if such property is determined to constitute undeveloped coastal barrier by the Secretary[10]; and (3) a 5-year review conducted by the Secretary to make minor and technical modifications to the boundaries of the CBRS to account for changes to coastal barriers due to natural forces. Neither the Service, nor the Department, is authorized to make any other boundary changes administratively. When technical mapping errors are found, the Service has supported legislation to modify boundaries accordingly. Since 1982, Congress has enacted technical correction legislation to revise the boundaries of 42 CBRS units. Appendix C contains a summary of all changes to the CBRS, including technical correction changes.

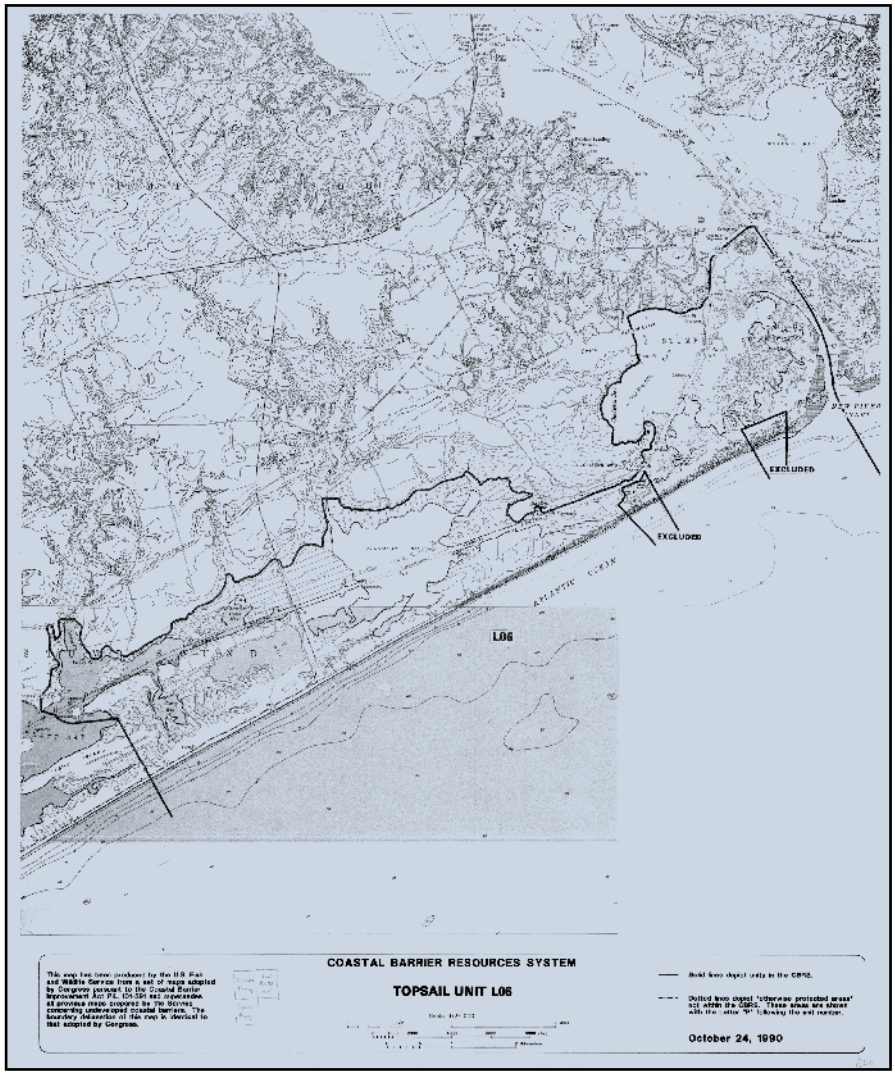


Figure 8. Unit L06 map enacted by the CBIA in 1990.

[1] American Sportfishing Association, Sportfishing in America: Values of Our Traditional Pastime, http://www.asafishing.org/asa/images/statistics/participation/sportfishing_america/fish_eco_impact.pdf

[2] U.S. Army Corps of Engineers. Overland surge elevations coastal Louisiana: Morgan City and vicinity, File No. H-2-22758, Plate A-4 1963.

[3] National Oceanic and Atmospheric Administration Ocean and Coastal Resource Management. Coastal Issues: Public Access. http://coastalmanagement.noaa.gov/public_access.html. 2006.

[4] 16 U.S.C. 3504 describes the limitations on Federal expenditures affecting the CBRS. 16 U.S.C. 3505 describes the exceptions to these limitations. CBRA amended the National Flood Insurance Act of 1968 (42 U.S.C. 4028) to read "No new flood insurance coverage may be provided under this title on or after October 1, 1983, for any new construction or substantial improvements of structures located on any coastal barrier within the Coastal Barrier Resources System established by section 4 of the Coastal Barrier Resources Act. A Federally insured financial institution may make loans secured by structures which are not eligible for flood insurance by reason of this section."

[5] P.L. 101-591 Sec. 9. amends the National Flood Insurance Act of 1968 (U.S.C. 4028), Section 1321 to add the following new subsection: "(b) No new flood insurance coverage may be provided under this title after the expiration of the 1-year period beginning on the date of the enactment of the Coastal Barrier Improvement Act of 1990 for any new construction or substantial improvements of structures located in any area identified and depicted on the maps referred to in section 4(a) of the Coastal Barrier Resources Act as an area that is (1) not within the Coastal Barrier Resources System and (2) is in an otherwise protected area. Not withstanding the preceding sentence, new flood insurance coverage may be provided for structures in such protected areas that are used in a manner consistent with the purpose for which the area is protected."

[6] U.S. Department of the Interior. 1982. Undeveloped Coastal Barriers: Report to Congress. U.S. Department of Interior, Washington, D.C. states: "The sale of Federal flood insurance for development within governmental areas set aside for conservation purposes seems particularly inappropriate. Not only is this inconsistent with the protection of the conservation area, but it is also inconsistent with the treatment of similar lands outside of the boundaries of the "protected" governmental unit…Therefore, we recommend an amendment to the Reconciliation Act to provide that all undeveloped coastal barriers be subject to designation, regardless of their protected status." (p 36)

U.S. Department of the Interior, Coastal Barriers Study Group. 1988. Report to Congress: Coastal Barrier Resources System with recommendations as required by Section 10 of the Public Law 97-348, the Coastal Barrier Resources Act of 1982. Volume 1 in Report to Congress: Coastal Barrier Resources System. U.S. Department of the Interior, Washington, D.C. 265 pp. states: "The only recommendation in the Secretary of the Interior's August 1982 Report to Congress as required by OBRA was that the statutory definition of undeveloped coastal barriers be modified so that such "otherwise protected" areas could be included under the Act. This recommendation reflected concern that privately owned land within the authorized boundaries of these areas (inholdings) could be developed and granted Federal flood insurance and that some protected areas could become available for future development." (p 103)

[7] U.S. Department of the Interior, 1988 Recommendations, op. cit., p 117: "The Department recommends that all privately owned property that is within but is not a part of an otherwise protected area (i.e. inholdings) on an undeveloped coastal barrier be included in the CBRS. Where accurate maps of inholdings were available (e.g. for the National Seashores and Wildlife Refuges), inholdings are included on the CBRS maps (see appropriate State volumes). Where such information was lacking, inholdings on undeveloped otherwise protected coastal barriers are included by reference."

[8] P.L. 106-514 Sec. 2 states "In making any recommendation to the Congress regarding the addition of any area to the System or in determining whether, at the time of inclusion of a System unit within the System, a coastal barrier is undeveloped, the Secretary shall consider whether within the area –

(A) the density of development is less than 1 structure per 5 acres of land above mean high tide; and

(B) there is existing infrastructure consisting of –

(i) a road, with a reinforced road bed, to each lot or building site in the area;
(ii) a wastewater disposal system sufficient to serve each lot or building site in the area;
(iii) electric service for each lot or building site in the area; and
(iv) a fresh water supply for each lot or building site in the area."

50 FR 8700 states "A man-made structure is defined as a walled and roofed building constructed in conformance with Federal, State, or local legal requirements, with a projected ground area exceeding two hundred square feet." This criterion is codified in P.L. 106-514 Sec. 2, where a structure is defined as "a walled and roofed building, other than a gas or liquid storage tank, which is principally above ground and affixed to a permanent foundation; and covers an area of at least 200 square feet."

[9] P.L. 106-514 Sec. 3

[10] P.L. 101-591 Sec. 4(d)

CHAPTER 2: NEED FOR MAP MODERNIZATION

Over the past two decades, the CBRA has helped to keep people out of harm's way, removed key incentives to develop important coastal habitat, and saved taxpayers' money. In this sense, the law has been successful, but the effectiveness of the law is limited by the outdated maps used to administer the CBRS. CBRA references a series of maps that depict the specific boundaries of individual System units and OPAs; these maps are controlling and dictate which lands are affected by the CBRA. Modernizing the CBRS maps using digital technology will greatly improve the efficiency and effectiveness of CBRA implementation, positioning the Service to more fully accomplish the CBRA's goals.

The existing set of CBRS maps was created in 1990 using antiquated manual cartographic technologies. The maps are difficult to use and incompatible with current geographic information systems (GIS) widely in use by Federal, State, local, and non-governmental entities. This chapter describes the significant challenges associated with the existing maps and the benefits associated with modernizing the maps using digital technology.

Challenges Associated with Existing Maps

There are significant challenges associated with the existing CBRS maps including: (1) a resource and time intensive process to determine boundary locations; (2) discrepancies between where the boundary was intended to fall on-the-ground and where the boundary is depicted on the map; and (3) inability to integrate CBRS boundaries into GIS for planning, decision-making, and information sharing purposes. Because the CBRA can have a significant financial impact on property owners and project proponents, it is essential that the Service be able to locate CBRS boundaries relative to on-the-ground properties and projects with a high degree of accuracy. Using the existing set of CBRS maps to accomplish this goal takes significant time and resources leading to inefficiencies in determining whether or not certain private properties and proposed projects are located within the CBRS and are therefore ineligible for Federal subsidies. Another challenge caused by the existing maps is that CBRS boundary lines, as they fall on-the-ground, frequently do not reflect the original boundary intent. Fluctuations from this intent of only a few centimeters on the CBRS map can have unintended consequences to entire properties on-the-ground. An additional challenge is that users of the existing maps are unable to easily integrate CBRS boundaries into GIS for proactive planning, decision making, and information sharing purposes.

The challenges associated with the existing CBRS maps are attributed to: (1) the age and accuracy of the base maps on which the CBRS boundaries are depicted; (2) the now antiquated cartographic methods used to create the CBRS maps; and (3) the inadequate horizontal control associated with the existing maps.

Age and Accuracy of Base Maps

In the context of CBRS mapping, accuracy means the CBRS boundary is shown on the map exactly where it was intended to fall on-the-ground. For example, if a CBRS boundary was intended to mirror a park boundary or a specific geomorphic or development feature, the boundary is not accurate if it does not exactly follow that intended feature. The CBRS boundaries were delineated on the USGS quadrangles that were available when the CBRA was enacted in 1982, and then again when the CBIA was enacted in 1990. At the time these statutes were enacted, the USGS quadrangles were considered the best and most widely available mapping medium. The quadrangles, however, were not updated on a regular cycle, often with decades passing between map revisions. For the pilot project units, the average age of the quadrangle on which the CBRS boundaries are delineated is 30 years. The irregular and often infrequent revisions to the USGS quadrangles has been problematic for the CBRS because the CBRS boundaries are intended to follow certain geomorphic, development, or cultural features and these features are not always current on the base maps on which the CBRS boundaries are delineated. Coastal barriers are inherently dynamic and subject to more geomorphic change than inland areas due to their exposure to constant wave, wind, and tidal energies and because they are generally composed of unconsolidated sediments. Dynamic geomorphic features such as shorelines and wetlands, development features such as roads and structures, and cultural features such as park boundaries shown on the quadrangles were often outdated at the time the quadrangle was used to create the CBRS map. As a result, CBRS boundaries that are intended to follow these features were often placed incorrectly. In several cases this problem has had an adverse impact on property owners whose properties were inadvertently included in the CBRS.

USGS uses aerial photos to create the quadrangles and they update the quadrangles on an intermittent basis using more recent aerial imagery as it becomes available. These quadrangle updates are mainly focused on revising features identifiable on aerial imagery such as transportation networks, hydrography, vegetation, and structures. Because cultural boundaries do not appear on aerial imagery, these features are normally not updated during the quadrangle revision process. Cultural features inherit their spatial accuracy on the quadrangles from secondary sources such as the National Park Service and are often extracted from hard-copy maps that are neither controlled nor validated before they are added to the

quadrangles. Errors that existed on these secondary sources are then promulgated to the quadrangles. As a result, many cultural features shown on quadrangles that were used for the CBRS mapping are inaccurate and/or outdated by varying degrees. County parks and private conservation areas are normally not shown at all on the quadrangles which makes the OPA boundaries that were intended to mirror those features prone to an even higher degree of error (See Figure 9).

An additional challenge associated with the existing set of CBRS maps is that they are subject to instability caused by shrinkage and stretching over time due to variations in humidity. This affects the accuracy of all information on the maps, which in turn affects those end-users who wish to determine the spatial position of the CBRS boundaries relative to existing and proposed development using GIS.

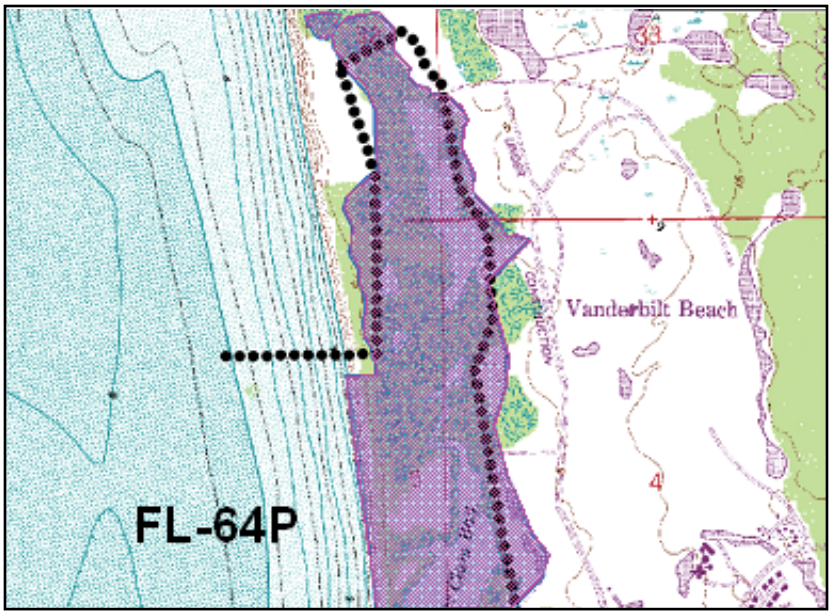


Figure 9. A USGS quadrangle dated 1987 was used as the base map for Unit FL-64P (black dots). The actual boundary of the Clam Pass Conservation Area is shaded in purple.

Antiquated Cartographic Methods

The cartographic methods used to create the existing set of CBRS maps contribute significantly to the lack of boundary accuracy and the inability to use CBRS maps today in GIS or any digital mapping environment. CBRS boundaries were placed by hand on the USGS base maps in 1982 and 1990. These hand-drawn ink-on-paper CBRS boundary lines have a thickness that translates to over 100 feet on the Earth's surface.

OPA boundaries were placed on the map by affixing cartographic drafting tape embossed with black dots directly onto quadrangles. The limited accuary of manually placing the drafting tape on the quadrangle contributed to the inaccuracy of OPA boundaries.

Inadequate Horizontal Control

In today's data-sharing environment, the utility of maps created using antiquated cartographic techniques is significantly limited because of inadequate horizontal control. Horizontal control, as it relates to mapping, means that all points on the map have a precise geographic coordinate value, or point on the Earth's surface. The most common method of ensuring horizontal control is to reference a geographic coordinate system such as the latitude and longitude grid displayed on quadrangles. The grid values on quadrangles are shown as numeric values at the edge of the map sheet, thereby enabling users to know where the quadrangle lies relative to the surface of the Earth. The grid coordinate values, or geocoordinates, enable a map user who knows the latitude and longitude values for a specific property parcel to locate the property with a fairly high degree of accuracy on a quadrangle.

The rudimentary process used to create the existing set of CBRS maps often involved splicing together adjacent quadrangles for units that straddled two or more map panels, and then removing the border information containing the geocoordinates. The absense of geocoordinates on the CBRS maps and the introduction of further distortion caused by the attempt to line-up adjacent maps has rendered the maps relatively useless in GIS environments requiring known geocoordinates. This problem is illustrated in Box 2. Note that the grid coordinate values normally displayed at the outer edge of the map on the right are not evident in the map on the left, thereby making horizontal control of CBRS boundaries on that map virtually impossible.

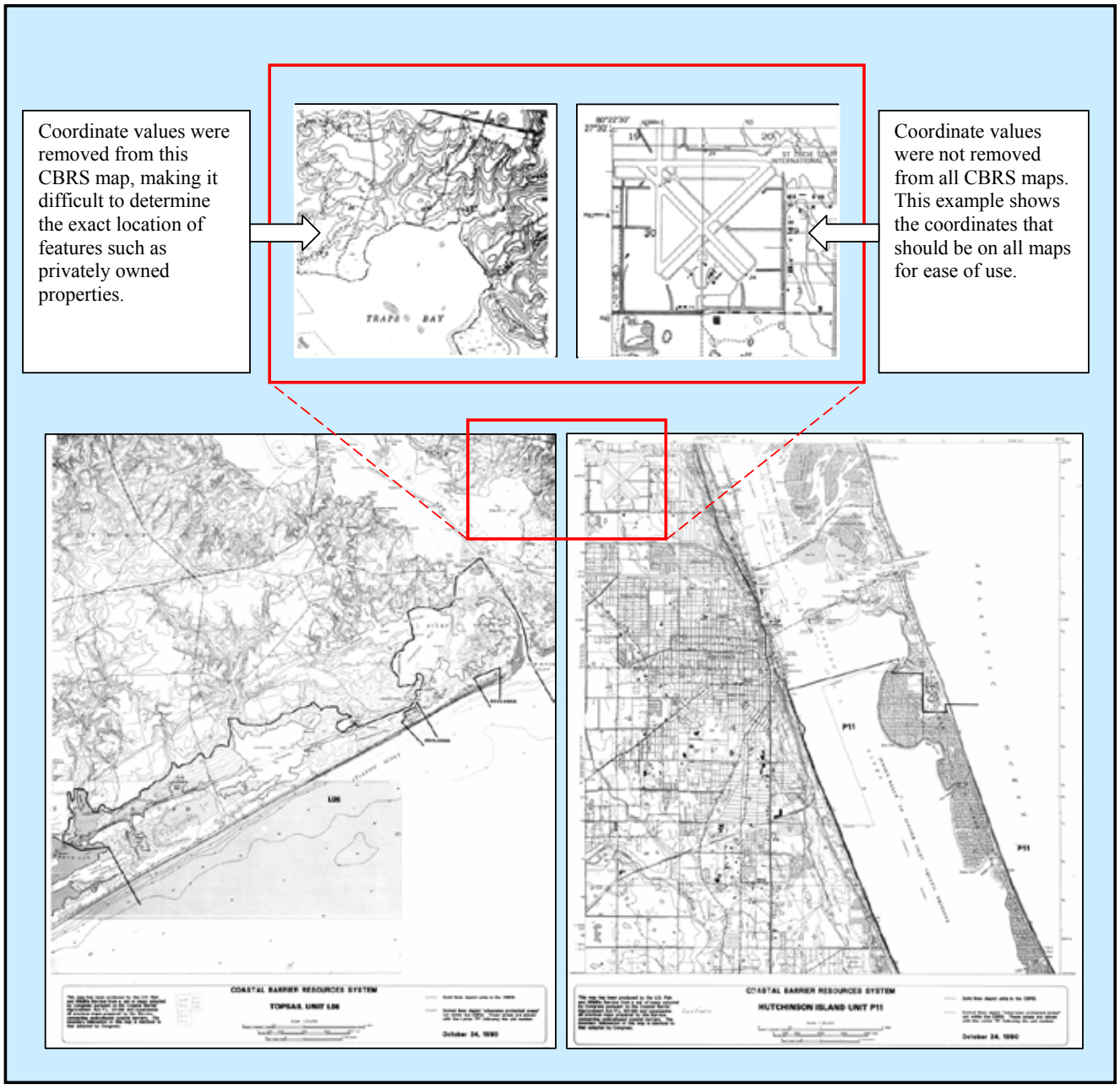
Benefits Associated with Digital Maps

Digital technologies can address existing challenges by moving away from the use of CBRS maps that depict outdated geomorphic, cultural, and development features, and toward a system of digital maps that more accurately depict current features on modern aerial imagery; can be integrated into GIS for planning purposes; and can be shared via the Internet. The benefits associated with comprehensively modernizing the entire CBRS using digital technology include: improving access to CBRS information; increasing efficiencies for project planning; increasing efficiencies for property determinations; facilitating administrative map revisions; integrating CBRS boundaries with the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs); conserving natural resources; addressing errors affecting private properties; and preserving the long-term integrity of the CBRS.

Improve Access to Information

Comprehensive map modernization will enable digital CBRS boundaries to be posted on the Internet and made available for incorporation into Federal, State, and local GIS that

Box 2. Lack of geographic grid coordinate values on existing CBRS maps.



will improve customer service and government efficiency by helping to ensure that people know about CBRA restrictions on Federal spending before they choose to invest in a property or pursue a project that is affected by the law. The availability of digital CBRS boundaries will enable a variety of GIS applications. At this time, a community planner who wants to superimpose a digital data layer of CBRS boundaries onto the digital property parcel data in the local GIS must use imprecise and potentially inaccurate CBRS data digitized by non-Service entities. The Service is aware of cases where such digital data has been integrated into local GIS, creating the impression that this data is official and accurate. This creates a potential adverse impact for developers and property owners who make investments based on potentially inaccurate information that has not been created, validated, or endorsed by the Service.

Increase Efficiency of Project Planning

Comprehensive map modernization will enhance and inform project planning and CBRS consistency consultations with other Federal agencies. Increasing development within or near CBRS areas requires planners, developers, and public entities to know the exact location of CBRS boundaries relative to a project site. The use of digital GIS-based technology will allow interested parties to review the location of CBRS boundaries relative to other information layers such as the proposed location of a housing development, a road expansion project, or critical habitat for endangered species. The Service regularly receives requests from Federal and State agencies, local communities, and private entities to determine whether or not a proposed federally-funded project is within the CBRS and if the project is consistent with CBRA. Due to the antiquated maps that currently

depict the CBRS, this consultation process is labor intensive and can take several months to complete. This lengthy CBRA consultation process has adverse impacts for time sensitive projects seeking Federal funding. The ability to superimpose digital CBRS boundaries into a GIS will facilitate advance planning of projects by enabling a fast, accurate, and cost-effective assessment of CBRS boundary locations relative to structures, properties, or project sites.

Increase Efficiency of Property Determinations

Comprehensive map modernization will facilitate more efficient determinations of whether or not certain properties and structures are in or out of the CBRS. Currently, these determinations require labor and time intensive rectification between the CBRS map, aerial imagery, property parcel data, and the structure footprint depicted on a survey or plat map. The NFIP regularly requests the Service to determine whether or not certain properties are within the CBRS, to help determine their eligibility for Federal flood insurance. The lack of digital CBRS maps requires the Service to make determinations using an inefficient process that is labor and resource intensive; it can take several months to complete a single property determination. This lengthy CBRA property determination process delays property owners seeking to obtain Federal flood insurance and mortgages for their homes, and affects the decision-making process to buy and sell property. Digital maps will allow CBRS information to be incorporated into NFIP and other GIS, allowing property owners and insurance agents to determine, in most cases, whether or not a property is affected by the CBRA within minutes. Figure 11 shows the existing boundary of Unit P10A (shown in orange) superimposed on 1999 aerial imagery and St. Lucie County and Indian River County parcel data (shown in pink) to facilitate a CBRS property determination. The property in question (outlined in blue) is easily and clearly determined to be "out" of the CBRS using this digital information.

Figure 10. Sand pumping for a beach nourishment project at Fort Patrick Air Force Base, Florida. (Credit Minerals Management Service)

Facilitate Administrative Map Revisions

Comprehensive map modernization will facilitate the Service's ability to make more accurate, cost-effective, and timely administrative boundary revisions including: (1) voluntary additions to the CBRS by property owners; (2) additions of excess property under the Federal Property and Administrative Services Act; and (3) the CBRA 5-year review requirement to account for geomorphic changes such as erosion and accretion[1]. Conducting a comprehensive 5-year review without digital maps is time and resource intensive. The reviews have taken place twice since the enactment of the CBRA in 1982. The 5-year review in 1989 modified only one unit, and the review in 1997 modified 28 units of the total 585 CBRS units at the time.[2] The availability of digital CBRS boundaries will allow a much more accurate, cost-effective, timely, and comprehensive 5-year review by comparing the existing CBRS boundaries to updated aerial photograpy that is horizontally controlled.

Integrate Boundaries with Flood Insurance Rate Maps

Figure 11. Property determination using digital data.

Comprehensive map modernization will allow a more seamless and efficient integration of CBRS information onto the FEMA FIRMs. CBRS boundaries are depicted on the FIRMs to help administer the CBRA Federal flood insurance prohibition.[3] Figure 12 illustrates a CBRS area depicted on a FIRM (shown as hatched area). When the boundaries of a CBRS area are revised administratively or through legislation, the revised boundaries must be incorporated onto the FIRMs. Due to the inherent difficulties associated with the existing CBRS maps, the FIRMs are not updated with revised CBRS boundaries in a timely manner. CBRS map modernization will facilitate more seamless integration of CBRS boundaries onto the FIRMs which in turn will make accurate CBRS information available to local communities in a more accessible and timely manner.

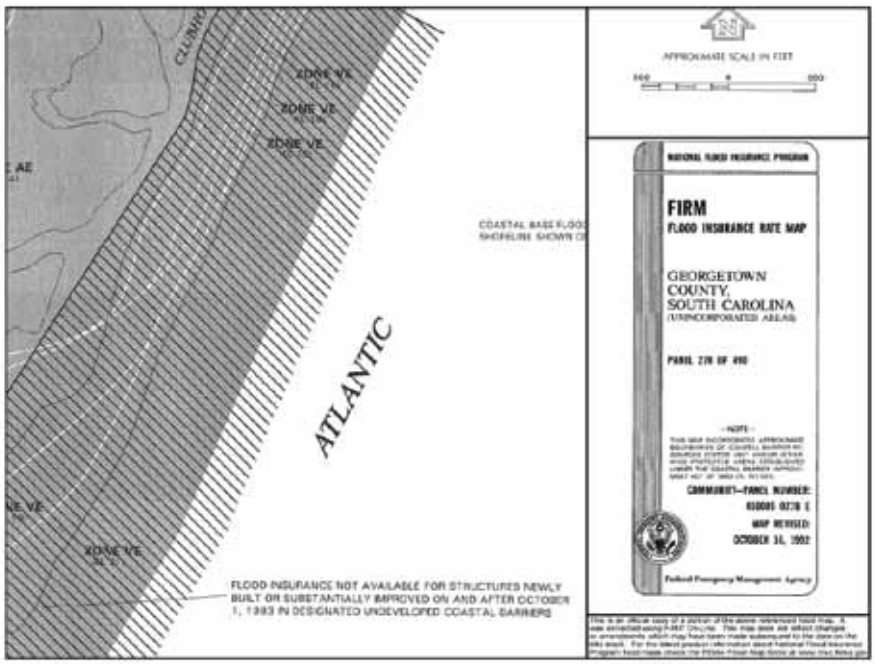


Figure 12. Flood Insurance Rate Map showing a portion of Unit M02.

Conserve Natural Resources

Comprehensive map modernization will help conserve natural resources by (1) increasing awareness and compliance with the CBRA and (2) enabling the Service to work with Federal, State, local, and non-governmental entities to more fully inform their conservation and planning efforts with information regarding the CBRA's Federal funding prohibitions. The maps that currently depict the CBRS make full compliance with the CBRA difficult because they are inaccurate and difficult to interpret. Additionally, some entities are not even aware of the CBRA or its prohibitions because CBRS boundaries are not easily accessible. In 2007, the Government Accountability Office issued a report entitled "Coastal Barrier Resources System: Status of Development That Has Occurred and Financial Assistance Provided by Federal Agencies." The report found that four Federal agencies provided $21 million of prohibited financial assistance within the CBRS. One agency, FEMA, cited the lack of updated CBRS maps and limitations with mapping technology as the primary reasons why errors were made and assistance was provided within the CBRS. The report recommended that the Secretary of the Interior direct the Service to place a high priority on completing its efforts to develop digital maps that more accurately depict unit boundaries.

The Service believes that the CBRA works best when coupled with State and local actions to protect coastal barriers before the economic incentive for development surpasses the CBRA's fiscal disincentives. For example, in North Carolina, the National Audubon Society has acquired land in CBRS areas, such as Pine Island Sanctuary (Unit NC-01), thereby providing long-term protection to the fish and wildlife habitat. State and local governments could eventually integrate CBRS boundaries into their GIS for planning and conservation efforts. By making the CBRS boundaries easily available in a digital format, the Service can collaborate with its partners to encourage more bundling of conservation tools to further the CBRA's intentions.

Address Errors Affecting Private Properties

Comprehensive map modernization will proactively address errors on CBRS maps that inadvertently affect private properties. Subsequent to the CBIA (from 1990 through the present), there have been several legislative technical correction changes to the CBRS (see Appendix C for a list of these changes). The Service receives numerous requests from property owners and their Members of Congress who seek to remove private land from the CBRS so that they can develop the land with Federal subsidies. Often these requests for technical corrections are based on claims that the maps are inaccurate or contain errors. The Service addresses these individual cases by objectively applying standard review criteria.

When a map revision is warranted, the Service works with interested stakeholders and Congress to enact a comprehensively revised map made with digital technology. This case-by-case review process is resource intensive and lengthy, often taking years to complete. Since 1999, digital technologies have been used, in varying degrees, to address technical correction changes that were legislatively enacted for 14 units (i.e., Units NC-03P, L03, NC-01, P19, P19P, VA-59P, VA-60, VA-60P, T07, P25, NC-07P, GA-06P, FL-95P, and FL-96).

Comprehensive map modernization will significantly reduce the need for technical correction changes that remove land from the CBRS, with revisions necessary only to account for geomorphic change and to add appropriate land to the CBRS.

Preserve the Long-term Integrity of the Coastal Barrier Resources System

Comprehensive map modernization will preserve the long-term integrity of the CBRS by allowing the Service to assess the intent of each CBRS boundary, produce draft digital maps that accurately reflect that intent, conduct a public review of the draft digital maps, and create comprehensive background records that document the reasons for the location of each boundary. The existing CBRS maps are subject to challenges that often result in land being removed from the CBRS. Modernized CBRS maps will allow Congress, as well as Federal, State, and local entities and the public, to have confidence that each boundary placement is accurate, consistent with the CBRA and objective mapping criteria.

Figure 13. Endangered wood stork, *Mycteria americana*, feeds on the shore at Pelican Island National Wildlife Refuge, Florida. (Credit USFWS)

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[1] 16 U.S.C. 3503(c) states: "At least once every 5 years, the Secretary shall review the maps referred to in subsection (a) of this section and shall make, in consultation with the appropriate State, local, and Federal officials, such minor and technical modifications to the boundaries of System units as are necessary solely to reflect changes that have occurred in the size or location of any System unit as a result of natural forces."

[2] 54 FR 19248: In the 1989 review, only one unit, K03, was modified.

62 FR 8258: In the 1997 review, a total of 28 units were modified. These units included: ME-17, ME-18, MA-03, C01B, MA-20P, MA-24, C28, C31, D02B, NY-04P, NY-50, F10, NJ-09, MD-03, MD-37P, MD-38, VA-09, VA-23, VA-36, L07, L09, P16, P17, FL-89, FL-99, FL-101, Q01A, and VI-07.

[3] 16 U.S.C. 3504 and 42 U.S.C. 4028

P.L. 101-591 Sec. 9 amends the NFIA to state "No new flood insurance coverage may be provided under this title after the expiration of the 1-year period beginning on the date of the enactment of the Coastal Barrier Improvement Act of 1990 for any new construction or substantial improvements of structures located in any area identified and depicted on the maps referred to in section 4(A) of the Coastal Barrier Resources Act as an area that is (1) not within the Coastal Barrier Resources System and (2) is in an otherwise protected area. Notwithstanding the preceding sentence, new flood insurance coverage may be provided for structures in such protected areas that are used in manner consistent with the purpose for which the area is protected."

CHAPTER 3: DIGITAL DATA STANDARDS, NEEDS, AND AVAILABILITY

With regards to data needs, the CBRRA of 2000 requires that this report describe: (1) the cooperative agreements that will be necessary to complete digital mapping of the entire CBRS; (2) the extent to which the data necessary to complete digital mapping of the entire CBRS are available; and (3) the need for additional data to complete digital mapping of the entire CBRS. In addition, the CBRRA requires that all data used to carry out the pilot project comply with certain established national data standards.

The Service evaluated and used many data types to create the pilot project maps. These data include aerial imagery as the base map; geomorphic data to ensure appropriate relationships between CBRS boundaries and natural features (such as wetlands, streams and shorelines); development data (i.e. digital property parcel data, date of construction data, and infrastructure data) to ensure appropriate relationships between CBRS boundaries and developed areas; and conservation and recreation area boundary data to ensure appropriate relationships between OPA boundaries and the underlying conservation or recreation areas. The advantages and disadvantages of these data types are evaluated relative to the data source, data availability, and cooperative agreements that will be required to complete digital mapping of the entire CBRS.

National Digital Data Standards

The CBRRA of 2000 requires that all data used to carry out the pilot project comply with the National Spatial Data Infrastructure (NSDI) established by Executive Order 12906, and any other standards created by the Federal Geographic Data Committee (FGDC) established by Office of Management and Budget Circular A-16. In carrying out the pilot project, the Service used data that is compliant with both NSDI and FGDC standards. The Service also used data that is not certified as NSDI or FGDC compliant, such as certain local digital property parcel data. The non-compliant data was used only as a secondary source of information. The Service ensured compliance with NSDI and FGDC standards before using any data to map a pilot project unit. Validation of compliance for each data set was either documented in writing or present in the digital metadata.[1]

Digital Data Needs and Availability

The Service used several imagery sources and data sets to create the pilot project maps including aerial imagery, geomorphic data, development data, conservation and recreation area boundary data, and a variety of other data types. The sources, availability, advantages, disadvantages and cooperative agreements needed to obtain these different data sets are detailed in Appendix B.

Subsequent to the Service's acquisition of data necessary to begin the Digital Mapping Pilot Project, the Council of Environmental Quality's Joint Subcommittee on Ocean Science and Technology established the Interagency Working Group on Ocean and Coastal Mapping (IWG-OCM) to facilitate the coordination and leveraging of mapping resources across the Federal sector and with State and local governments, industry, and non-governmental organization interests. As the Service continues its modernization of CBRS maps, we will coordinate with the IWG-OCM in our data acquisition.

Digital Raster Graphics

A digital raster graphic (DRG) is a horizontally controlled, orthorectified[2] image of a scanned USGS topographic or planimetric map. DRGs were used in the pilot project to establish horizontal control of the digital CBRS boundaries. Horizontal control ensures that the digital CBRS boundaries accurately line up with specific geographic coordinates on the surface of the Earth. The Service found that because the existing CBRS boundaries are depicted on USGS base maps, the CBRS boundaries are most efficiently horizontally controlled by using the DRG. The horizontal control process is discussed in further detail in Chapter 4. DRGs are available from the USGS, State and local governments, and private vendors.

Aerial Imagery

As described in Chapter 2 of this report, the most significant shortcomings of the existing CBRS maps are the outdated and generally inadequate base maps that currently depict the CBRS. In carrying out the pilot project, the Service found that aerial imagery is the most suitable medium for CBRS mapping, because the CBRS boundaries can be aligned precisely with the geomorphic and development features that are often visible on the photograph. The three most significant factors to consider when selecting the aerial imagery to be used as the CBRS base map are age, resolution, and orthorectification of imagery.

- **Age of Imagery:** Due to the dynamic nature of coastal barriers, recent aerial imagery is important for CBRS mapping. Recent imagery allows accurate CBRS boundary placement relative to geomorphic and development features visible on the photograph, such as shorelines, streams, wetlands, road networks, and structures. Because aerial imagery represents a "snapshot in time," it becomes outdated quickly, especially in active hurricane seasons and in areas where significant development is occurring. The Service determined that aerial imagery used for CBRS mapping should be no more than 2 years old. Currently, the aerial imagery

Box 3. Comparison of Imagery Quality.

The two images on the right show the differences in aerial imagery obtained for an area within Unit DE-07P in Delaware. The top right image illustrates the existing DE-07P boundary (shown in orange) overlaid on the most recently available USGS DOQQ (dated 1998). The bottom right image illustrates the existing DE-07P boundary (shown in orange) overlaid on 2004 imagery produced by the State of Delaware. Note the red arrows indicating an area that has developed since the latest available DOQQ imagery. Also, the locally produced imagery in this case is higher resolution, making it easier to identify geomorphic and development features.

USGS DOQQ – 1998 Imagery

State of Delaware Imagery – 2004 Imagery

used for the pilot project is, on average, 8 years old. Although more recent imagery is now available, the Service decided not to delay completion of the pilot project to substitute more recent imagery.

- **Resolution of Imagery:** Due to the need for accurate CBRS boundary placement relative to geomorphic and development features, high resolution imagery is important for CBRS mapping. The Service determined that the minimum image resolution for CBRS mapping should be 1 meter pixels. An image resolution with 1 meter pixels means that each pixel on the aerial photograph is equal to 1 meter of distance on-the-ground. The higher the resolution image (such as 1/3 meter pixel), the greater level of detail visible on the image. The resolution of imagery used in the pilot project is 1 meter pixels or less.

- **Orthorectification of Imagery**: Due to the direct relationship between the CBRS boundaries and the geomorphic or development features they are intended to follow on-the-ground, it is important that the aerial imagery used as the CBRS base map accurately reflects the position of those features on the Earth's surface. Orthorectification is the process of adjusting an aerial photograph to ensure the proper perspective of features in the image relative to their true position on the Earth's surface. Orthorectification ensures that distortion and image displacement caused by the changes in aircraft altitude, tilt, and topographic relief are corrected. The Service determined that the aerial imagery used for CBRS mapping should be orthorectified.

In conducting the pilot project, the Service researched and utilized a variety of aerial imagery sources to determine the most suitable CBRS base map that is readily available at little or no cost to the Service; meets the standards established by NSDI and FGDC; and meets the factors identified above for CBRS mapping (recent, high resolution, orthorectified imagery). The

Service investigated several Federal, State, local, and private sources for procuring aerial imagery to serve as the CBRS base map. These sources are briefly described below and in more detail in Appendix B.

- **Federal Sources:** Federal agencies, including USGS and the National Oceanic and Atmospheric Administration (NOAA), have aerial imagery available that is, in some cases, suitable for CBRS mapping. After evaluating the sources of aerial imagery currently available, the Service determined that the USGS digital orthophoto quarter quadrangle (DOQQ), produced through the National Digital Orthophoto Program, is generally the most suitable and readily available aerial imagery for CBRS mapping.

  The USGS DOQQ is an aerial photo that is able to differentiate items on the Earth's surface that are as small as 1 meter in length. The advantages of DOQQs are that they are readily available, at no cost, for the entire country. The disadvantages associated with DOQQs are that they have relatively low image resolution and they are not updated on a regular and frequent schedule. Sixty-five of the 70 pilot project units and the most recently enacted technical corrections (i.e., Units VA-60, VA-60P, T07, T07P, P25, NC-07P, GA-06P, FL-95P, and FL-96) were mapped on USGS DOQQs.

- **State and Local Sources:** State and local governments are increasingly generating up-to-date high quality aerial imagery that is, in many cases, a viable alternative for CBRS mapping when the USGS DOQQs available are more than 2 years old. In carrying out the pilot project, the Service found that high-quality State and locally-generated aerial imagery is available, and is becoming more prevalent as communities increase their digital technology capabilities. Five of the 70 pilot project units were mapped on State or locally-generated aerial imagery (i.e., Units DE-07, DE-07P, H01, P21, and P21P). Since the inception of the pilot project in September 2002, the number of States and counties using and sharing imagery has grown substantially. Local governments have a need for current imagery, and therefore it is updated frequently, sometimes even annually. The resolution of the State and local imagery is generally higher than the resolution of a USGS DOQQ.[3] See Box 3 for a comparision of Unit DE-07P imagery obtained from the USGS and the State of Delaware. The disadvantages associated with State and local imagery are availability and cost. In those areas where high quality imagery is available at the State or local level, the jurisdictions often have proprietary interest in its production and may place restrictions on its distribution and use. State and local jurisdictions have different cost structures for sharing the data, ranging from no-cost to thousands of dollars per map panel.

- **Procuring New Imagery:** In cases where suitable aerial imagery is not available for CBRS mapping, the Service can enter into agreements with other Federal agencies that have aerial imagery programs (such as USGS, U.S. Department of Agriculture (USDA), and NOAA) or contract with a private vendor to acquire the necessary aerial imagery.

Geomorphic Data

In carrying out the pilot project, the Service used wetlands, soils, and other geomorphic datasets to help determine the proposed CBRS boundary placement. CBRS mapping requires data that accurately depict geomorphic features on-the-ground because System unit boundaries are generally intended to follow geomorphic features. These data are briefly described below and in more detail in Appendix B.

- **Wetlands Data:** In carrying out the pilot project, the Service used National Wetlands Inventory (NWI) data that shows digital graphic representations of the type, size, and location of the wetlands and deepwater habitats in the United States.[4] Although a small margin of error is inherent in use of wetlands data (due to the dynamic, seasonal and ever-changing spatial extent of these areas, and also due to the age of imagery used to map the wetlands), this information is a useful tool in determining the general extent of wetlands. The margin of error can be minimized by validating the

Figure 14. National Wetlands Inventory layer and color infrared imagery in a GIS environment.

wetlands data against recent color infrared (CIR) imagery. CIR imagery shows color bands which differentiate between types of vegetation that are not evident from looking at black and white aerial imagery. CIR imagery is helpful when aligning CBRS boundaries to vegetative features such as the edge of a stand of mangroves. Figure 14 illustrates an NWI data layer overlaid on CIR imagery of pilot project Unit P04A.

- **Soils Data:** In carrying out the pilot project, the Service used USDA's Natural Resources Conservation Service (NRCS) soil data to help determine the interface between the fastland and associated aquatic habitat.[5] The existence of hydric soils is an indication of the location of wetlands because hydric soils are generally saturated for more than half the year. The NRCS soil data, in conjunction with NWI wetlands data, is useful in mapping CBRS boundaries that are intended to follow the extent of wetlands.

- **Other Geomorphic Data:** In carrying out the pilot project, the Service used some geomorphic data obtained through State GIS websites, often affiliated with State universities. For example, the State of Florida has mangroves data for the entire Florida coast available in a GIS. This data is useful for CBRS mapping because several CBRS boundaries are delineated at the edges of mangrove stands.

Development Data

When CBRS areas were originally mapped, certain criteria were used to determine the development status of coastal barriers under consideration for designation as System units.[6] The development criteria, including density of development and a full complement of infrastructure, were slightly modified and codified by the CBRRA of 2000.[7] In carrying out the pilot project, the Service used digital property parcel data, date of construction data, and in one case, infrastructure data, to ascertain the development status of an area at the time of its designation. This information is useful to help understand the historical intent of a CBRS boundary and in recommending additions, deletions, and reclassifications to the CBRS. The development data are briefly described below and in more detail in Appendix B.

- **Digital Property Parcel Data:** In carrying out the pilot project, the Service, in many cases, obtained digital property parcel data because certain CBRS boundaries are intended to follow parcel boundaries. The Service acquired digital property parcel data from local governments and used it to ensure the accuracy of CBRS boundaries relative to property boundaries. Local governments, especially in urban and high-growth areas, are increasingly converting their property parcel data to digital format, and most are making this information available free of charge through the local property appraiser's office, tax assessor's office, or GIS department. During the course of the pilot project, the Service was able to procure digital property parcel data for 62 of the 70 pilot project units. Other local governments (most notably in Louisiana) had parcel data but it was not available in digital format.

- **Date of Construction Data:** In carrying out the pilot project, the Service obtained the date of construction information for structures located in and around CBRS areas, generally from the local property appraiser's office, tax assessor's office, or GIS department. When used in conjunction with digital property parcel data, date of construction information provides valuable insight into the level of development at the time an area was originally designated within the CBRS. Figure 15 illustrates aerial imagery overlaid with the St. Johns County digital property parcel data (shown in pink), and date of construction data (shown by the black dates located within the parcels). This date of construction information is generally highly accurate because local governments compile it on an annual basis for their tax assessments. In limited cases, such as for pilot

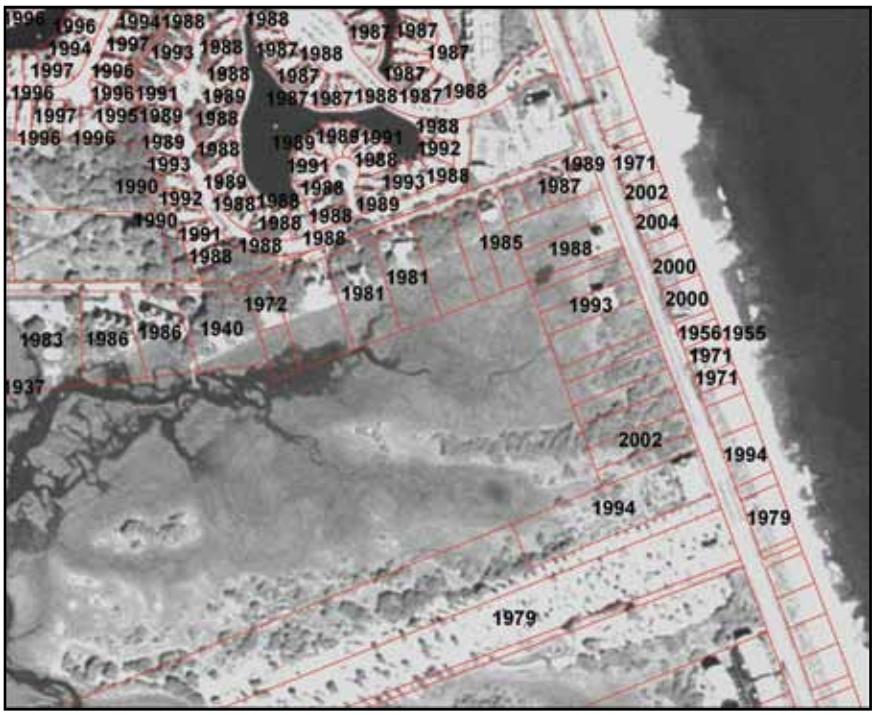

Figure 15. The date of construction data is shown by the black dates located within parcels.

project units located in the State of Louisiana, an assessment of date of construction data was not conducted because such data does not exist for those areas.

- **Infrastructure Data:** In carrying out the pilot project, with the exception of Unit L06, the Service did not collect infrastructure data to determine whether or not there was a full complement of infrastructure to each lot or building site in the area at the time of the area's designation within the CBRS. In the case of Unit L06, the Service conducted an infrastructure assessment for three areas in this unit, based on indications that some of the areas added in 1990 were served by a full complement of infrastructure that was not evident on the quadrangles used when the area was last mapped.

  Through this experience with Unit L06, the Service learned that this type of infrastructure assessment is extremely time and resource intensive because it includes contacting local utilities and other sources to determine when the infrastructure for the area was available on-the-ground. The Service concluded that it would be cost prohibitive to conduct this kind of infrastructure assessment for all pilot project units. Instead, the Service relied on visual cues on the aerial imagery (such as roads) as an indication of the level of infrastructure on-the-ground. The Service anticipates that if any areas proposed for addition to a System unit, or reclassification from OPA to System unit status, contained a full complement of infrastructure at the time of designation within the CBRS, interested parties will provide the necessary documentation during the public review period for the pilot project maps. This approach is similar to the process used to assess the level of infrastructure prior to the CBIA designations in 1990.[8]

Conservation and Recreation Area Boundary Data

In carrying out the pilot project, the Service obtained digital boundary data for the parks and other underlying conservation and recreation areas the OPAs are intended to follow. Due to the inaccurate base maps and manual cartographic techniques used in the past, small portions of private land that are contiguous with the underlying conservation or recreation area (but are not inholdings) are sometimes inadvertently and incorrectly included within the boundaries of the OPA. Consequently, the private property owners of these lands are unable to obtain Federal flood insurance.

The Service, whenever possible, obtained digital data describing the boundaries of public recreation and conservation areas within a given area, including Statewide GIS databases, digital property parcel data from local governments, and direct contact with land managers to obtain surveys, plat maps, or deeds. This type of data is becoming more routinely available free of charge within the public domain.

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1 Metadata, or "data about data", describes the content, quality, condition, and other characteristics of data. Metadata are used to organize and maintain investments in data, to provide information to data catalogs and clearinghouses, and to aid data transfers. The FGDC approved the Content Standard for Digital Geospatial Metadata on June 8, 1994. Since that time, many organizations within and outside of the Federal government have adopted the FGDC metadata standard and are using automated indexing and serving mechanisms to provide access to their holdings through the Internet.

2 Orthorectified imagery is airborne or satellite imagery that has been corrected for relief displacement and displays all the properties of an accurate map whereby each pixel is viewed looking straight down. As it relates to image accuracy, a normal aerial photograph has a perspective that causes features closer to the camera appear to be larger than features farther away from the camera.

3 Although DOQQs satisfy NSSDA requirements, State and locally supplied digital orthophotos and those procured from private vendors normally exceed horizontal (radial) RMSE of 2.2 feet, 4.4 feet, or 8.8 feet if compiled at common scales of 1" = 100', 1" = 200', or 1" = 400', respectively.

4 http://www.fws.gov/nwi/. National Wetlands Inventory Wetlands Mapper. U.S. Fish and Wildlife Service.

5 Associated aquatic habitat includes the wetlands, marshes, estuaries, inlets, and nearshore waters adjacent to coastal barriers. Fastland includes the portion of a coastal barrier between the mean high tide line on the ocean side, and the upper limit of tidal vegetation (or, if such vegetation is not present, the mean high tide line) at the rear of the coastal barrier.

6 47 FR 35708: "A density threshold of roughly one structure per five acres of fastland is used for categorizing a coastal barrier as developed…All or part of a coastal barrier will be considered developed, even when there is less than one structure per five acres of fastland, if there is a full complement of infrastructure in place…A full complement of infrastructure requires that there be vehicle access to each lot or building site plus reasonable availability of a water supply, a waste water disposal system, and electrical service to each lot or building site."

7 P.L. 106-514 Sec. 2

[8] Department of the Interior, 1988 Recommendations, op. cit., pp. 110 & 113 respectively:

"Study Group members also visited many sites. Detailed assessment of the status of infrastructure was not possible, given limitations of available information and resources. When landowners wrote to the [Department], however, claiming a full complement of infrastructure was in place in their property, the claims were investigated. Where a full complement of infrastructure (roads, water and electric lines) provided by the developer to each lot or building site was verified, the barrier was considered developed."

"Undeveloped coastal barriers, or portions thereof, were delineated using U.S. Geological Survey topographic quadrangle maps and, when available, recent aerial imagery. Development status was determined primarily on the basis of the density of visible structures."

CHAPTER 4: DIGITAL MAPPING METHODOLOGY

The pilot project mapping methodology included: selection of pilot project units; adjustments to "fit" the digital data to the underlying base map; digitization of the existing CBRS boundaries and establishment of horizontal control; assessment of boundary intent; adjustment of existing boundaries to create proposed boundaries that align with geomorphic, development, or cultural features, and, in limited cases, to add new fastland; and calculation of the acreage and shoreline mileage associated with each unit.

The remapping process for each of the pilot project units is documented in background records maintained by the Service and available upon request at the Service's headquarters office. The existing and proposed boundaries are delineated on each of the pilot project maps in Appendix D. The "existing" pilot project boundaries have been digitized from the controlling CBRS map, horizontally controlled, and transferred to the new base map, but have not been adjusted to reflect the intent of the boundary. The "proposed" pilot project boundaries have been adjusted to reflect the geomorphic, development, or cultural intent of the boundary, and in limited cases, to add new fastland, based on objective criteria and mapping protocols.

Selection of Pilot Project Units

The CBRRA of 2000 specifies that the pilot project shall consist of the creation of digital maps for no more than 75 units and no fewer than 50 units of the CBRS, one-third of which shall be OPAs. The Service selected 60 CBRS units for this pilot project, one-third (20) of which are OPA units. The pilot project maps depict a total of 70 CBRS units, which include 60 existing CBRS units, 8 units that are proposed for reclassification from System unit to OPA status or vice-versa, and two proposed new OPA units. The pilot project units are located in Delaware, North Carolina, South Carolina, Florida, and Louisiana. The selection of units was based primarily on availability of relatively recent aerial imagery. Another factor considered was addressing high priority areas for digital maps based on known development pressures.

Digital Data "Fitting"

Compliance with national data standards does not, in and of itself, make data accurate. When NSDI and FGDC compliant data, described in Chapter 3, is superimposed on orthorectified aerial imagery, it often does not line up properly. For example, digital property parcel data that has been horizontally controlled and placed on an aerial photograph that has also been horizontally controlled in a GIS may show property boundaries crossing through structures. This is due to differences in the data sources, such as the aerial imagery and digital property parcel data, and is not a reflection of poor data quality. It is not uncommon for two NSDI and FGDC compliant base maps to show physical features such as roads, streams, and shorelines, in slightly different locations. Figure 16 illustrates a spatial offset that occurred when digital property parcel data (meeting NSDI and FGDC standards) from Brevard County, Florida, was overlaid on a USGS DOQQ. The major road running northwest-southeast through the bottom left-hand corner of this DOQQ image does not coincide with the pink lines depicting the road's position on the county parcel data. This problem can generally be overcome by "fitting" the parcel data to the underlying aerial imagery being used as the base map.

A proper fit of the data to the CBRS base map is important because positional differences of only a few feet in CBRS boundaries can affect a homeowner's eligibility for Federal flood insurance.

Mapping System Units

The process used to map pilot project System units is summarized below.

Step 1 – Digitize Boundary and Establish Horizontal Control

A common misconception is that a digital map is, by default, an accurate map. The process of digitizing a CBRS boundary does not, in and of itself, make the boundary accurate. Horizontal control is what makes a digital map spatially accurate as it provides the ability to reference all features

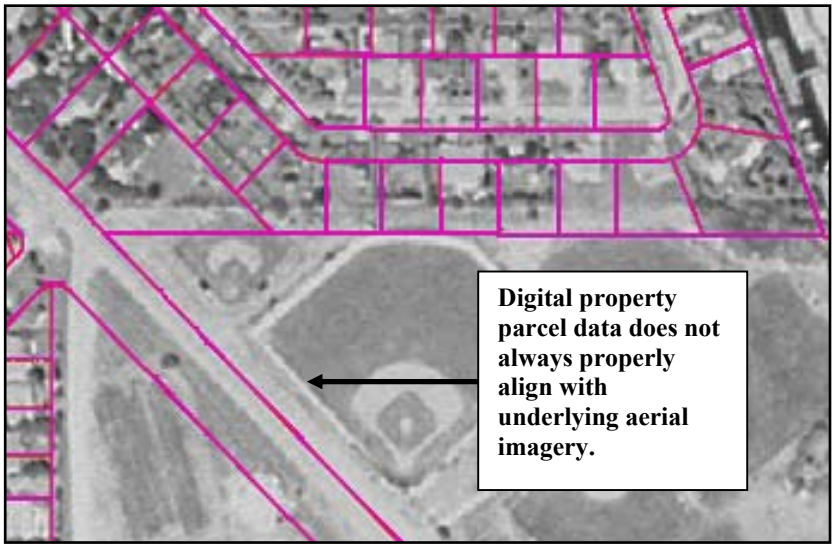


Figure 16. Brevard County, Florida, parcel data (shown in pink) overlaid on a USGS DOQQ.

shown on the map to an exact location on the Earth's surface. The existing CBRS base maps are not horizontally controlled, making the digitized boundaries from these maps incompatible with GIS applications.

The existing CBRS pilot project boundaries were first digitized. Then, the CBRS boundaries were horizontally controlled by linking points on the CBRS maps to specific geographic coordinates on horizontally controlled digital raster graphics (DRGs) of USGS quadrangles or DOQQs. A DRG is a horizontally controlled, orthorectified image of a scanned USGS topographic or planimetric map. The digitized and horizontally controlled CBRS boundary is then placed on the aerial imagery selected as the CBRS map. The layers in this process are illustrated in Figure 17.

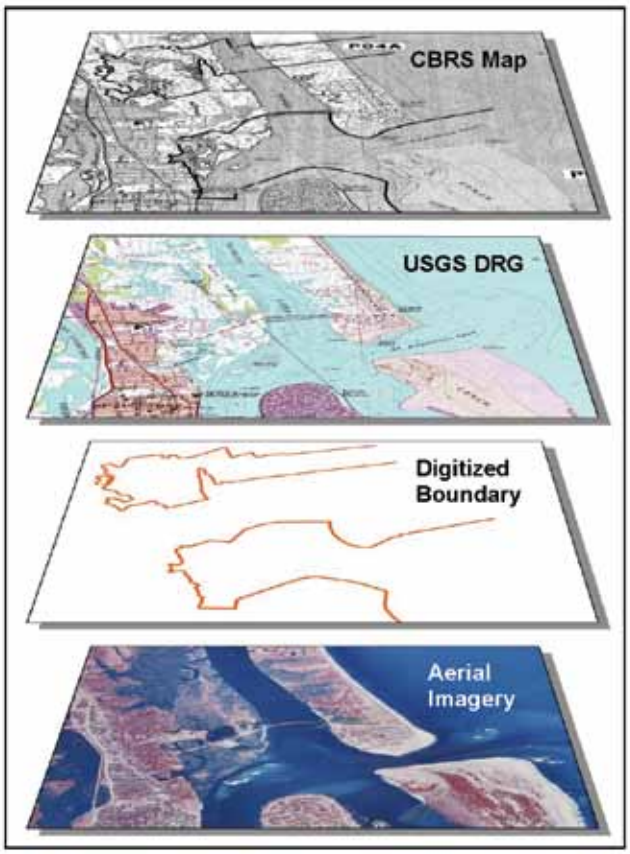


Figure 17. The digitized boundary is obtained from a paper CBRS map that has been referenced to a USGS digital raster graphic in order to establish horizontal control, and is then placed on horizontally controlled aerial imagery.

Step 2 – Assess Boundary Intent

Once the existing boundaries of the pilot project units were digitized, horizontally controlled, and transferred to the aerial imagery, the Service assessed each boundary in the pilot project unit to understand the intent of the boundary with respect to geomorphic, development, and cultural features. System unit boundaries are generally intended to follow geomorphic features (e.g., shorelines and streams) but can also follow development features (e.g., property parcel boundaries, roads) or cultural features (e.g., county lines, park boundaries).

This assessment included a review of the Service's record for each unit, public laws, notices published in the Federal Register, reports to Congress, enacted and historical CBRS maps, aerial imagery, and an assortment of data described in Chapter 3.

Step 3 – Adjust Existing Boundaries to Create Proposed Boundaries

Once the intent of the pilot project unit boundaries was assessed and understood, the digitized CBRS boundaries were adjusted to reflect that intent. The proposed boundaries were delineated using objective criteria and mapping protocols. In limited cases where the proposed boundaries on the pilot project maps deviate from established criteria and mapping protocols, these exceptions are noted.

Three main types of boundary changes were made to the pilot project System units: geomorphic-based changes, development-based changes, and cultural-based changes. These changes were made in order to: (1) reflect geomorphic changes that have occurred since the unit was last mapped; (2) align the System unit boundary with geomorphic features; (3) add associated aquatic habitat; (4) adjust channel boundaries in a consistent manner; (5) align the System unit boundary to development features; (6) align the System unit boundary with cultural features; (7) add new fastland not currently within the CBRS; and (8) reclassify appropriate lands from System unit to OPA status. These proposed changes are described in detail in Chapter 5. The maps in Appendix D depict the existing and proposed boundaries for each pilot project unit.

Step 4 – Calculate Acreage and Shoreline Changes

After the mapping was completed, the Service used GIS applications to calculate the existing and proposed acreage and shoreline length associated with each pilot project unit. The fastland and associated aquatic habitat acreage within each unit were also calculated. The acreage and shoreline length associated with each pilot project unit are listed in Appendix E .

Mapping Otherwise Protected Areas

The criteria and protocols for OPA mapping are significantly different from those of System units. OPA boundaries are intended to follow the boundaries of an area established under Federal, State, or local law, or held by a qualified organization, primarily for wildlife refuge, sanctuary, recreational, or natural resource conservation purposes. The process used to map pilot project OPAs is summarized

below.

Step 1 – Digitize Boundary and Establish Horizontal Control

See Step 1 of "Mapping System Units" section of this chapter. This step is identical for System units and OPAs.

Step 2 –Assess Boundary Intent

Once the existing boundaries of the pilot project units were digitized, horizontally controlled, and transferred to aerial imagery, the Service identified the conservation or recreation area(s) each OPA boundary was intended to follow. This assessment included comparing the existing OPA boundary to digital property parcel data and the conservation or recreation area boundary data described in Chapter 3.

Step 3 – Compile and Validate Conservation and Recreation Area Boundaries

The most reliable means to establish the conservation or recreation area boundary location with a high degree of accuracy is to conduct field surveys of the subject site. Field surveys of all OPA boundaries were cost-prohibitive for the pilot project. Instead, existing conservation or recreation area boundary data were obtained from the sources described in Chapter 3; digitized if needed; overlaid on the orthorectified aerial imagery being used as the base map; and fit to the imagery as described at the beginning of this chapter.

Stakeholders (generally park managers) were asked to review and concur with the placement of the conservation or recreation area boundary on the base map. Upon resolution of any boundary discrepancies, stakeholders and the Service signed a statement of concurrence and a map depicting the underlying conservation or recreation area boundaries. This concurrence process ensures that the OPA boundaries, which are based on the underlying conservation or recreation area boundaries, are as accurate as possible.

Step 4 – Adjust Existing Boundaries to Create Proposed Boundaries

The Service adjusted the OPA boundaries in order to: (1) align with cultural features such as conservation or recreation area boundaries; (2) add conservation or recreation area; (3) remove adjacent private lands that are not inholdings, as appropriate; (4) reclassify from OPA to System unit status; (5) add new OPAs; and (6) map OPA boundaries that lie in channels in a consistent manner. These proposed changes are described in detail in Chapter 5. The maps in Appendix D depict the existing and proposed boundaries for each pilot project unit.

Step 5 – Calculate Acreage and Shoreline Changes

See Step 4 of the "Mapping System Units" section of this chapter. This step is identical for System units and OPAs.

CHAPTER 5: PILOT PROJECT RESULTS

The CBRRA of 2000 requires that this report describe the extent to which the boundary lines on the proposed pilot project maps differ from the boundary lines on the existing maps. This chapter describes the results of the pilot project by: (1) summarizing the different types of proposed boundary changes associated with System units and OPAs; (2) listing the proposed boundary changes associated with each unit in Tables 1 and 2; (3) summarizing the proposed acreage and shoreline changes; and (4) summarizing the general contents of the background records created for each of the units. The pilot project unit summaries and maps are provided in Appendix D. The acreage and shoreline change numbers for each pilot project unit are provided in Appendix E.

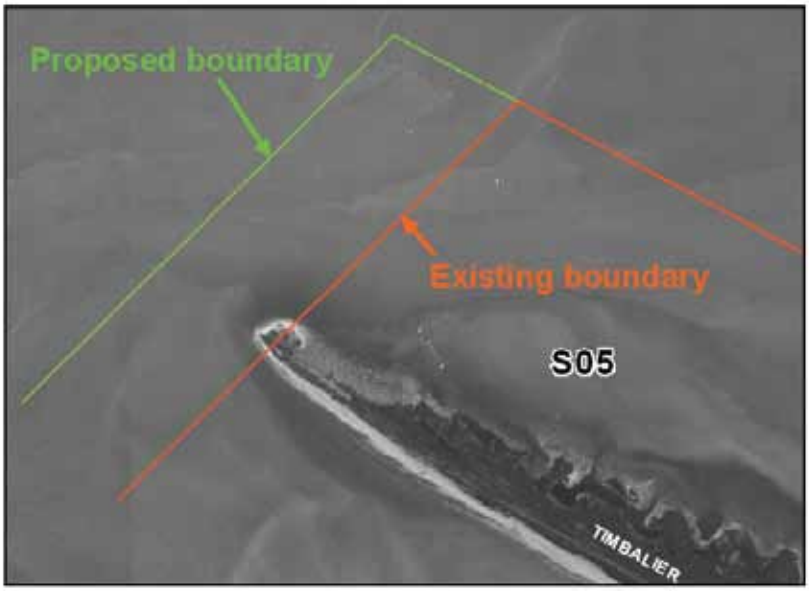


Figure 18. Proposed Unit S05 boundary (shown in green) accounts for accretion of Timbalier Island, Louisiana over time.

Types of Proposed Boundary Changes

The different types of proposed boundary changes contained in the pilot project maps are summarized below, along with illustrative examples. Tables 1 and 2 in this chapter list the different types of boundary changes proposed for each of the pilot project System units and OPAs, respectively.

Proposed System Unit Changes

- **Adjustment to Reflect Geomorphic Change:** The CBRA requires that every 5 years the Service make minor and technical modifications to the boundaries of System units solely to reflect changes in the size or location of the units caused by natural forces such as accretion and erosion.[1] To satisfy the CBRA 5-year review requirement for pilot project System units, the Service assessed the geomorphic change that has occurred to the coastal barrier since it was last mapped. The proposed boundaries of 14 pilot project System units were adjusted to reflect geomorphic change. Figure 18 illustrates a barrier island in Unit S05 that has prograded northwest over time. Note that the proposed Unit S05 boundary accounts for this movement and provides an appropriate buffer to accommodate future accretion of Timbalier Island, Louisiana.

- **Alignment with Geomorphic Features:** The proposed boundaries of 28 pilot project System units were adjusted to align with underlying geomorphic features on the base map. CBRS boundaries are often intended to follow geomorphic features such as shorelines. In Figure 19, the proposed Unit P04A boundary shown by the green line is aligned with the wetlands that it was intended to follow.

- **Addition of Associated Aquatic Habitat:** The CBRA defines a coastal barrier to include the adjacent wetlands, marshes, estuaries, inlets, and near-shore waters as "associated aquatic habitat." A notice published by

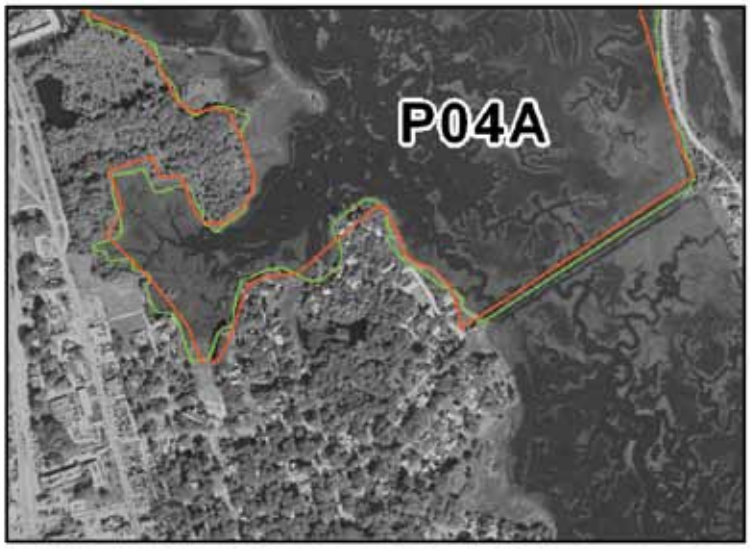


Figure 19 Proposed Unit P04A boundary (shown in green) aligns with a geomorphic feature. The existing boundary is shown in orange.

the Department in the Federal Register on March 4, 1985, provided guidance on the delineation of landward boundaries, which often follow the landward extent of aquatic habitat.[2] In carrying out the pilot project, the Service noted that this mapping guidance has not been consistently applied and there are inconsistencies in how the associated aquatic habitat behind development was mapped in 1982, 1990, and in subsequent legislative amendments when areas were added to the CBRS. Some units include the entire associated aquatic habitat, regardless of the level of development on the barrier, while others do not include the full extent of the associated aquatic habitat. The proposed pilot project boundaries consistently include the landward aquatic habitat associated with developed and undeveloped coastal barriers. (See Figure 20) The proposed boundaries of 23 pilot project System units were adjusted to add associated aquatic habitat to the CBRS.

- **Adjustment to Map Channel Boundaries Consistently:** Channels are often located between coastal barriers and the mainland and are a part of the barrier's associated aquatic habitat. Past notices published in the Federal Register by the Department have included guidance for the delineation of CBRS boundaries located along channels and other water bodies.[3] In carrying out the pilot project, the Service noted that this guidance has not been consistently applied in the past. In addition, the aspects of this guidance that exclude portions of channels from System units are inconsistent with the CBRA definition of a coastal barrier, which includes all associated aquatic habitat (adjacent wetlands, marshes, estuaries, inlets, and nearshore waters). The Service believes that a consistent approach to the placement of CBRS boundaries within channels, taking into account the CBRA definition of a coastal barrier, should be applied to the CBRS maps. Therefore, the proposed System unit boundaries presented in this report consistently delineate boundaries located in channels to include all associated aquatic habitat. The proposed boundaries of 14 pilot project System units were adjusted to include the entire channel within the System unit instead of placing the boundary at the center of the channel.

  These proposed changes place additional channel area within System units. The effect of these proposed changes, if enacted by Congress, would be to prohibit the use of Federal financial assistance for dredging and other channel maintenance. The Service does not anticipate that these proposed changes will have any significant impact on the maintenance of these channels because of the exception made in the CBRA for existing channels and related structures, and because, in general, the areas affected already include half of the channels' width within the CBRS.

  The proposed System unit boundaries that lie within channels were consistently delineated according to the following mapping protocols developed during the course of the pilot project:

  Developed regular shoreline: In cases of a developed regular, or relatively smooth, shoreline, the proposed boundary includes most of the channel within the System unit. The boundary is placed 50 feet from the shoreline to avoid inadvertent inclusion of developed property within the CBRS (see Figure 21).

  Undeveloped regular shoreline: In cases of an undeveloped regular shoreline, the proposed boundary includes the entire width of the channel within the System unit. The boundary coincides with the shoreline (see Figure 22).

  Undeveloped irregular shoreline: In cases of an undeveloped irregular, or relatively convoluted, shoreline, the proposed boundary includes most of the channel within the System unit. The boundary is generalized and, in some cases, placed a maximum of 50 feet from the shoreline, to avoid a heavily convoluted line while including as much of the associated aquatic habitat as is possible within the CBRS (see Figure 23).

  Undeveloped shoreline with emergent aquatic habitat: In cases of an undeveloped shoreline with emergent aquatic habitat, the proposed boundary

Figure 20. Proposed Unit L07 boundary (shown in green) adds associated aquatic habitat behind a developed shoreline. The existing boundary is shown in orange.

Figure 21. Mapping channels with a regular developed shoreline. The Unit P05 proposed boundary is shown in green and the existing boundary is shown in orange.

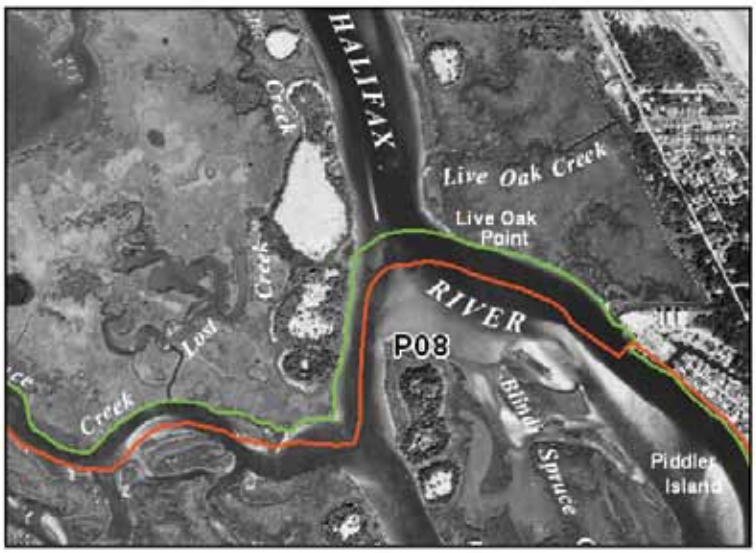


Figure 22. Mapping channels with an undeveloped regular shoreline. The Unit P08 proposed boundary is shown in green and the existing boundary is shown in orange.

Figure 23. Mapping channels with an undeveloped irregular shoreline. The Unit L05 proposed boundary is shown in green and the existing boundary is shown in orange. The boundary is generalized, and as a result, may not include the entire associated aquatic habitat (see blue shaded area).

includes most of the channel within the System unit. The boundary is generalized and includes all emergent aquatic habitat growth (such as palm hammocks and mangrove) within the System unit. The boundary is placed 50 feet from the farthest visible extent of growth (see Figure 24).

- **Alignment with Development Features:** Although System unit boundaries are generally intended to follow certain geomorphic features, there are several cases where System unit boundaries are intended to follow development features such as the edge of a road, a bridge, or the "break-in-development," that existed on-the-ground when the unit was designated. The break-in-development is where development ended, either immediately adjacent to the last structure in a cluster of structures or at the property parcel boundary of the last structure.[4] The proposed boundaries of 31 pilot project System units were adjusted to align with development features. Box 4 illustrates an excluded area within Unit L06 which was intended to follow the break-in development that existed in 1982 and exclude from the unit development that already existed when the area was designated within the CBRS in 1982.

- **Alignment with Cultural Features:** The proposed boundaries of 7 pilot project System units were adjusted to align with cultural features such as county boundaries or adjacent conservation or recreation area boundaries. Often, only minor changes were needed to ensure that boundaries following cultural features are accurately placed.

- **Addition of Fastland Not Currently Within the CBRS:** In carrying out the pilot project, the Service assessed areas adjacent to existing units, and in limited cases, identified undeveloped fastland that is appropriate for inclusion within

the CBRS (see Figure 25). The proposed boundaries of 8 pilot project System units were adjusted to add undeveloped fastland that is not currently within the CBRS. This approach is consistent with the CBRRA of 2005 (P.L. 109-226), Section 4(c)(3)(D) which directs the Secretary to make recommendations for the expansion of the CBRS when carrying out digital mapping for the remainder of the CBRS. Prior to proposing the addition of new fastland to a System unit, the Service assessed the level of development on-the-ground at the time of the pilot project assessment. The CBRRA of 2000 codified guidelines for what the Secretary shall consider when making recommendations

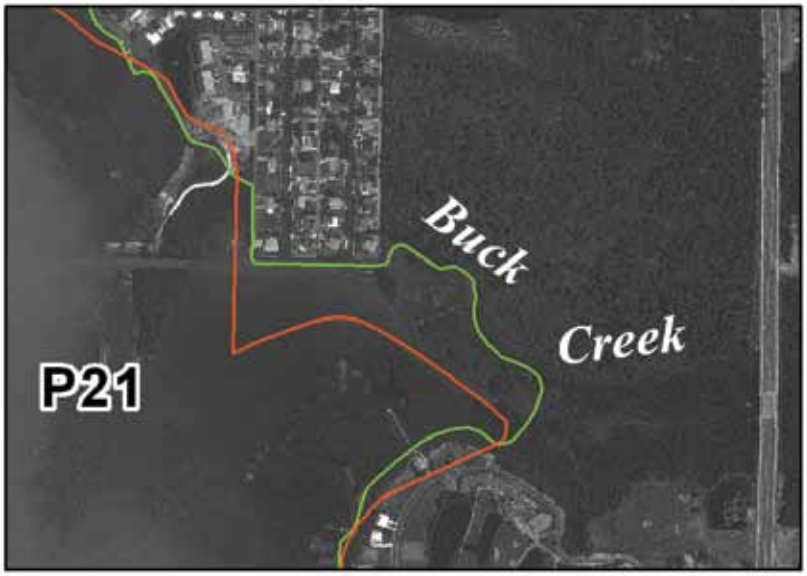
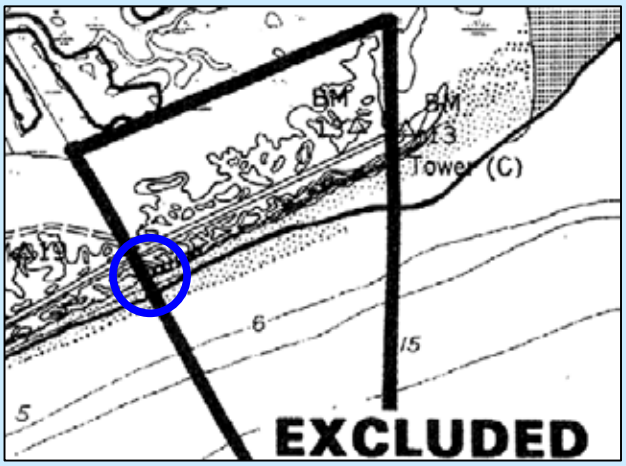


Figure 24. Mapping channels with an undeveloped shoreline and emergent aquatic habitat. The Unit P21 proposed boundary is shown in green and the existing boundary is shown in orange.

Box 4. Alignment with Development Features in Unit L06



Unit L06 is located at the northern end of Topsail Island, North Carolina. The USGS quadrangle on which the Unit L06 boundary was drawn is dated 1980, and therefore does not depict development that occurred after 1980 (left). A row of condominium buildings were built along the beach in 1981. The Service's record indicates that these condominium buildings were intended to be excluded from Unit L06 when it was designated in 1982. The approximate location of the condominium at the end of the row is circled in blue.

When Onslow County digital property parcel data (shown in pink) was overlaid on 1998 aerial imagery, it is evident that the westernmost condominium building (circled in blue) was inadvertently bisected by the Unit L06 boundary (right). Because of this mapping error, the condominium building and several properties located behind the condominium are ineligible for Federal flood insurance. This mapping error most likely occurred as a result of the outdated base map, and the rudimentary cartographic methods that were once used to delineate CBRS boundaries.

Based on the evidence in the record, the proposed boundary of this excluded area (shown in green) follows the western property parcel boundary of the condominium building.

to the Congress regarding the addition of any area to the CBRS and in determining whether, at the time of inclusion of a System unit within the CBRS, a coastal barrier is undeveloped. The Service is not aware of any existing structures located on lands proposed for addition to the 8 System units. Due to resource constraints in carrying out the pilot project, the Service was unable to conduct field visits or infrastructure assessments for the pilot project units, with the exception of Unit L06 where an infrastructure assessment was conducted. Instead, the Service used information in the record, digital property parcel data, date of construction data, and visual cues on the aerial imagery to assess the level of development within the area. The Service anticipates that if any new areas proposed for addition to a System unit contain a full complement of infrastructure, interested parties will provide the necessary documentation during the public review period for the pilot project maps.

- **Reclassification from System Unit to Otherwise Protected Area:** In carrying out the pilot project, the Service noted cases where lands held for conservation or recreation are located within a System unit. In 1982, the CBRA specified that lands held for conservation or recreation were not to be included within the CBRS. In 1990, the CBIA designated lands held for conservation or recreation as OPAs. If a pilot project System unit contained lands held for conservation or recreation, the Service researched the history of the area to determine the date that these lands were first held for conservation or recreation. If the land was first held for conservation or recreation after the System unit had already been established, the proposed pilot project boundaries maintain the land within the System unit.

  If, alternatively, the land was already held for conservation or recreation prior to the designation of the System unit, the affected land is proposed for reclassification from a System unit to an OPA (see Figure 26). Such areas should have been originally included within the CBRS as OPAs, not System units. An exception is made for certain privately owned areas held for conservation or recreation that were intentionally added to the CBRS as System units. The proposed pilot project boundaries maintain within the System unit private lands held for conservation or recreation that were established as System units.

  The proposed boundaries of 7 pilot project System units were adjusted to reclassify certain lands from System unit to OPA status. Four of these pilot project units contain areas that are proposed to be reclassifed as part of adjacent OPAs. The other 3 units contain areas that are proposed to be reclassified as OPAs and they are not adjacent to another OPA, and so the proposed reclassified area is given a new unit number.

- **No Adjustment:** The boundaries of only 3 of the pilot project System units contain no proposed adjustments. This scenario is only applied in cases like that shown in Figure 27 for Unit LA-01 where the coastal barrier islands associated with

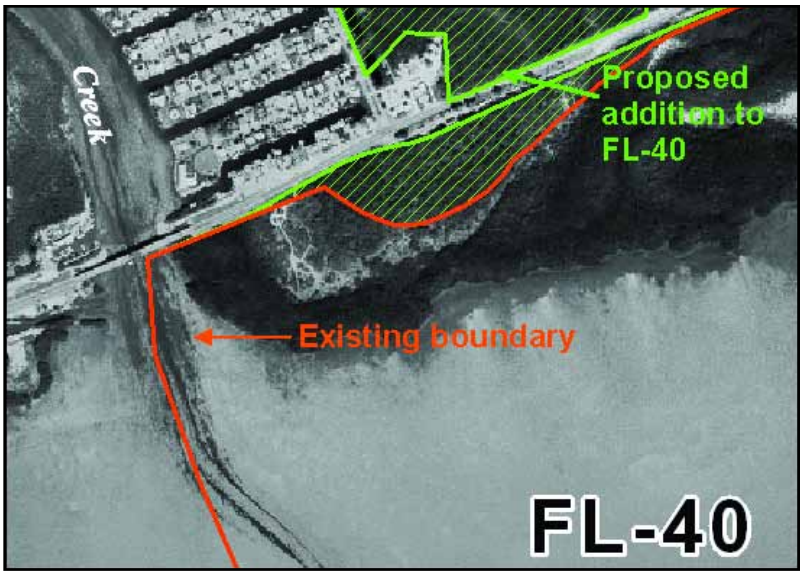


Figure 25. Addition of fastland not currently within the CBRS. The Unit FL-40 boundary is shown in orange and the proposed additions are shown in green.

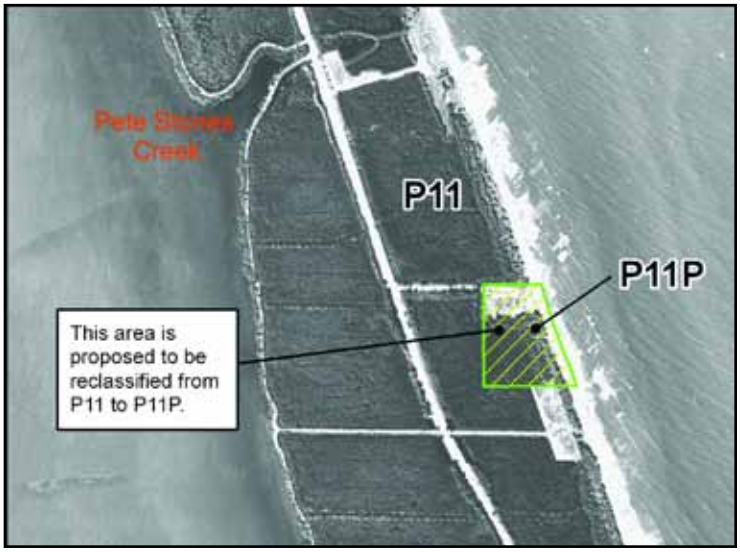


Figure 26. The portion of existing System Unit P11 outlined in green is proposed to be reclassified as OPA P11P because it is land that was held for conservation or recreation before Unit P11 was established.

Table 1. Summary of Proposed System Unit Changes

Pilot Project Unit	*Adjustment to Reflect Geomorphic Change*	*Alignment with Geomorphic Features*	*Addition of Associated Aquatic Habitat*	*Adjustment to Map Channel Boundaries Consistently*	*Alignment with Development Features*	*Alignment with Cultural Features*	*Addition of Fastland not Currently within the CBRS*	*Reclassification from System Unit to OPA*	*No Adjustment*
DE-07*									
H01			x		x	x			
NC-01					x				
NC-06*									
L05	x	x	x			x	x	x (NC-06P)	
L06	x	x	x	x	x				
L07		x	x	x	x		x		
L08	x	x	x		x		x		
L09		x	x	x	x				
M02		x	x		x				
M03		x	x	x	x				
FL-01*									
P04A		x	x		x				
P05		x		x	x			x (P05P)	
P08	x	x	x	x	x		x	x (P08P*)	
P09A	x	x			x	x		x (P09AP*)	
P10A		x	x		x	x	x		
P11		x	x		x			x (P11P*)	
FL-15		x			x				
FL-19*									
P14A				x	x				
FL-39	x	x	x		x				
FL-40		x	x		x		x		
FL-43									x
FL-44	x	x	x	x	x		x		
FL-45	x	x	x		x		x		
FL-46		x	x	x	x				
P17A	x			x	x				
FL-67	x	x	x		x	x			
P21		x	x		x	x		x (P21P)	
P22		x	x		x				
FL-78		x	x	x	x				
FL-81		x			x	x		x (FL-81P)	
FL-82		x			x				
FL-83		x			x				
P26			x						
FL-89	x		x		x				
FL-93*									
FL-94		x			x				
LA-01									x
LA-02									x
S04		x		x					
S05	x								
S06	x			x					
S07	x			x					
TOTAL	14	28	23	14	31	7	8	7	3

* Proposed reclassified unit

the unit have not significantly eroded or prograded, and the existing boundary was found to be appropriately delineated.

Proposed Otherwise Protected Area Changes

- **Alignment with Cultural Features:** The general intent of OPA boundaries is to coincide with the boundaries of the underlying conservation or recreation area. The proposed boundaries of 19 pilot project OPAs were adjusted to align with the underlying conservation or recreation area boundaries. (See Figure 28) Privately held inholdings may be included within the exterior boundaries of the conservation or recreation area, and therefore appropriately included within the boundaries of the OPA. The Service is aware of only one such private inholding located within a pilot project unit (unit FL-64P).

- **Addition of Conservation or Recreation Area:** In carrying out the pilot project, the Service found many cases where lands adjacent to existing CBRS areas are held for conservation or recreation and are not currently within the CBRS. When such areas were found, the appropriate stakeholders were contacted to review and concur with the placement of the conservation or recreation area boundary on the base map. The proposed boundaries of 9 pilot project OPAs were adjusted to add conservation or recreation lands to an existing OPA. This approach is consistent with: (1) recent technical correction laws that have expanded the boundaries of OPAs to include lands held for conservation or recreation that were not originally included within the OPA (e.g. P.L. 109-355 that expanded the Unit FL-95P boundary to include the full extent of Grayton Beach State Park) and (2) the CBRRA of 2005, Section 4(c)(3)(D) which directs the Secretary to make recommendations for the expansion of the CBRS when carrying out digital mapping for the remainder of the CBRS.

Figure 27. Unit LA-01 has no proposed boundary adjustment.

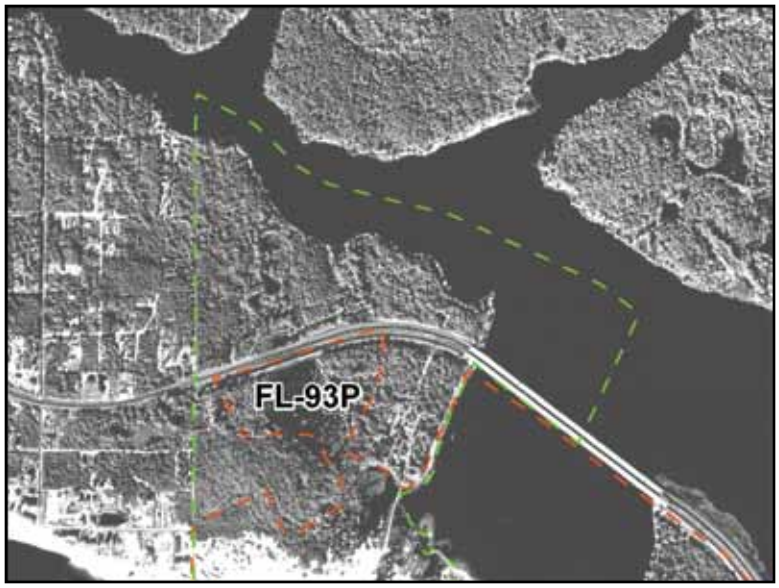


Figure 28. Proposed Unit FL-93P boundary (shown in green) is adjusted to align with conservation or recreation area boundaries. The existing boundary is shown in orange.

Figure 29 illustrates new conservation or recreation lands proposed for inclusion in an OPA.

- **Removal of Private Land:** Most OPA boundaries were adjusted to remove very small portions of private land adjacent to the underlying conservation or recreation area that are not inholdings. These adjustments are consistent with recent technical correction laws which correct mapping errors that negatively impact property owners by removing land that was inadvertently included within the OPA due to the imprecise nature of the existing maps. The boundaries of 9 pilot project OPAs were adjusted to remove larger portions of private land from the OPA because the lands are not private inholding; have never been held for conservation or recreation; and did not meet the CBRA definition of an undeveloped coastal barrier at the time they were included within the CBRS (see Figure 30).

- **Reclassification from Otherwise Protected Area to System Unit:** The proposed boundaries of 10 pilot project OPAs were adjusted to reclassify certain lands from OPA to System unit status. This type of reclassification is proposed in cases where the land in question is adjacent to a conservation or

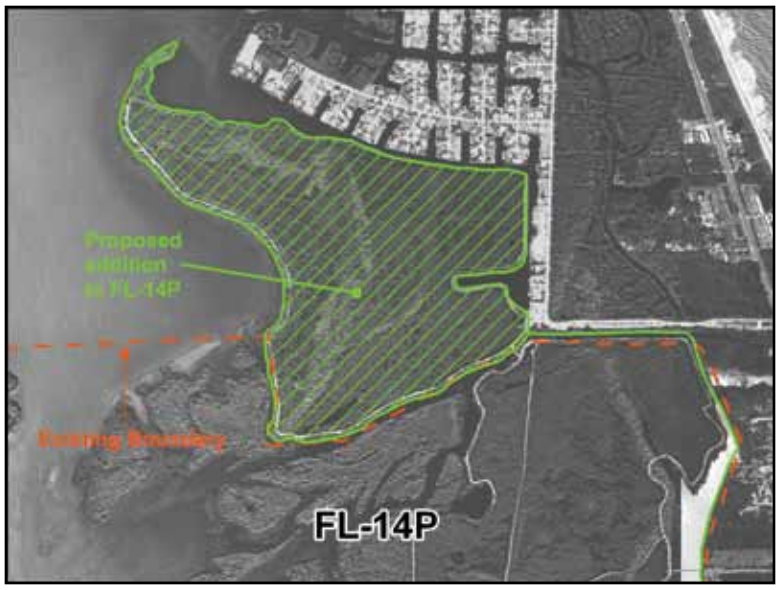


Figure 29. Proposed Unit FL-14P boundary (shown in green) adds lands held by Kings Island Natural Area to the existing OPA.

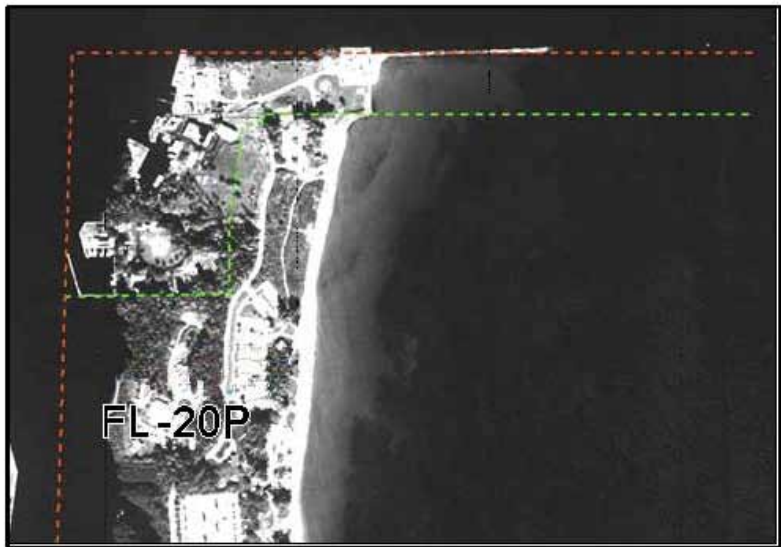


Figure 30. Proposed Unit FL-20P boundary (shown in green) removes private land that was developed at the time the OPA was enacted. The existing boundary is shown in orange.

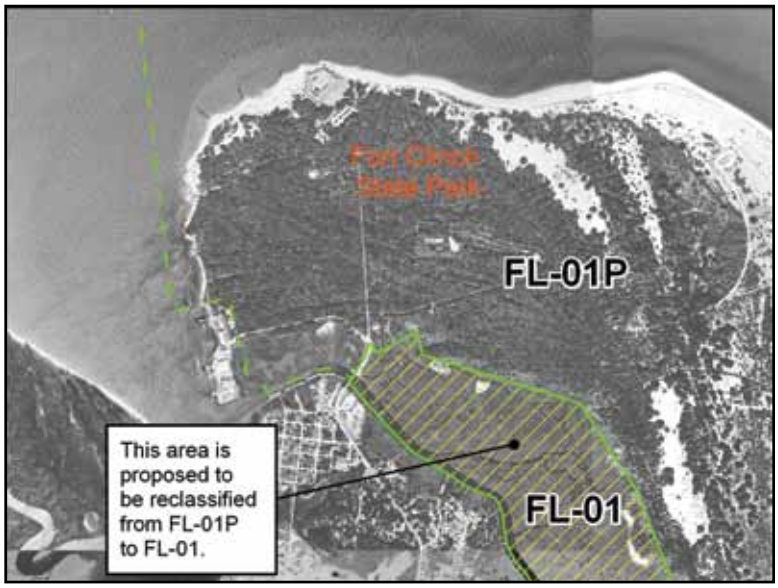


Figure 31. A privately owned, undeveloped piece of land that is within the existing OPA FL-01P is proposed to be reclassified as System Unit FL-01.

recreation area; is not a private inholding; is not held for conservation or recreation; and met the CBRA definition of an undeveloped coastal barrier at the time the area was included within the OPA. Such areas should have been originally included within the CBRS as System units, not OPAs (see Figure 31). Five of the pilot project units contain areas that are proposed to be reclassified as part of adjacent System units. The other five units are not adjacent to another System unit, so the proposed reclassified area is given a new unit number.

- **Addition of new OPAs:** Two of the proposed pilot project OPAs are comprised entirely of land that is currently not within the existing boundaries of a System unit or an OPA. In both cases, the Service found conservation or recreational land in the vicinty of existing CBRS areas while researching the history of those units and the surrounding area. These two areas meet the CBIA definition of an otherwise protected area and are consistent with (1) recent technical correction laws that have expanded the boundaries of OPAs to include lands held for conservation or recreation that were not originally included within the OPA (e.g. DE-03P, NC-07P, FL-95P) and (2) the CBRRA of 2005 (P.L. 109-226), Section 4(c)(3)(D) which directs the Secretary to make recommendations for the expansion of the CBRS when carrying out digital mapping for the remainder of the CBRS.

- **Adjustment to Map Channels Consistently:** Similar to the situation with System unit boundaries that include or are adjacent to channels, OPAs are currently not mapped consistently as they relate to channels. Past notices included in the Federal Register by the Department have included guidance for delineating CBRS boundaries located along channels and other water bodies. In general, this guidance states that if a discernible natural channel or man-made

channel exists in the open water approximately one mile landward of the coastal barrier, the boundary is drawn along the side nearest the coastal barrier.[5] The proposed boundaries of 5 pilot project OPAs were adjusted to map channels within or adjacent to OPAs consistently (see Figure 32). The CBRA's only Federal funding prohibition within OPAs applies to flood insurance. The CBRA's prohibitions on dredging and channel maintenance do not apply to channels located within OPAs. In remapping pilot project OPAs with adjacent channels, the Service applied the following mapping protocols:

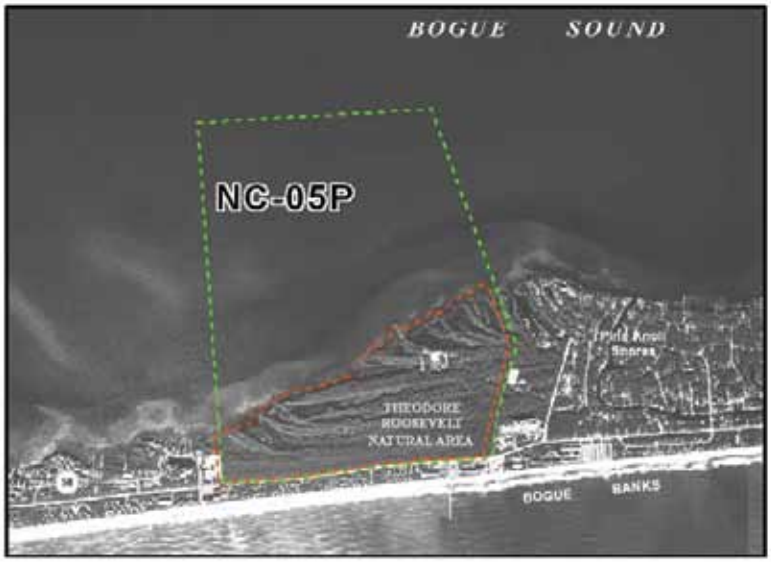


Figure 32. Proposed Unit NC-05P boundary (shown in green) extends to the middle of the channel. The existing boundary is shown in orange.

Shoreline of OPA with no adjacent System unit. If there is no System unit behind a conservation or recreation area separated from the mainland by a channel, the boundary of the OPA was placed at the center of the channel (or one mile from the channel shoreline, whichever was closer to the barrier) to minimize the need for future boundary revisions as a result of shoreline erosion and accretion.

Shoreline of OPA with adjacent System unit. In cases such as the one described above, but in which the OPA is adjacent to a System unit, the landward boundaries of both units were placed to coincide with the shoreline along the channel.

Table 2. Summary of Proposed Otherwise Protected Area Changes

Pilot Project Unit	*Alignment with Cultural Features*	*Addition of Conservation or Recreation Area*	*Removal of Private Land*	*Reclassification from OPA to System Unit*	*Addition of New OPA*	*Adjustment to Map Channels Consistently*
DE-07P	x	x	x	x (DE-07*)		
NC-05P	x		x			x
NC-06P	x	x		x (NC-06*, L05)		
FL-01P	x	x		x (FL-01*)		x
P05P	x			x (P05)		
P08P*						
FL-13P	x		x			
P09AP*						
FL-14P	x	x		x (P10A)		
P11P*						
FL-16P	x					x
FL-17P	x		x			
FL-18P	x		x			
FL-19P	x	x		x (FL-19*)		
FL-20P	x		x			
FL-64P	x	x	x			
FL-67P*					x	
P21P	x	x		x (P21)		
FL-72P	x		x			
FL-73P	x	x		x (FL-78)		
FL-78P*					x	
FL-80P						x
FL-81P	x			x (FL-81)		x
FL-85P	x					
FL-93P	x	x	x	x (FL-93*)		
TOTAL	19	9	9	10	2	5

*Proposed reclassified unit

Proposed Acreage and Shoreline Changes

The CBRRA of 2000 requires that this report detail the extent to which the proposed boundaries on the pilot project maps differ from the boundaries on the existing maps. The proposed pilot project boundary changes are described and depicted in Appendix D, which includes pilot project unit summaries and maps. Table 3 summarizes the proposed pilot project acreage changes. If enacted, the pilot project maps will result in a total net addition of approximately 23,840 acres to the CBRS (mainly associated aquatic habitat). The 363 acres of fastland proposed for removal from the CBRS are generally private lands that will be made eligible for Federal flood insurance and other Federal subsidies if Congress were to enact the pilot project maps. Of the total 1,625 acres of fastland proposed for addition to the CBRS, 618 acres are generally undeveloped private lands that will be made ineligible for Federal flood insurance and other Federal subsidies if Congress enacts the pilot project maps.

The net changes were quantified by assessing the differences in acreage and shoreline between the existing and proposed boundaries. The total acreage is comprised of the fastland and associated aquatic habitat which includes open water. For purposes of this pilot project, fastland was calculated by interpretation of infrared aerial imagery along with consultation of the Service's NWI data. The associated aquatic habitat acreage numbers include open water landward of the coastal barrier but do not include open water seaward of the shoreline. For the purpose of

associated aquatic habitat acreage calculations, all units were artificially closed at the seaward shoreline before acreage calculations were performed. The CBRA specifies that System units extend to the 30 foot bathymetric contour. Appendix E provides the acreage and shoreline information for each of the pilot project units.

Background Records

A comprehensive background record was created for each unit in the pilot project. These records contain the historical background for each unit, including previously enacted maps, documents referenced during the boundary intent assessment phase, maps showing different data types used to assess boundary intent, signed maps and statements of concurrence on property boundaries, correspondence with stakeholders, and any other documentation that describes the placement of the existing and the proposed boundaries. These records are maintained by the Service and, upon request, may be viewed by the public at the Service's headquarters office.

Table 3. Summary of Proposed Acreage Changes

	Fastland acres		*Associated Aquatic Habitat acres*		*Total acres*	
	System Units	*OPAs*	*System Units*	*OPAs*	*System Units*	*OPAs*
Addition to the CBRS	617.9	1,006.8	21,214.0	2,152.0	21,831.9	3,158.8
	Total: 1,624.7		Total: 23,366.0		Total: 24,990.7	
Deletion from the CBRS	254.0	108.8	691.9	95.6	945.9	204.4
	Total: 362.8		Total: 787.5		Total: 1,150.3	
Reclassification from System unit to OPA	-477.9	477.9	-285.8	285.8	-763.7	763.7
	Total: 477.9		Total: 285.8		Total: 763.7	
Reclassification from OPA to System unit	330.4	-330.4	12,187.6	-12,187.6	12,518.0	-12,518.0
	Total: 330.4		Total: 12,187.6		Total: 12,518.0	
Net Change	216.4	1,045.5	32,423.9	-9,845.4	32,640.3	-8799.9
	Total: 1,261.9		Total: 22,578.5		Total: 23,840.4	

1 16 U.S.C. 3503(c)

2 50 FR 8702

3 47 FR 35696, 50 FR 8701, 57 FR 14846

4 From a memorandum dated July 27, 1982, from the chairman of the Coastal Barriers Task Force to the Secretary of the Department of Interior regarding Unit P08:

"In general, side boundaries of portions of coastal barriers should be more or less perpendicular to the ocean shoreline; however, for an otherwise protected area, the side boundary is the property line of the protected area. For developed areas, the side boundary is placed immediately adjacent to the cluster of structures or the area with a full complement of infrastructure indicating the end of the developed portion of the coastal barrier. Such a "break-in-development" is usually quite evident even if a few scattered structures are located on the undeveloped side of the boundary line. Once the location of the "break-in-development" is established, there are several circumstances where the general "perpendicular boundary" rule is modified. It is desirable that the boundary follow known property lines which, in many cases, may not be perpendicular to the shoreline."

5 50 FR 8701

CHAPTER 6: COSTS, NEXT STEPS, AND CONCLUSIONS

Costs

The CBRRA of 2000 requires that this report describe the amount of funding necessary to complete digital mapping of the entire CBRS. The Service's cost estimate below is based on costs incurred and lessons learned during the course of the pilot project, costs associated with creating draft digital maps in response to recent technical correction legislation, and assumptions made regarding the anticipated level of effort to complete digital mapping for the remainder of the CBRS.

Pilot Project Costs

The Service spent, on average, $18,000 per unit to create draft digital maps for the pilot project, totaling approximately $1.1 million for all pilot project maps. The pilot project costs incurred to-date include:

(1) Procuring the necessary data such as aerial imagery to serve as the new base map, geomorphic data, development data, and conservation and recreation area boundary data.
(2) Digitizing the existing boundaries and establishing horizontal control of the existing CBRS maps.
(3) Assessing all existing boundaries to determine the intent of the boundaries with respect to geomorphic, development, and cultural features.
(4) Compiling and validating conservation and recreation area boundaries with appropriate stakeholders.
(5) Adjusting the existing boundaries to create proposed boundaries using objective criteria and mapping protocols.
(6) Calculating the acreage and shoreline associated with the existing and proposed boundaries.
(7) Creating background records to document the placement of the existing and proposed boundaries.

The pilot project costs identified above do not include the costs associated with finalizing the pilot project maps by conducting a public review of the draft maps, making adjustments to the boundary lines as appropriate, and submitting final recommended maps to Congress for its consideration and adoption.

Costs to Remap the Remainder of the CBRS

The Service estimates that it will cost, on average, $18,000 per unit to create draft digital maps for the remainder of the CBRS, or up to $17 million to comprehensively modernize the remainder of the CBRS maps. We anticipate this to be a long-term project in order to accomplish it with the results we seek. The Service will apply the lessons learned during the course of the pilot project and anticipates economies of scale will be realized in remapping the remainder of the CBRS (consisting of approximately 800 CBRS areas). Although the Service will employ the same general methodology as used in the pilot project, there are a few unknown factors that will affect the costs associated with remapping the remainder of the CBRS, including:

(1) The amount of new high quality aerial imagery that may need to be procured. The Service will, when necessary and practicable, procure new aerial imagery in cases where imagery available within the public domain is not recent enough or high enough quality for CBRS mapping.
(2) The field validation that may need to be conducted on the ground. The Service will, when necessary and practicable, conduct field validation to help determine development status on the ground and to validate the placement of boundaries where aerial imagery does not provide a sufficient level of detail.
(3) The number of public comments that may require additional research and boundary adjustments before final recommended maps are presented to Congress.
(4) The number of proposed new additions that may need to be researched and mapped.

Contingencies to address these four factors are accounted for in the estimate to comprehensively modernize the remainder of the CBRS.

Next Steps

The Administration supports the CBRA and modernization of the entire CBRS using digital technology. CBRS map modernization is consistent with many Administration goals and initiatives, including the President's Management Agenda initiative of expanded electronic government and the U.S. Ocean Action Plan initiative to coordinate ocean and coastal mapping activities. Moving forward with CBRS map modernization, the Service will seek to continue coordination with our Federal partners in order to reduce duplicative efforts. The Service has identified three general steps necessary to finalize the pilot project maps and complete digital mapping for the remainder of the CBRS. The following steps are consistent with directives contained in the CBRRA of 2005:

(1) **Public Review of Pilot Project Maps:** The CBRRA of 2005 directs the Secretary to provide an opportunity for the submission of public comments on the draft pilot project maps, and to consider those comments before presenting final recommended digital maps to Congress. The CBRA's prohibitions have ramifications on private property owners, and affect decisions on where and how they develop. Public review was conducted prior to Congressional enactment of the CBRS maps in 1982 and 1990. The Service anticipates there will be significant public interest associated with the draft maps

presented in this report. If resources are made available, the Service will conduct a public review of the draft maps presented in this report, as directed by P.L. 109-226.

(2) **Submit Final Recommended Pilot Project Maps to Congress:** The CBRRA of 2005 directs the Secretary, after considering any public comments received, to submit final recommended pilot project maps to Congress and provide recommendations for the adoption of the maps by Congress. If resources are made available, the Service will submit a second report to the Senate Environment and Public Works Committee and House Natural Resources Committee, as directed by P.L. 109-226, that includes: (1) a description of the extent to which the boundary lines on the digital maps differ from the boundary lines on the original maps; (2) a summary of the comments received from the Governors of the States, other government officials, and the public regarding the digital maps; (3) recommendations for the adoption of the digital maps by Congress; (4) recommendations for expansion of the CBRS; (5) a summary and update on the implementation and use of the digital maps created under the pilot project; and (6) a description of the feasibility of, and the amount of funding necessary for making all of the CBRS maps available to the public in digital format, and facilitating the integration of digital CBRS boundaries into Federal, State, and local planning tools.

(3) **Create Digital Maps for the Remainder of the CBRS:** The CBRRA of 2005 directs the Secretary to complete digital maps for the entire CBRS. If resources are made available, the Service will complete draft digital maps for the entire CBRS using the lessons learned and protocols developed during the course of the pilot project, conduct a public review of those maps, and present Congress with final recommended maps for its consideration and adoption.

Conclusions

Four major hurricanes, Dennis, Katrina, Rita, and Wilma, made landfall in the United States in 2005. The NFIP is expected to pay at least $23 billion in Federal flood insurance claims related to the 2005 hurricane season.[1] Hurricane Katrina alone caused over $80 billion in damages. It was also the deadliest hurricane season since 1928, claiming more than 1,300 lives. Data on sea surface temperatures indicates that we should expect active hurricane seasons with a higher frequency and intensity of hurricanes for the next two to three decades.[2] With the possible increase in the number and intensity of hurricanes, scientists, elected officials, planning officials, and citizens are questioning why and how development occurs in hazard-prone areas along our Nation's coasts.

Over the past two decades, the CBRA has helped to keep people out of harm's way, protect important coastal habitat, and save taxpayers' money. Development can still occur provided that private developers or other non-Federal parties bear the full cost. In this sense, the law has been successful, but the Service's effectiveness in implementing the law is limited by the outdated maps used to administer the program.

Lessons learned from years of CBRA administration and the successful completion of the pilot project have given the Service valuable insight into the limitations of the existing CBRS maps and the need for map modernization. We have developed a process and protocols to remap the entire CBRS with a one time investment that will address the challenges associated with the existing set of maps. We have determined the data needs and availability for this effort. Most importantly, we have previewed the enormous leap in efficiency and data-sharing capabilities that digital maps will bring to the CBRA program. Modernized, digital maps will allow the Service to respond more quickly to requests for CBRA property determinations and consistency consultations. The Service's partners and customers who sometimes wait several months for a determination of whether their property or proposed project is within the CBRS will, in most cases, be able to determine within minutes whether their property or project is within the CBRS. Property owners whose property has erroneously been included in the CBRS due to the antiquated cartographic techniques of the past will be granted relief. Modernized CBRS maps will allow for more efficient CBRA consultations following a hurricane, allowing disaster assistance to reach the appropriate people faster. The increased ability to distribute CBRS information will make it easy to identify areas where CBRS areas overlap with other conservation efforts, and where existing conservation efforts can be expanded to take advantage of the CBRA's prohibitions. The Service will also be able to integrate CBRS boundaries with Federal, State, and local GIS for planning and informational purposes. Increased public awareness of the CBRA will help reduce the number of property owners who are unaware of the CBRA's prohibitions when making investment decisions. Above all, modernization of the CBRS maps will preserve the long-term integrity of the CBRS and greatly improve the efficiency and effectiveness of the program, allowing the CBRA to accomplish even more in its goals to keep people out of harm's way, save taxpayer dollars, and conserve natural resources.

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1 King, Rawle O. National Flood Insurance Program: Treasury Borrowing in the Aftermath of Hurricane Katrina. Congressional Research Service, The Library of Congress. June 6, 2006.

2 Webster, P.J., G. J. Holland, J.A. Curry, H.-R.Chang. "Changes in Tropical Cyclone Number, Duration, and Intensity in a Warming Environment," Science, Vol. 309, No. 5742, September 2005.

APPENDIX A: GLOSSARY

Accretion: An accumulation of sediments along a shoreline.

Associated aquatic habitat: Aquatic habitat associated with coastal barriers, including the adjacent wetlands, marshes, estuaries, inlets, and nearshore waters.

Bathymetry: The underwater equivalent to topography.

Barrier islands: Coastal barriers completely detached from the mainland. Barrier spits may become barrier islands if their connection to the mainland is severed by creation of a permanent inlet. The barrier island represents a broadened barrier beach, commonly sufficiently above high tide to have dunes, vegetated zones, and wetland areas.

Barrier spits: Coastal barriers that extend into open water and are attached to the mainland at only one end. They can develop into bay barriers if they grow completely across a bay or other aquatic habitat. Alternatively, bay barriers can become spits if an inlet is created.

Bay barriers: Coastal barriers that connect two headlands, and enclose a pond, marsh, or other aquatic habitat. The terms bay mount bar or bay bar are considered to be synonymous.

Coastal Barrier Resources Act of 1982 (CBRA, P.L. 97-348): This law established the John H. Chafee Coastal Barrier Resources System, in which most Federal funding that supports development is prohibited. The three purposes of this law are to limit the loss of human life, conserve natural resources associated with coastal barriers, and save taxpayers' dollars.

Coastal Barrier Improvement Act of 1990 (P.L. 101-591): This law reauthorized the CBRA through fiscal year 1993, made modifications to existing units, added a new type of unit called "otherwise protected areas," and expanded the CBRS to include areas along the Great Lakes, U.S. Virgin Islands, and Puerto Rico.

Coastal Barrier Resources Reauthorization Act of 2000 (P.L. 106-514): This law reauthorized the CBRA through fiscal year 2005, and directed the Secretary of the Interior to conduct a digital mapping pilot project, and report to Congress, and submit to Congress an economic assessment of the CBRS. It also codified the criteria for assessing the development status of a coastal barrier.

Coastal Barrier Resources Reauthorization Act of 2005: (P.L. 109-226): This law reauthorized the CBRA through fiscal year 2010, and directed the Secretary of the Interior to (1) finalize the draft digital maps presented in this report by conducting a public review of the draft maps and presenting a report and the final recommended maps to Congress, and (2) to modernize the remainder of the CBRS maps using digital technology.

John H. Chafee Coastal Barrier Resources System: A system, established by the CBRA of 1982, that consists of the undeveloped coastal barriers and other areas located on the coasts of the United States that are identified and generally depicted on the maps on file with the Secretary of the Interior entitled "John H. Chafee Coastal Barrier Resources System." The CBRS was renamed the "John H. Chafee Coastal Barrier Resources System" by P.L. 106-167 in 1999 to honor the late Senator Chafee. CBRA has been amended several times to replace certain maps with new maps with modified boundaries.

Color Infrared (CIR): Images obtained by satellites and high-altitude aircraft that give engineers and scientists a tool to study landforms, vegetation health patterns, environmental pollution, and other effects of human activities on the planet's surface. Healthy, growing vegetation appears red on color infrared film. Unhealthy or dormant vegetation may appear light red or a light shade of blue-green (cyan).

Digital orthophoto quarter quadrangle (DOQQ): An aerial photo able to differentiate items on the Earth's surface that are as small as one meter in length. The 3.75-minute DOQQ covers one-fourth the area of a 7.5-minute USGS topographic quadrangle map DOQ and is based on the same geographic grid (Universal Transverse Mercator Projection on the North American Datum of 1983).

Digital raster graphic (DRG): A scanned image of a USGS topographic map. The map is geographically referenced to the surface of the Earth.

Fastland: The portion of a coastal barrier between the mean high tide line on the ocean side, and the upper limit of tidal vegetation (or, if such vegetation is not present, the mean high tide line) at the rear of the coastal barrier. For purposes of this pilot project, fastland was calculated by interpretation of infrared aerial imagery along with National Wetlands Inventory data. The Natural Resources Conservation Service's soil data was also used as a

resource to indicate the locations of hydric soils.

5-year review: The CBRA directs the Secretary to conduct, at least once every 5 years, a review of the CBRS maps and make minor and technical modifications to the boundaries of System units as are necessary solely to reflect changes that have occurred in the size or location of any System units as a result of natural forces.

Flood insurance rate maps (FIRM)s: Maps prepared by FEMA that identify floodplain areas, the spatial extent of Special Flood Hazard Areas and other thematic features related to flood risk assessment. The FIRM is the basis for floodplain management, mitigation, and insurance activities of the National Flood Insurance Program.

Geographic Information System (GIS): An organized collection of computer hardware, software, geographic data, and personnel designed to efficiently capture, store, update, manipulate, analyze, and display all forms of geographically referenced information.

Geomorphic: Of or resembling the Earth or its shape or surface configuration.

Horizontal control: Achieved when all points on a map have a geographic reference relative to one of the standard horizontal geographic grids. The most common horizontal grid is latitude - longitude, but other comparable grids are Universal Transverse Mercator and State Plane.

Hydric soil: Soil that formed under conditions of saturation, flooding, or ponding, and is wet for the majority of the year.

Inholding: Developed or undeveloped private tracts of land that are not held for conservation or recreation purposes by their owners, and are contained within the exterior boundaries of the areas held primarily for wildlife refuge, sanctuary, recreation, or natural resource conservation purposes.

Metadata: "Data about data." It describes the content, quality, condition, and other characteristics of data. Metadata are used to organize and maintain investments in data, to provide information to data catalogs and clearinghouses, and to aid data transfers.

Orthorectification: The process of adjusting an aerial photograph to ensure the proper perspective of features in the image relative to their true position on the Earth's surface.

Otherwise protected area (OPA): An undeveloped coastal barrier within the boundaries of an area established under Federal, State, or local law, or held by a qualified organization, primarily for wildlife refuge, sanctuary, recreational, or natural resource conservation purposes.

Planimetric: Indicating only the horizontal positions of features, without regard to elevation, in contrast with a topographic map, which indicates both horizontal and vertical positions.

Prograding: The migration of a shoreline.

Spoil island: An island created using dredged sediments.

System unit: Any undeveloped coastal barrier, or combination of closely-related undeveloped coastal barriers, included within the CBRS established by section 4 of the CBRA.

Tombolos: Coastal barriers that are sand or gravel beaches and connect one or more offshore islands to each other or to the mainland. Coastal barriers of this type occur principally in New York and New England. The terms connecting bar, tie bar, and tying bar are synonymous.

Universal Transverse Mercator: A grid-based method of specifying locations on the surface of the Earth that differs from the traditional method of latitude and longitude in several respects.

USGS topographic quadrangle (quad): A four sided map produced by the U.S. Geologic Survey that is bounded by parallels of latitude and meridians of longitude and displays elevation contours, physical features, and cultural features.

APPENDIX B: CBRS DATA NEEDS AND AVAILABILITY

Table 4. CBRS Data Needs and Availability

Data Type	*Data Source*	*Data Availability*	*Cooperative Agreement Necessary*	*Advantages*	*Disadvantages*
Digital Raster Graphic (DRG)	USGS, State and local governments, and private vendors	DRGs are scanned, georeferenced USGS topographic quadrangle series maps. They are available from several different sources and cover the entire U.S. The USGS charges for this data but DRGs can usually be acquired from other sources at no charge.	No	USGS quadrangles were used as the existing CBRS base maps. Because DRGs are also based on USGS quadrangles, they are the best available tool to establish horizontal control of the digital CBRS boundaries.	Quality of DRGs produced by private vendors may vary.
Aerial Photography	National Digital Orthophoto Program (NDOP) www.ndop.gov	NDOP is a partnership between Federal agencies and State, local, and private organizations to provide nationwide coverage of orthophotos. Raw images are taken from a variety of sources including the National Agriculture Imagery Program and National Aerial Photography Program programs, and are processed to produce DOQQs	No	Images are cloud-free, high resolution, orthorectified, and meet strict USGS National Mapping Program standards.	Some areas have not been updated in 8 to 10 years.
	NOAA www.ngs.noaa.gov	NOAA has a variety of imagery sources available. It is also possible to contract with NOAA to have aerial photography flown and processed.	No	NOAA coordinates the creation of any new imagery, including the subsequent processing and quality control.	Not available for all CBRS areas.
	State and local governments	Many State and local governments offer imagery on their websites or upon request. The type and quality of the imagery varies among sources.	Not generally needed. Some State and local governments require a data licensing agreement before distributing their data to prohibit commercial use of the data.	State and local data layers (i.e. parcel data) are often adjusted to fit with respective State and local aerial imagery.	Accuracy and availability of data varies among State and local sources.
	Private vendors	Private vendors sell high-resolution aerial imagery for areas within the U.S.	Contractual agreement needed.	Allows flexibility of the location, time, and resolution of the imagery.	This data is often very expensive to procure.

Table 4. CBRS Data Needs and Availability (continued)

Data Type		*Data Source*	*Data Availability*	*Cooperative Agreement Necessary*	*Advantages*	*Disadvantages*
Geomorphic Data	Wetlands Data	Fish and Wildlife Service's National Wetlands Inventory (NWI) www.fws.gov/nwi	NWI data provides information on the characteristics, extent, and status of the Nation's wetlands and deepwater habitats and other wildlife habitats. Wetlands data is available for download on the Service's NWI website.	No	Wetlands data are available at no cost for all CBRS areas.	Most NWI maps were produced using photography from the 1980's. Less than 5% of the Nation is mapped with aerial photography flown after 1990.
	Soils Data	USDA www.nrcs.usda.gov	Hydric soils data are available for download at the USDA Natural Resources Conservation Service Spatial Data Gateway.	No	Hydric soils data are available at no cost for most CBRS areas.	Hydric soils data is not updated frequently.
	Other Geomorphic Data	State GIS websites	Many States have GIS websites, often affiliated with State universities, that sometimes offer State-specific geomorphic data.	Not generally needed.	Mangrove and hydric soils data are sometimes available.	Accuracy and availability of data varies among States.
Development Data	Digital Property Parcel Data	Local governments	Some local governments allow digital property parcel data to be downloaded off their websites. Others provide the data upon request at no cost, or for a fee that may be waived for the Service. However, many counties do not have digital property parcel data available.	Not generally needed. Many local governments require a data licensing agreement before distributing their data to prohibit commercial use of the data.	Allows the overlay of property boundaries onto aerial imagery used to map CBRS boundaries. Also provides property ownership information.	Accuracy and availability of data vary among local governments.
	Date of Construction Data	Local governments	Date of construction data is sometimes available from the local property appraiser, tax assessor, or GIS department. This type of data is often located within the digital property parcel data metadata. If not, online tax data may be procured from the local government. Some local governments charge a fee for this data or don't provide this service at all.	Not generally needed.	Helps indicate whether certain areas were developed at the time a CBRS area was designated.	Accuracy and availability of data vary among local governments.
	Infrastructure Data	State and local governments, utilities, and other stakeholders	Infrastructure data can be difficult to obtain and is not available in all areas.	No	Helps indicate whether certain areas were developed at the time a CBRS area was designated.	Difficult to obtain documentation of a full complement of infrastructure.

Table 4. CBRS Data Needs and Availability (continued)

Data Type	*Data Source*	*Data Availability*	*Cooperative Agreement Necessary*	*Advantages*	*Disadvantages*
Conservation/Recreation Area Boundary Data	Fish and Wildlife Service	The Service has survey data for national wildlife refuges.	No	Identifies refuge boundaries.	Not available for all refuges.
	NOAA Marine Protected Areas website www.mpa.gov	Boundary data for national wildlife refuges, national parks, National Marine Fisheries Service managed areas, national marine sanctuaries, national estuarine research reserves, and some State parks is available.	No	Identifies conservation and recreation area boundaries.	Most of these areas are located offshore.
	State governments	Most States keep digital records, or have GIS websites, that depict the boundaries of State-owned or protected lands.	Not generally needed.	Identifies conservation and recreation area boundaries.	Not available for all states.
	Local governments	Some local governments allow digital property parcel data to be downloaded off their websites. Others provide the data upon request at no cost, or for a fee that may be waived for the Service. However, many local governments do not have digital property parcel data available. Local governments often provide survey data for county-managed parks or other protected lands.	Not generally needed. Many local governments require a data licensing agreement before distributing their data to prohibit commercial use of the data.	Allows the overlay of property boundaries onto aerial imagery used to map CBRS boundaries. Also provides property ownership information.	Accuracy and availability of data vary among local governments.
	Universities	Boundary data for conservation and recreation areas are available from some university websites, or upon request from those collecting and maintaining the data.	No	Identifies conservation and recreation area boundaries, including those that are privately owned.	Not available for all CBRS areas.

APPENDIX C: SUMMARY OF HISTORICAL CHANGES TO THE CBRS

Table 5. Summary of Historical Changes to the CBRS.
This table summarizes the legislative and administrative changes that have been made to the CBRS from 1982 to 2006.

Date	*Affected Unit(s)*	*Public Law*	*Federal Register Notice*	*Additional Comments*
10/18/1982	185 units were designated. See Federal Register for full list of affected units.	Coastal Barrier Resources Act (P.L. 97-348)	47 FR 52388	CBRA established the CBRS as referred to and adopted by Congress, and prohibits the expenditure of most new Federal financial assistance within the units of the CBRS.
5/4/1989	K03	P.L. 97-348 Sec. 4(c)(3)	54 FR 19248	This unit was modified administratively as part of the Service's 5-year review to account for geomorphic change. The authority to make this change is provided under Section 4(c)(3) of CBRA.
11/16/1990	Almost all units created in 1982 were expanded. New CBRS units and OPAs were designated along the Great Lakes, Atlantic, and Gulf coasts, as well as in the Florida Keys, Puerto Rico and the U.S. Virgin Islands.	Coastal Barrier Improvement Act of 1990 (P.L. 101-591)	56 FR 26304	CBIA amended CBRA to modify existing units and expand the CBRS.
10/23/1992	NC-01 (NC-01P), NC-05P, VA-60, VA-60P	P.L. 102-440	58 FR 60288	Section 303 of P.L. 102-440 modified NC-01P to only include lands owned by the Audubon Society and the unit was redesigned as NC-01.
11/15/1993	114 units were modified. See Federal Register for full list of affected units.	P.L. 101-591 Sec. 4(e)	58 FR 60288	Changes made under Section 4(e) of P.L. 101-591 went into effect. This section was established to allow for minor and technical boundary modifications subsequent to the passage of the CBIA. Several of the units were revised for reasons other than boundary modifications, such as change in map symbology.
11/2/1994	NY-75, VA-62P, FL-05P, P11A, FL-15, FL-36P, P17, P17A, P18P, P19P, FL-72P, P31P, FL-95P, AL-01P, MI-21	P.L. 103-461	60 FR 10268	
5/24/1996	NY-59P	P.L. 104-148	62 FR 19125	
10/9/1996	SC-01	P.L. 104-265	62 FR 19125	

Table 5. Summary of Historical Changes to the CBRS. (continued)

Date	*Affected Unit(s)*	*Public Law*	*Federal Register Notice*	*Additional Comments*
11/12/1996	P05, P05A, P10, P11, P11A, P18, P25, P32, P32P	P.L. 104-333		Changes made by P.L. 104-333 were later invalidated by the U.S. Federal District Court of DC.
2/24/1997	ME-17, ME-18, MA-03, C01B, MA-20P, MA-24, C28, C31, D02B, NY-04P, NY-50, F10, NJ-09, MD-03, MD-37P, MD-38, VA-09, VA-23, VA-36, L07, L09, P16, P17, FL-89, FL-99, FL-101, Q01A, VI-07		62 FR 8258	These units were modified administratively as part of the Service's 5-year review to account for geomorphic change. The authority to make these changes is provided under Section 4(c)(3) of CBRA.
3/5/1998	P05, P05A, P10, P11, P11A, P18, P25, P32, P32P			Changes made by P.L. 104-333 were invalidated by the U.S. Federal District Court of DC.
10/21/1998	P05, P05A, P10, P11, P11A, P18, P25, P32, P32P, FL-35, FL-35P, SC-03, M09	P.L. 105-277	64 FR 41940	P.L. 105-277 reinstated changes made by P.L. 104-333 and revised units FL-35, FL-35P, and SC-03.
11/29/1999	L03, NC-03P	P.L. 106-116	65 FR 17671	
12/6/1999	DE-03P	P.L. 106-128	65 FR 17671	
10/19/2000	NC-01	P.L. 106-332	66 FR 10735	
10/27/2000	P19, P19P	P.L. 106-360	66 FR 10734	
2/20/2003	VA-60P	P.L. 108-7	68 FR 38087	
12/1/2003	T07, T07P	P.L. 108-138	72 FR 54278	
10/18/2004	NC-07P	P.L. 108-339	72 FR 54278	
10/30/2004	P25	P.L. 108-380	72 FR 54278	
10/16/2006	GA-06P	P.L. 109-354	72 FR 54278	
10/16/2006	FL-95P, FL-96	P.L. 109-355	72 FR 54278	

APPENDIX D: PILOT PROJECT UNIT SUMMARIES AND MAPS

This appendix contains the maps of the 70 pilot project units as well as a summary of the proposed changes for each of the units. The pilot project maps depict a total of 70 John H. Chafee Coastal Barrier Resources System (CBRS) areas, which include 60 existing CBRS areas, eight units that are proposed for reclassification from System unit to otherwise protected area (OPA) status or vice-versa, and two proposed new OPA units comprised entirely of areas currently not within the CBRS.

Unit Summaries

The unit summaries in this appendix describe the proposed changes to the unit boundaries and the associated acreage and shoreline mile changes. The U.S. Fish and Wildlife Service (Service) documented the proposed boundary adjustments in a detailed background record created for each pilot project unit. The records are available for review at the Service's headquarters upon request.

The summaries in this appendix contain the following information for each of the pilot project units:

- Type of Unit: Indicates whether the CBRS area is a System unit or an OPA.
- Location of Unit: Describes the general location of the CBRS area with respect to nearby cities. A small locator map also illustrates the general unit location.
- Congressional District: Provides the Congressional District number(s) that the CBRS area is located within.
- Establishment of Unit: Provides the public law number and date on which the CBRS area was first established.
- Current CBRS Status: Indicates whether any part of a new CBRS area is currently within an existing CBRS area (for proposed new units only).
- Historical Changes to Unit: Provides a history of changes (if any) to the CBRS area.
- Underlying Conservation/ Recreation Area(s) in OPA: Lists all underlying conservation area(s) within the OPA (for OPAs only).
- System Unit Criteria: Describes how the area proposed for reclassification or addition meets the Coastal Barrier Resources Act (CBRA) System unit criteria.
- Otherwise Protected Area Criteria: Describes how the area proposed for reclassification or addition meets the CBRA otherwise protected area criteria.
- Existing Boundary Description: Describes the existing CBRS boundary location with respect to the existing and new CBRS base map.
- Proposed Changes to Boundary: Describes the proposed changes to the existing CBRS boundary.
- Proposed Boundaries: Describes the boundaries of the proposed new CBRS area.
- Additional Comments: Provides any additional information about the CBRS area and the proposed boundary adjustments.
- Acreage, Shoreline, and Structure Table: Provides acreage and shoreline mile information and structures affected by the proposed boundaries.

Draft Maps

The draft maps contained in this Appendix are reduced versions of the proposed pilot project maps. Because the maps presented in this report are reduced in size by approximately 70 percent, the legibility of the maps is significantly reduced. On several maps in this Appendix, the CBRS area is enlarged to enable readers to see the CBRS boundaries that are visible on the full size maps. These draft maps are available for download at the Service's website: http://www.fws.gov/habitatconservation/coastal_barrier.html. Full size (25" x 32") versions of these maps may be viewed by the public, upon request, in the Service's headquarters office.

The existing and proposed CBRS boundaries are delineated on the maps in this Appendix as follows:

- Existing Boundary: The existing boundary is shown as a solid orange line for System units and a dashed orange line for OPAs. This boundary was digitized from the existing CBRS paper map, horizontally-controlled, and superimposed on aerial photography used as the new digital base map.
- Proposed Boundary: The proposed boundary is shown as a solid green line for System units and a dashed green line for OPAs. This boundary represents the Service's recommendation for the boundary placement based on the CBRA criteria and objective CBRS mapping protocols. Areas proposed for addition, deletion, or reclassification from a System unit to an OPA or vice versa, are identified and annotated on the draft maps.

Where System unit (solid) and OPA (dashed) boundaries coincide due to the units being contiguous, only the System unit boundary lines appear on the map.

Where existing (orange) and proposed (green) boundaries coincide, only the existing boundary lines appear on the map.

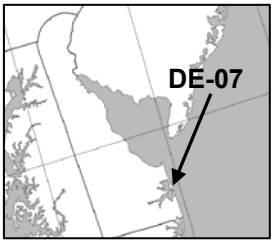
The following table provides the page number for each unit summary and corresponding draft map in this Appendix.

Unit	County/Parish	Page Number	
		Unit Summary	Draft Map(s)
Delaware			
DE-07	Sussex	D3	D6
DE-07P	Sussex	D4	D6
H01	Sussex	D5	D6
North Carolina			
NC-01	Currituck, Dare	D7	D8
NC-05P	Carteret	D9	D10
NC-06	Onslow	D11	D15, D16
NC-06P	Onslow, Carteret	D12	D15, D16
L05	Onslow	D13	D16
L06	Onslow	D14	D17, D18
L07	Pender, New Hanover	D19	D20
L08	New Hanover	D21	D23
L09	New Hanover	D22	D23,D24
South Carolina			
M02	Georgetown	D25	D27
M03	Georgetown	D26	D27
Florida			
FL-01	Nassau	D28	D30
FL-01P	Nassau	D29	D30
P04A	St. Johns	D31	D34
P05	St. Johns	D32	D34
P05P	St. Johns	D33	D34
P08	Volusia	D35	D37
P08P	Volusia	D36	D37
FL-13P	Brevard	D38	D41
P09A	Brevard	D39	D41
P09AP	Brevard	D40	D41
P10A	Indian River, St. Lucie	D42	D47, D48
FL-14P	St. Lucie	D43	D47, D48
P11	St. Lucie	D44, D45	D48, D49
P11P	St. Lucie	D46	D48
FL-15	Martin, Palm Beach	D50	D53
FL-16P	Palm Beach	D51	D53
FL-17P	Palm Beach	D52	D53
FL-18P	Palm Beach	D54	D55
FL-19	Broward	D56	D58
FL-19P	Broward	D57	D58

Unit	County/Parish	Page Number	
		Unit Summary	Draft Map(s)
Florida (cont'd)			
FL-20P	Broward	D59	D61
P14A	Broward	D60	D61
FL-39	Monroe	D62	D64
FL-40	Monroe	D63	D64
FL-43	Monroe	D65	D68
FL-44	Monroe	D66	D68
FL-45	Monroe	D67	D68
FL-46	Monroe	D69	D70
FL-64P	Collier	D71	D72
P17A	Lee	D73	D77
FL-67	Lee	D74, D75	D77
FL-67P	Lee	D76	D77
P21	Charlotte	D78, D79	D81
P21P	Charlotte	D80	D81
P22	Sarasota	D82	D83
FL-72P	Sarasota	D84	D85
FL-73P	Manatee	D86	D90
FL-78	Manatee	D87	D90
FL-78P	Manatee	D88	D90
FL-82	Manatee	D89	D90
FL-80P	Manatee	D91	D94
FL-81	Hillsborough	D92	D94
FL-81P	Hillsborough	D93	D94
FL-83	Hillsborough	D95	D96
FL-85P	Pinellas	D97	D98
P26	Dixie	D99	D100
FL-89	Franklin	D101	D102
FL-93	Bay	D103	D105
FL-93P	Bay	D104	D105
FL-94	Walton	D106	D107
Louisiana			
LA-01	St. Bernard	D108	D109
LA-02	St. Bernard	D110	D111
S04	Lafourche	D112	D114, D115
S05	Terrebonne, Lafourche	D113	D115 - D117
S06	Terrebonne	D118	D119 - D121
S07	Terrebonne, St. Mary	D122	D123 - D126

John H. Chafee Coastal Barrier Resources System Unit DE-07, Delaware Seashore, Delaware

Type of Unit: Proposed new System unit
Location of Unit: South of Rehoboth Beach, in Sussex County
Congressional District: At Large
Current CBRS Status: Part of the proposed new System unit DE-07 is within existing otherwise protected area (OPA) Unit DE-07P. The remainder of the proposed new unit is currently not within the John H. Chafee Coastal Barrier Resources System (CBRS).
System Unit Criteria: Areas of proposed new Unit DE-07 that are currently within Unit DE-07P met the Coastal Barrier Resources Act (CBRA) definition and criteria of an undeveloped coastal barrier at the time they were first included within the CBRS in 1990. Areas of proposed new Unit DE-07 that are currently not within the CBRS currently meet the CBRA definition and criteria of an undeveloped coastal barrier. The U.S. Fish and Wildlife Service is not aware of the existence of a full complement of infrastructure in this area at the time the area was first included within the CBRS.
Proposed Boundaries: The northern boundary of the proposed new unit crosses the barrier spit north of the Delaware Seashore State Park boundary and is adjusted to exclude from the CBRS a row of properties where development predates the OPA designation. The boundary follows this line out into Rehoboth Bay and turns south to mirror the current western boundary of Unit DE-07P. It is slightly adjusted to include the entire channel between Long Neck and several small private islands in the bay, and then continues south along the existing OPA boundary to Cedar Neck, where it is adjusted to follow the shoreline more precisely. South of the developed area, the proposed boundary includes private undeveloped wetlands adjacent to the Fresh Pond area of Delaware Seashore State Park, and the entirety of Beach Cove. The eastern boundary follows the landward shoreline of the barrier spit, turning inland onto the spit to include a small tract of developed private property south of the State park which was undeveloped in 1990, and is currently within Unit DE-07P. The remainder of the proposed new System unit boundary is coincident with the proposed Unit DE-07P boundary, with the exception that it is open to the ocean at the inlet.
Additional Comments: The portions of proposed new Unit DE-07 currently within Unit DE-07P are proposed for reclassification because they are not held for conservation or recreation, are not inholdings, and met the CBRA definition of and criteria for an undeveloped coastal barrier at the time they were



established within the OPA. Several areas proposed for reclassification from OPA to System unit status were undeveloped in 1990, according to the CBRA criteria, but are developed now, including: the residential lots immediately north of the State park; South Shores Subdivision (a trailer park in 1990); Zacharias Cove Subdivision (a trailer park in 1990); and Wharton's Cove Subdivision

A U.S. Coast Guard Station is included in the proposed new System unit. Section 6(a)(5) of the Coastal Barrier Improvement Act of 1990 states an exception to the prohibitions on Federal funding for "the construction, operation, maintenance, and rehabilitation of Coast Guard facilities and access thereto."

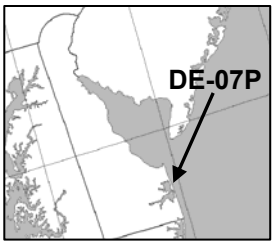
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	0.0	0.0	0.0	0.0	
Added to the CBRS	197.1	0.0	197.1		N/A
Removed from the CBRS	0.0	0.0	0.0		N/A
Reclassified Area	5,183.1	100.0	5,083.1	0.2	
Proposed Unit	5,380.2	100.0	5,280.2	0.5	
Net Change	5,380.2	100.0	5,280.2	0.5	N/A

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count not conducted; no fastland added or removed

John H. Chafee Coastal Barrier Resources System Unit DE-07P, Delaware Seashore, Delaware

Type of Unit: Otherwise protected area (OPA)
Location of Unit: Between Rehoboth Beach and Bethany Beach, in Sussex County
Congressional District: At Large
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to the boundaries of Unit DE-07P since its designation in 1990.
Underlying Conservation/Recreation Area(s) in OPA: Delaware Seashore State Park (established 1965), is owned by the Delaware Department of Natural Resources and Environmental Control.
Existing Boundary Description: The northern boundary of Unit DE-07P crosses the barrier spit through private property north of Delaware Seashore State Park. The western boundary lies in the open water in the bay behind the barrier. The southern boundary follows the eastern shore of a peninsula south of Indian River Inlet and crosses Beach Cove north of the Cotton Patch Hills subdivision. There is an excluded area around a cluster of development on the Atlantic coast south of the inlet.
Proposed Changes to Boundary: The boundaries of Unit DE-07P are aligned to the boundaries of Delaware Seashore State Park, including an expansion in the south to include the recent park acquisition of Fresh Pond.
Additional Comments: There are no known private inholdings within the proposed boundaries of Unit DE-07P. Currently, the OPA includes a large area of open water and privately held lands and associated aquatic habitat that are outside the Delaware Seashore State Park boundary and not held for conservation or recreation purposes. The area is not an inholding and met Coastal Barrier Resources Act definition of and criteria for an undeveloped coastal barrier at the time it was established within the OPA. Therefore this area is proposed for reclassification from OPA Unit DE-07P to new Unit DE-07. The proposed boundaries



remove privately owned property that is not within the boundaries of the State park and was developed at the time it was included within Unit DE-07P.

Acreage, Shoreline, and Structures:

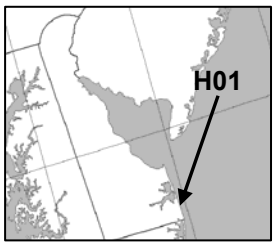
	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	7,360.3	894.5	6,465.8	6.8	
Added to the CBRS	703.4	400.4	303.0		0
Removed from the CBRS	54.4	20.1	34.3		41
Reclassified Area	(5,183.1)	(100.0)	(5,083.1)	(0.2)	
Proposed Unit	2,826.2	1,174.8	1,651.4	6.3	
Net Change	(4,534.1)	280.3	(4,814.4)	(0.5)	(41)

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 2002 aerial photography, and 2005 Sussex County property parcel information

John H. Chafee Coastal Barrier Resources System Unit H01, North Bethany Beach, Delaware

Type of Unit: System unit
Location of Unit: North of Bethany Beach, in Sussex County
Congressional District: At Large
Establishment of Unit: Coastal Barrier Resources Act (P.L. 97-348) enacted on 10/18/1982
Historical Changes to Unit: 11/16/1990: P.L. 101-591 modified the southwestern boundary of Unit H01 to remove land that was incorrectly identified as wetlands in 1982.
Existing Boundary Description: The northern boundary of Unit H01 cuts through a developed area. The landward boundary generally follows the eastern edge of a stream. The southern boundary cuts through an undeveloped piece of land at the northern edge of a developed property, follows the western side of a highway north, and then cuts across more development.

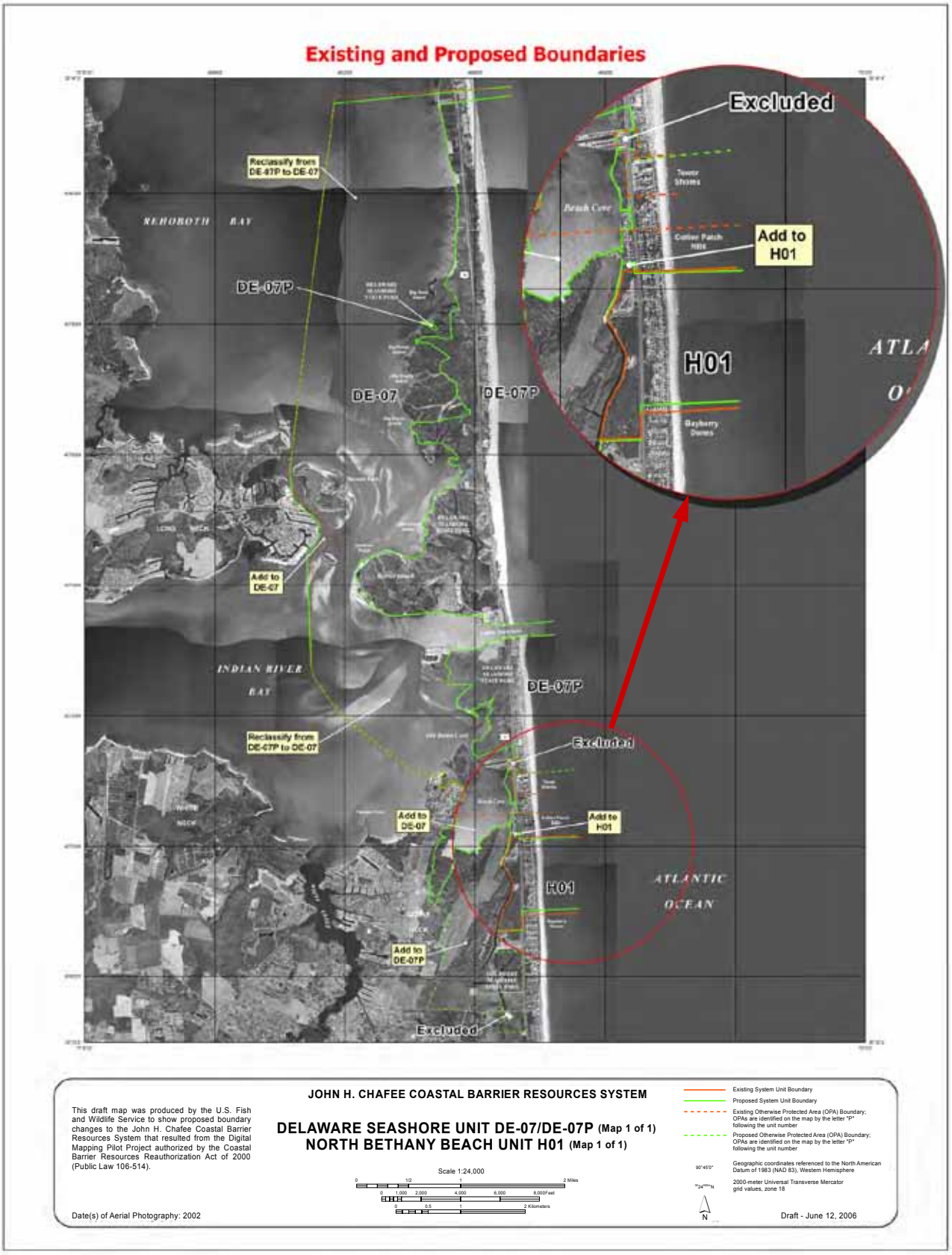
Proposed Changes to Boundary: The northern boundary of Unit H01 is adjusted to digital property parcel data to follow the southern boundary of the Cotton Patch Hills subdivision, which is the northern extent of this unit, and to add an undeveloped area of associated aquatic habitat on the northwest corner of the unit. The southern boundary is adjusted to digital property parcel data to follow the northern boundary of the Bayberry Dunes subdivision, which is the southeastern extent of this unit. The landward boundary to the north is adjusted to follow the boundary of the proposed addition to Unit DE-07P, which coincides with the Delaware Seashore State Park boundary.



Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	167.7	150.1	17.6	0.7	
Added to the CBRS	4.2	0.1	4.1		0
Removed from the CBRS	5.2	4.6	0.6		14
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	166.7	145.6	21.1	0.7	
Net Change	(1.0)	(4.5)	3.5	0.0	(14)

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 2002 aerial photography, and 2005 Sussex County property parcel information

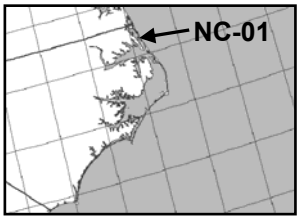


This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit NC-01, Pine Island Bay, North Carolina

Type of Unit: System unit
Location of Unit: North of Duck, in Currituck and Dare Counties
Congressional District: 3
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990 (under this Act the unit was established as otherwise protected area (OPA) Unit NC-01P)
Historical Changes to Unit: 10/23/1992: P.L. 102-440 modified the boundaries of Unit NC-01P to include only lands owned by the Audubon Society and reclassified this unit from Unit NC-01P to Unit NC-01.

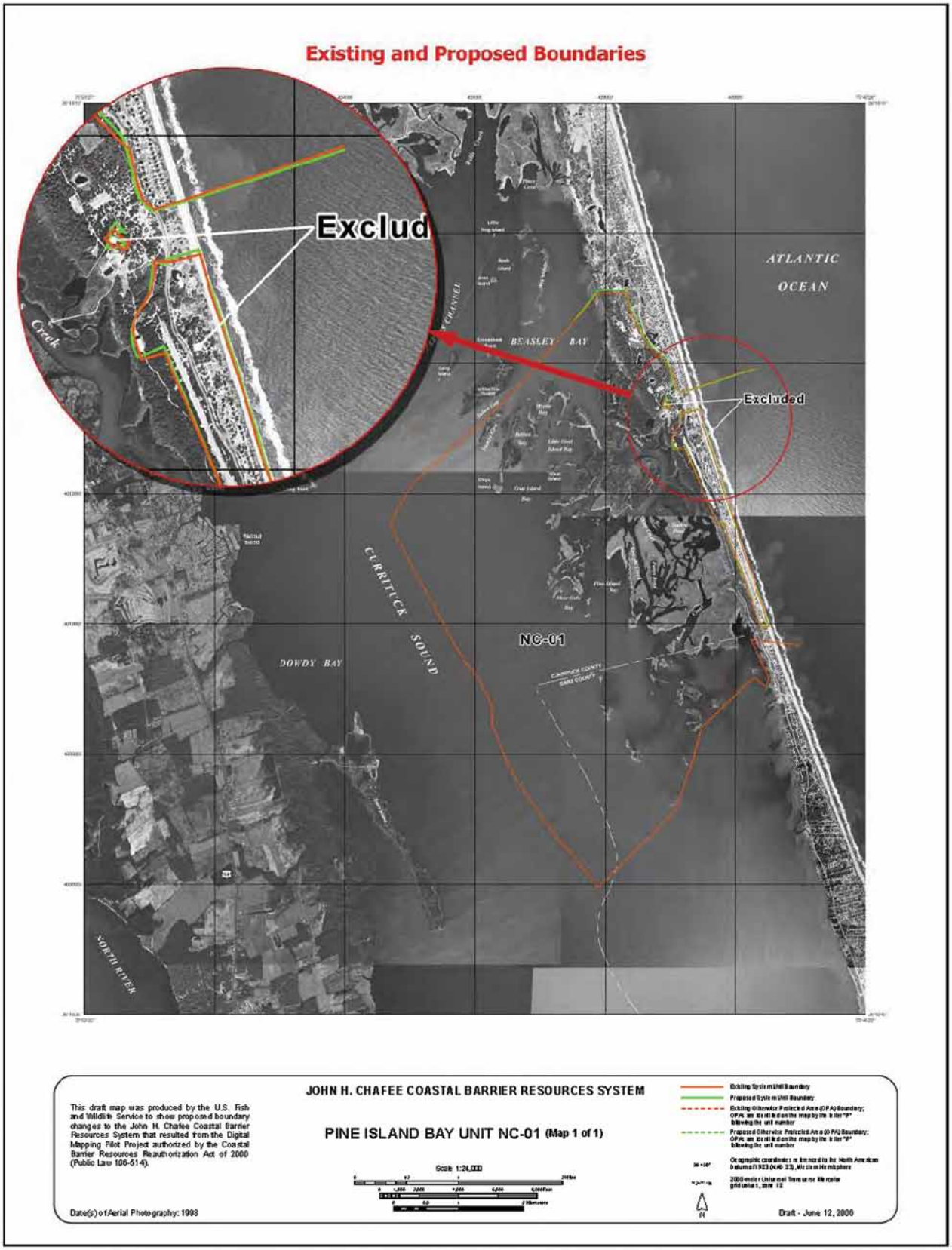
10/19/2000: P.L. 106-332 further modified Unit NC-01 to align the boundaries with the Audubon Society's Pine Island Sanctuary property boundary and to add associated aquatic habitat.
Existing Boundary Description: On the western side of the unit, the Unit NC-01 boundary falls in open water around the islands in Currituck Sound; on the eastern side, the boundary generally follows the boundaries of Pine Island Sanctuary.
Proposed Changes to Boundary: The northern boundary of Unit NC-01 and the boundaries of the two excluded areas are adjusted to align with more recent digital property parcel data to follow more precisely the boundaries of the Pine Island Sanctuary.



Acreage, Shoreline, and Structures:

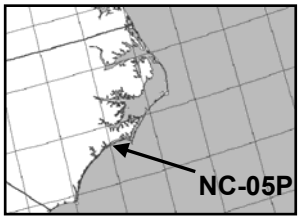
	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	7,174.4	432.9	6,741.5	0.4	
Added to the CBRS	21.7	18.9	2.8		0
Removed from the CBRS	7.4	7.2	0.2		1
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	7,188.7	444.6	6,744.1	0.4	
Net Change	14.3	11.7	2.6	0.0	(1)

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1998 and 1999 aerial photography, and 2005 Currituck County property parcel



This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit NC-05P, Roosevelt Natural Area, North Carolina

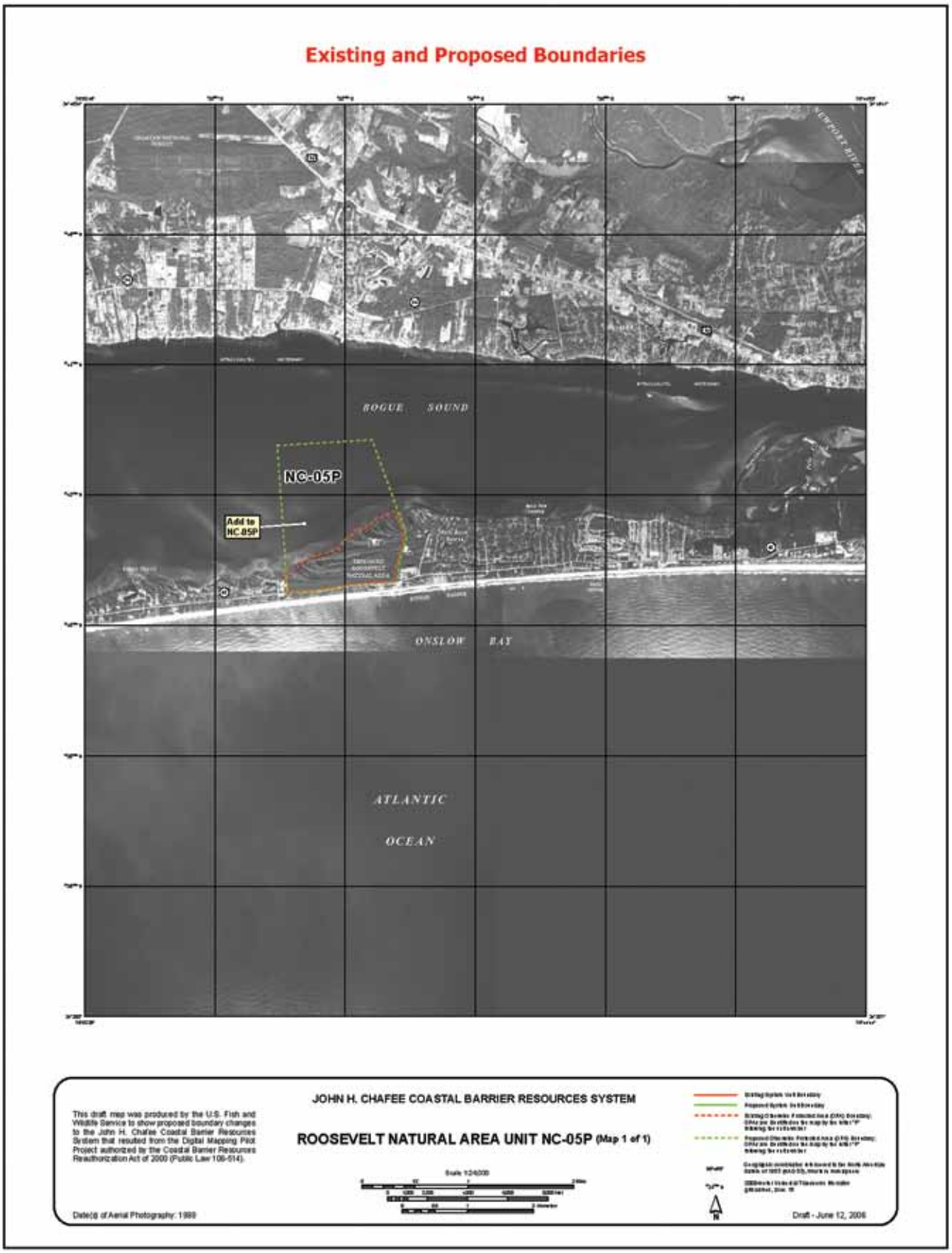


Type of Unit: Otherwise protected area
Location of Unit: West of Atlantic Beach, in Carteret County
Congressional District: 3
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: 10/23/1992: P.L. 102-440 modified Unit NC-05P to include only lands owned by the State of North Carolina.
Underlying Conservation/Recreation Area(s) in OPA: Theodore Roosevelt Natural Area (established 1971) and North Carolina Aquarium at Pine Knoll Shores (established 1976), both owned by the North Carolina Division of Parks and Recreation.
Existing Boundary Description: The boundaries of Unit NC-05P generally follow the boundaries of Theodore Roosevelt Natural Area.
Proposed Changes to Boundary: The northern boundary of Unit NC-05P is modified to follow the center of the channel in Bogue Sound. The eastern, western, and southern boundaries are aligned with the boundaries of the Theodore Roosevelt Natural Area.
Additional Comments: There are no known private inholdings within Unit NC-05P. The proposed boundaries remove privately owned property that is not within the boundaries of the Theodore Roosevelt Natural Area or the North Carolina Aquarium at Pine Knoll Shores.

Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	297.2	173.0	124.2	0.0	
Added to the CBRS	650.3	13.7	636.6		0
Removed from the CBRS	1.9	1.3	0.6		0
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	945.6	185.4	760.2	0.0	
Net Change	648.4	12.4	636.0	0.0	0

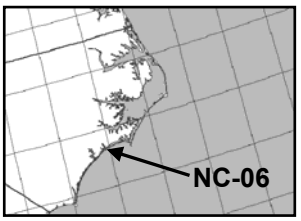
[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1998 aerial photography, and 2004 Carteret County property parcel information



This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit NC-06, Hammocks Beach, North Carolina

Type of Unit: Proposed new System unit
Location of Unit: East of Jacksonville, in Onslow County
Congressional District: 3
Current CBRS Status: Part of the proposed new System Unit NC-06 is within existing otherwise protected area (OPA) Unit NC-06P. The remainder of the proposed new unit is currently not within the John H. Chafee Coastal Barrier Resources System (CBRS).
System Unit Criteria: Areas of proposed new Unit NC-06 that are currently within Unit NC-06P met the Coastal Barrier Resources Act (CBRA) definition and criteria of an undeveloped coastal barrier at the time they were first included within the CBRS in 1990. Areas of proposed new Unit NC-06 that are currently not within the CBRS currently meet the CBRA definition and criteria of an undeveloped coastal barrier. The U.S. Fish and Wildlife Service is not aware of the existence of a full complement of infrastructure in this area at the time the area was first included within the CBRS.
Proposed Boundaries: The eastern boundary of the proposed new unit follows the eastern edge of Bogue Inlet, the Bogue Sound shoreline of the barrier island, and the western edge of the State Highway 68 bridge which crosses the wetlands between the barrier island and the mainland. The landward boundary follows the shoreline of the mainland, crossing Oak River and Queen Creek. The western boundary follows the center of Bear Inlet, coincident with the eastern proposed boundary of adjacent Unit L05. Just north of the western tip of Bear Island, this coincident boundary follows the western edge of a marsh, leaving the dynamic sand spits and a channel separating them from Bear Island within adjacent Unit L05. Proposed new Unit NC-06 follows the boundary of Unit NC-06P east along the protected landward shoreline of Bear Island back to the western edge of Bogue Inlet, where the boundary opens to the ocean. Interior boundaries are drawn to exclude Hammocks Beach State Park and are coincident with the boundaries of Unit NC-06P.



Additional Comments: The portions of proposed new Unit NC-06 currently within Unit NC-06P are proposed for reclassification because they are not held for conservation or recreation, are not inholdings, and met the CBRA definition and criteria for an undeveloped coastal barrier at the time the area was established within the OPA.

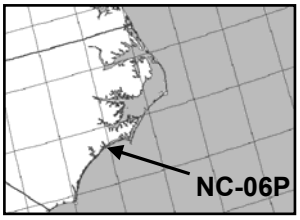
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	0.0	0.0	0.0	0.0	
Added to the CBRS	2,770.2	47.0	2,723.2		0
Removed from the CBRS	0.0	0.0	0.0		0
Reclassified Area	5,392.3	149.2	5,243.1	0.8	
Proposed Unit	8,162.5	196.2	7,966.3	1.7	
Net Change	8,162.5	196.2	7,966.3	1.7	0

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1998 aerial photography, and 2006 Onslow County property parcel information

John H. Chafee Coastal Barrier Resources System Unit NC-06P, Hammocks Beach, North Carolina

Type of Unit: Otherwise protected area
Location of Unit: East of Jacksonville, in Onslow and Carteret Counties
Congressional District: 3
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to the boundaries of Unit NC-06P since its designation in 1990.
Underlying Conservation/Recreation Area(s) in OPA: Hammocks Beach State Park (established 1961), managed by the North Carolina Division of Parks and Recreation
Existing Boundary Description: The eastern boundary of Unit NC-06P roughly follows Bogue Inlet until it reaches the Intracoastal Waterway. The northern boundary follows the southern edge of the Intracoastal Waterway. The western boundary follows Sanders Creek, crosses over a sandy spit, and passes through Bear Inlet into the Atlantic Ocean.
Proposed Changes to Boundary: The boundaries of Unit NC-06P are aligned with the boundaries of Hammocks Beach State Park, including an expansion in the north to include a new park acquisition within the OPA. Because the State park includes Huggins Island, Bear Island, and a piece of land located behind the marsh, the proposed boundaries create an OPA that is composed of three discrete segments.
Additional Comments: There are no known private inholdings within Unit NC-06P. Currently, the OPA includes a large area of private lands and associated aquatic habitat that are outside of Hammocks Beach State Park and are not held for conservation or recreation purposes. The area is not an inholding and



met the Coastal Barrier Resources Act definition of and criteria for an undeveloped coastal barrier at the time it was established within the OPA. Therefore this area is proposed for reclassification from OPA Unit NC-06P to new System Unit NC-06.

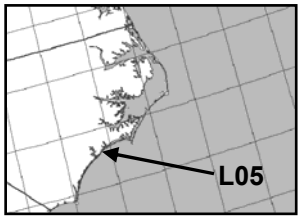
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	6,725.9	911.2	5,814.7	3.8	
Added to the CBRS	36.1	33.9	2.2		3[4]
Removed from the CBRS	0.0	0.0	0.0		0
Reclassified Area	(5,440.5)	(149.2)	(5,291.3)	(0.8)	
Proposed Unit	1,321.5	795.9	525.6	3.3	
Net Change	(5,404.4)	(115.3)	(5,289.1)	(0.5)	3

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1998 aerial photography, and 2006 Onslow County property parcel information
4 According to the Hammocks Beach State Park map (found online at http://ils.unc.edu/parkproject/visit/habe/habe.jpg), these park structures include a visitor center and restroom facilities

John H. Chafee Coastal Barrier Resources System Unit L05, Onslow Beach Complex, North Carolina

Type of Unit: System unit
Location of Unit: Southeast of Jacksonville, in Onslow County
Congressional District: 3
Establishment of Unit: Coastal Barrier Resources Act, or CBRA, (P.L. 97-348) enacted on 10/18/1982
Historical Changes to Unit: There have been no changes to the boundaries of Unit L05 since its designation in 1982.
Existing Boundary Description: Unit L05 consists of two discrete segments described here as the northern and southern segments.
Northern segment: The northern boundary of Unit L05 follows the center of Bear Inlet and cuts across the tip of Bear Island, which has accreted into the unit. The landward boundary roughly follows Sanders Creek, Shacklefoot Channel, and the eastern edge of the Intracoastal Waterway. The southern boundary crosses Hurst Beach roughly at the break-in-development.
Southern segment: The northern boundary crosses Onslow Beach roughly at the break-in-development. The landward boundary generally follows the eastern edge of the Intracoastal Waterway and Wards Channel. The western boundary originally followed the center of New River Inlet, but now cuts across a sandy spit that has accreted into the inlet and through some developing shoals at the mouth of the inlet.
Proposed Changes to Boundary:
Northern segment: The northern boundary is adjusted to be contiguous with the proposed boundaries of Unit NC-06P and proposed new Unit NC-06, which follow the shoreline of Bear Island and the channel between Bear Inlet and the Intracoastal Waterway. The landward boundary is adjusted to follow the wetland/fastland interface, including the Intracoastal Waterway, in order to include the entire associated aquatic habitat.
Southern segment: The landward boundary is adjusted to follow the wetland/fastland interface, including the Intracoastal Waterway, in order to include the entire associated aquatic habitat. The western boundary is adjusted to follow the center of New River Inlet and be contiguous with the proposed boundaries of Unit L06.



Additional Comments: Unit L05 is located entirely within the U.S. Marine Corps Base Camp Lejeune, which is identified for realignment on the 2005 Base Realignment and Closure list. There is coastal barrier land within Camp Lejeune that is not currently in the John H. Chafee Coastal Barrier Resources System, but it is considered developed according to the CBRA criteria and is therefore not proposed for inclusion within Unit L05. The proposed adjustments to the landward boundary of Unit L05 add undeveloped fastland located on spoil islands to the unit.

Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	3,045.6	729.2	2,316.4	10.3	
Added to the CBRS	3,299.2	144.5	3,154.7		0
Removed from the CBRS	0.0	0.0	0.0		0
Reclassified Area	96.8	0.0	96.8	0.0	
Proposed Unit	6,441.6	873.7	5,567.9	10.4	
Net Change	3,396.0	144.5	3,251.5	0.1	0

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1998 aerial photography, and 2006 Onslow County property parcel information

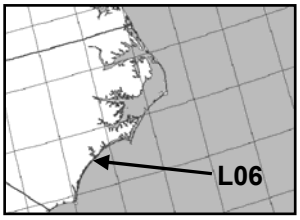
John H. Chafee Coastal Barrier Resources System Unit L06, Topsail, North Carolina

Type of Unit: System unit
Location of Unit: South of Jacksonville, in Onslow County
Congressional District: 3
Establishment of Unit: Coastal Barrier Resources Act (P.L. 97-348) enacted on 10/18/1982
Historical Changes to Unit: 11/16/1990: P.L. 101-591 modified the boundaries of Unit L06 to include new areas.
Existing Boundary Description: The northern boundary of Unit L06 roughly follows New River Inlet, cutting across an accreted spit on the north side of the inlet. The landward boundary generally follows the center of the Intracoastal Waterway and roughly follows the shoreline and the wetland/fastland interface. The southern boundary cuts across Everett Bay and extends across the barrier island. The excluded area boundaries are drawn around clusters of development which existed on-the-ground when the surrounding area was added to Unit L06.
Proposed Changes to Boundary: The northern boundary of Unit L06 is adjusted to be contiguous with the proposed boundaries of Unit L05, which follow the center of New River Inlet and the New River. The landward boundary is adjusted to include the entire Intracoastal Waterway and to follow more precisely the wetland/fastland interface and the shoreline from Swan Point to Turkey Creek. The landward boundary in the vicinity of Sandford Landing is aligned with digital property parcel data to remove development that existed on-the-ground when this area was added to Unit L06. The southern boundary is adjusted to follow the wetland/fastland break and to align with a road.

In the northern excluded area of Unit L06, the southern boundary is adjusted to align with digital property parcel data to exclude a condominium built prior to 1982. The western boundary is adjusted to follow digital property parcel data and add undeveloped land to Unit L06. The northern boundary is adjusted to align with digital property parcel data to remove development that was on-the-ground in 1990 when this area was added to Unit L06. The seaward boundary is adjusted to follow the Atlantic Ocean shoreline.

In the southern excluded area of Unit L06, the southern boundary is aligned with digital property parcel data to include the properties that were not developed in 1982 when the area was established as Unit L06. The western boundary is adjusted to add associated aquatic habitat to Unit L06 and follow the eastern edge of the Intracoastal Waterway. The seaward boundary is adjusted to follow the shoreline.
Additional Comments: An infrastructure analysis was performed for the development in the area around the excluded areas and in the vicinity of Sandford Landing. This analysis looked at whether roads, a wastewater disposal system, electric service, and a fresh water supply served each lot or building site prior to the areas being added to Unit L06. The results affirmed that sewer and water lines were installed along the main roads and primary electric service was available but secondary services were not constructed until the lots were developed. No information was available on the roads except what is visible on the April 30, 1982, photography in the Coastal Barrier Resources Act of 1982: Photographic Inventory, Volume 7, North Carolina. An infrastructure analysis was not performed for any other pilot project unit due to resource and time restrictions. The results of this analysis were not used as a justification of any proposed boundary adjustments for Unit L06, but are included here for information purposes.

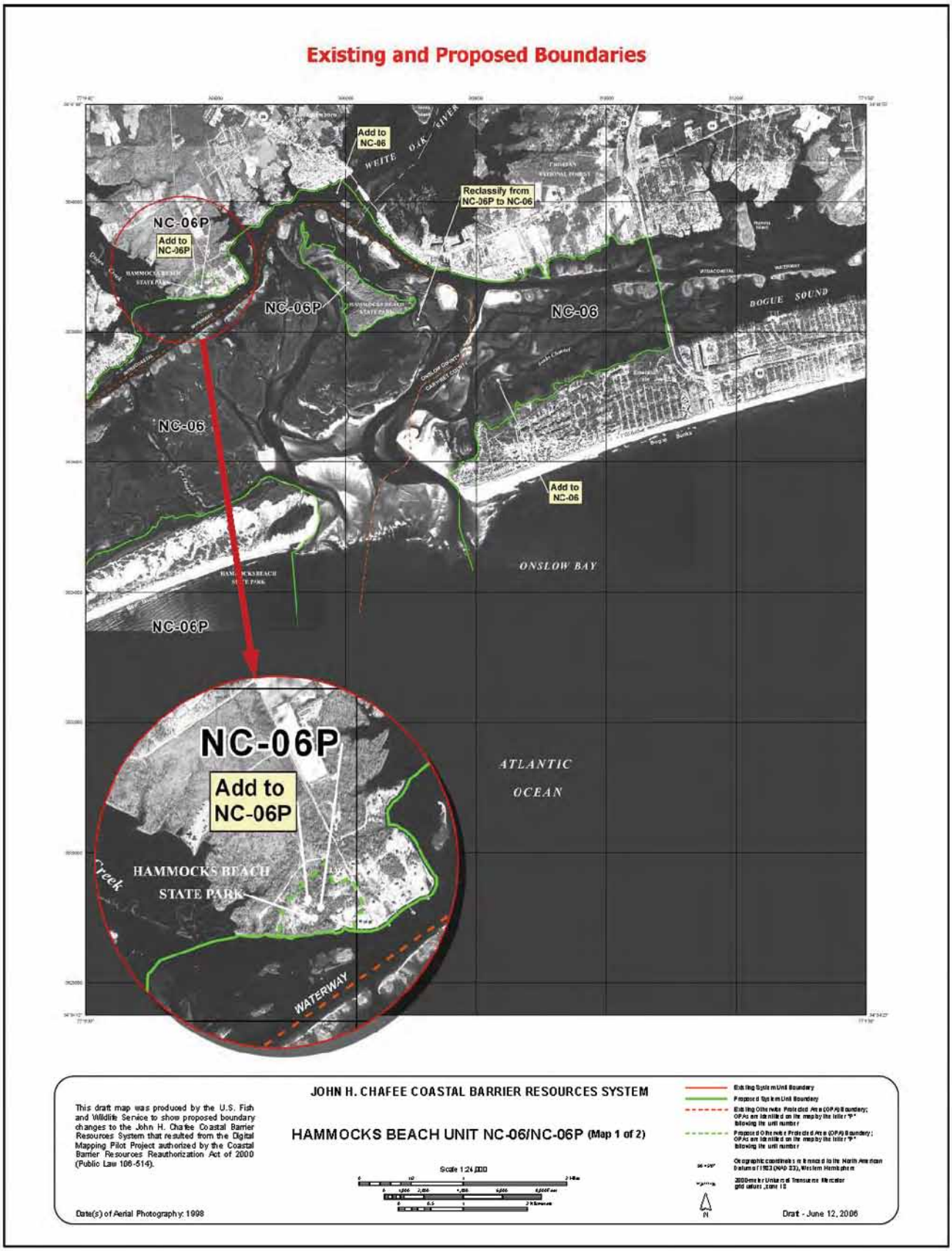
The proposed adjustments to the landward boundary of Unit L06 add undeveloped fastland to the unit.



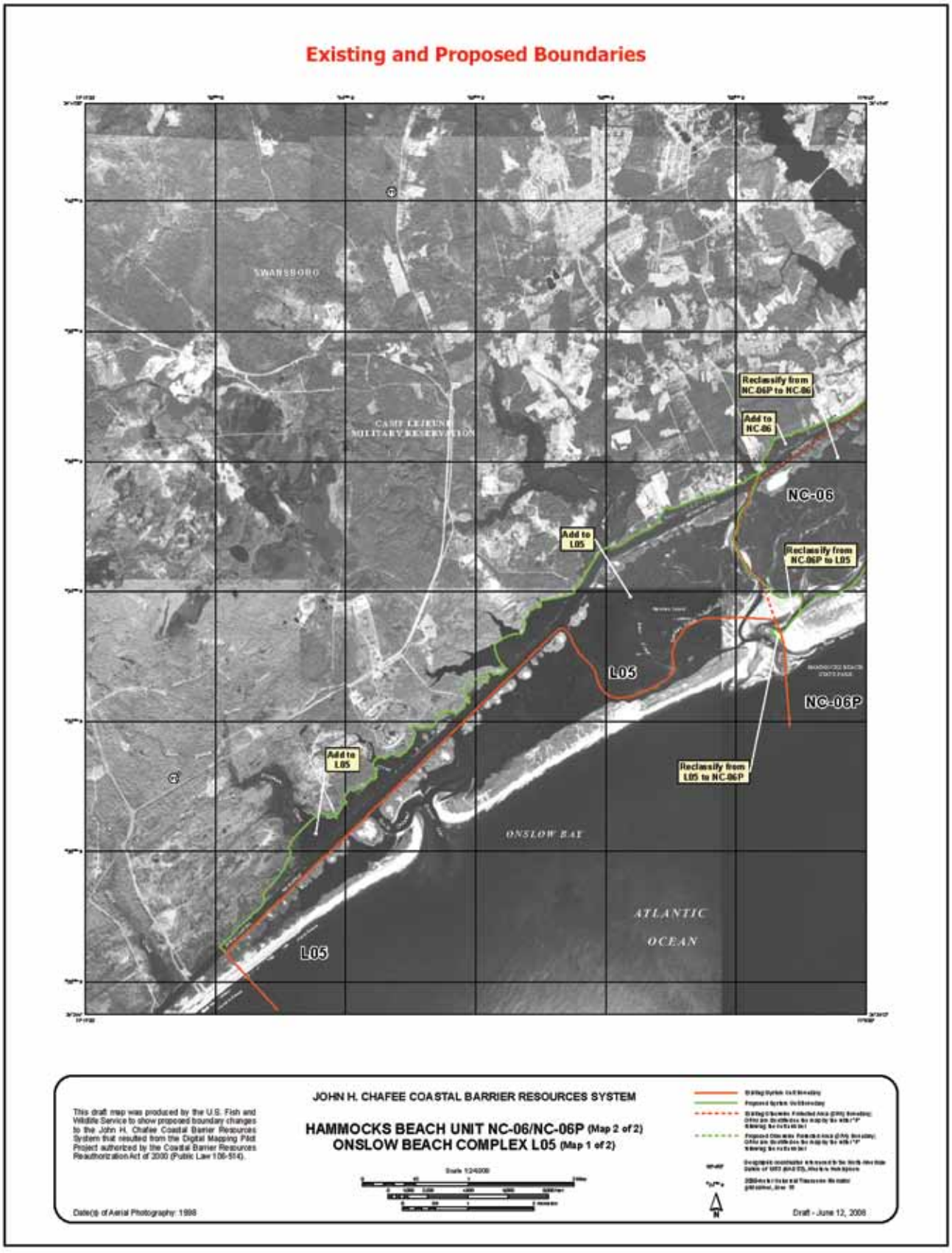
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	6,043.5	1,032.1	5,011.4	6.9	
Added to the CBRS	188.4	9.4	179.0		0
Removed from the CBRS	127.6	76.9	50.7		56
Reclassified Area	(48.6)	0.0	(48.6)	0.0	
Proposed Unit	6,055.7	964.6	5,091.1	7.3	
Net Change	12.2	(67.5)	79.7	0.4	(56)

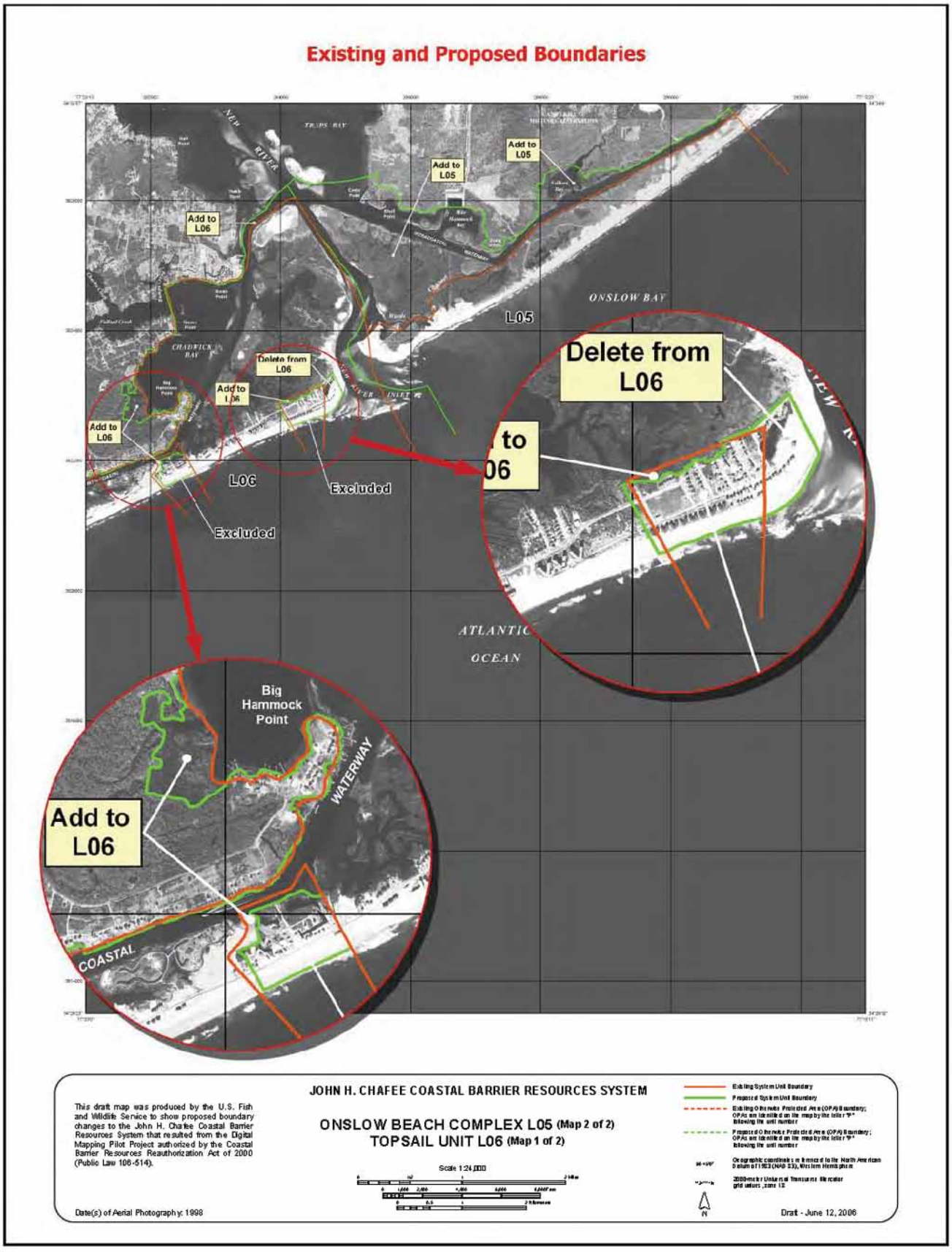
1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1998 aerial photography, and 2006 Onslow County property parcel information



This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.



This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.



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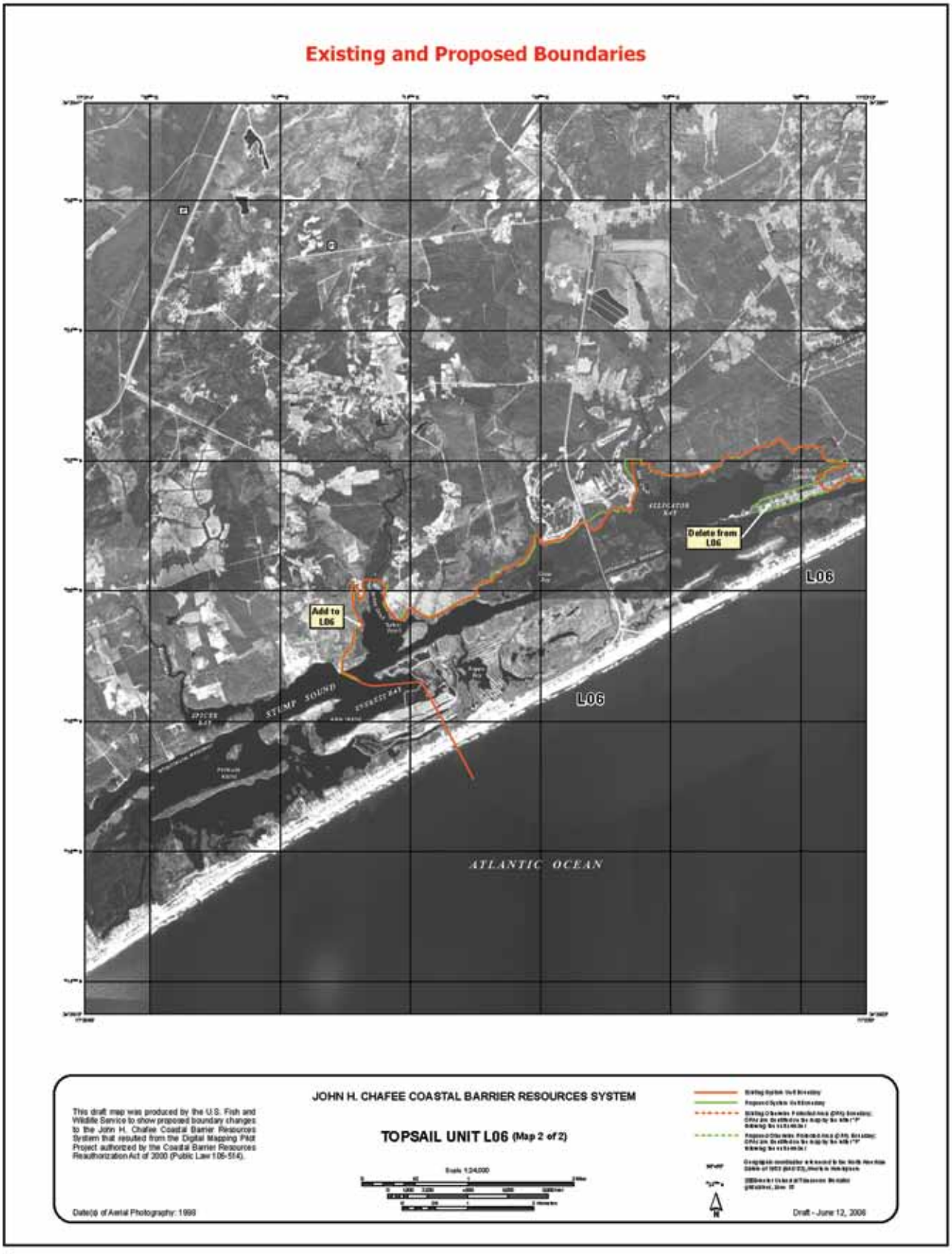
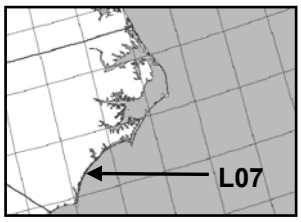


This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit L07, Lea Island Complex, North Carolina

Type of Unit: System unit
Location of Unit: Northeast of Wilmington, in Pender and New Hanover Counties
Congressional District: 7
Establishment of Unit: Coastal Barrier Resources Act (P.L. 97-348) enacted on 10/18/1982
Historical Changes to Unit: 11/16/1990: P.L. 101-591 added associated aquatic habitat to Unit L07.

2/24/1997: The southern end of Unit L07 was modified in accordance with Section 4(c) of P.L. 101-591, which states that System unit boundaries are to be reviewed every five years and modified to reflect changes caused by natural forces. This unit was expanded to include the entire spit on the south side of Rich Inlet, which was no longer completely within the unit, and to include the spit's associated aquatic habitat.
Existing Boundary Description: The northern boundary of Unit L06 originally followed the center of New Topsail Inlet, but now the boundary crosses the southern tip of the island north of New Topsail Inlet where the island has accreted into the inlet. From this point, the northern boundary follows a channel through Topsail Sound, crosses the Intracoastal Waterway, and roughly follows the wetland/fastland interface along Old Topsail Creek up to Old Point. The landward boundary roughly follows the wetland/fastland interface along the Intracoastal Waterway from Old Topsail Creek to Futch Creek. The southern boundary generally follows the center of Nixon Channel, which is also the boundary between Pender and New Hanover Counties, and crosses through the northern tip of Figure Eight Island.
Proposed Changes to Boundary: The northern boundary of Unit L07 is adjusted to follow a break in vegetation on the barrier island north of New Topsail Inlet, the eastern Banks Channel shoreline to include the entire channel, a channel through the marsh, and the wetland/fastland interface on the northern side of the Intracoastal Waterway to Old Topsail Creek. This adjustment adds associated aquatic habitat to Unit L07. The landward boundary is

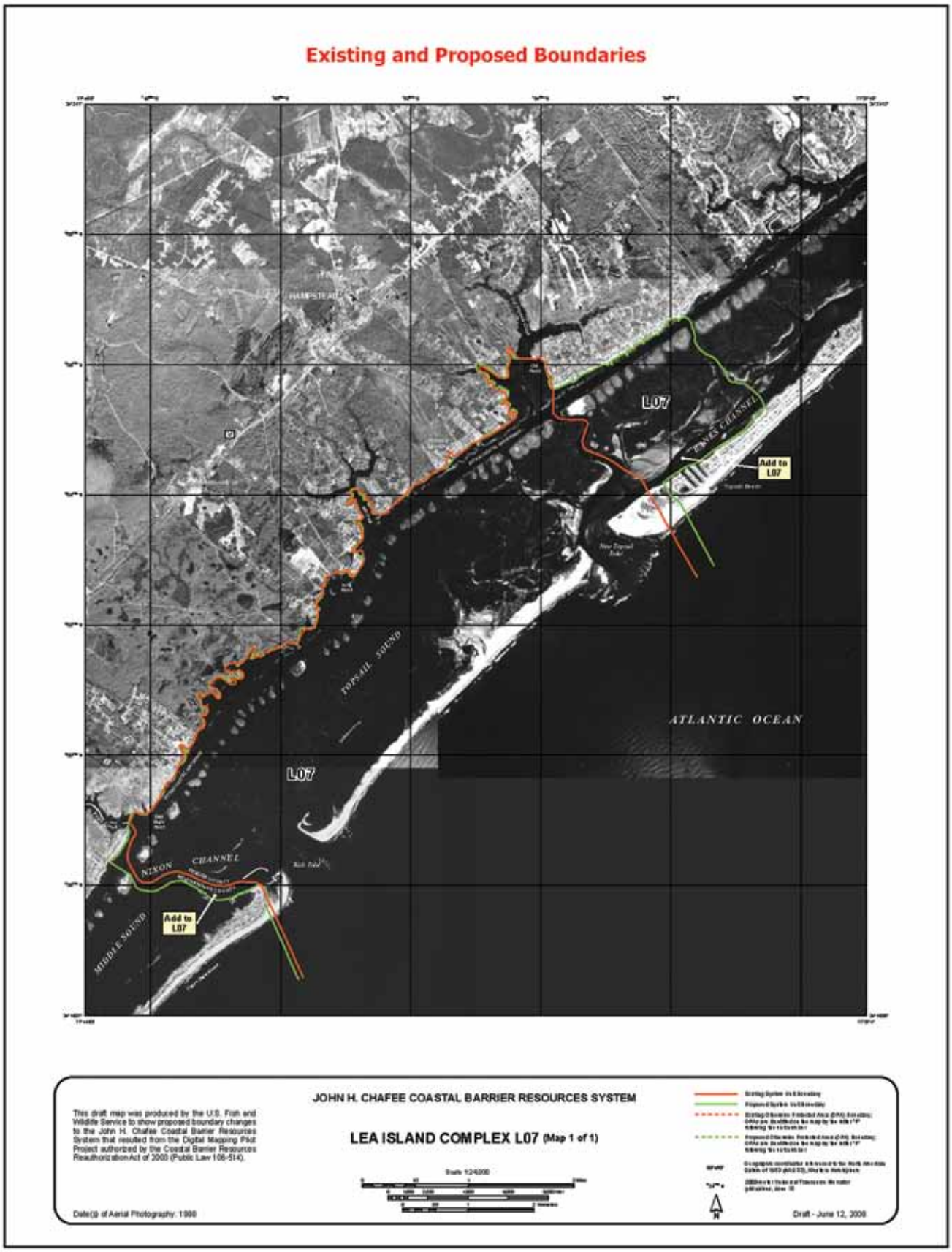


adjusted to follow more precisely the wetland/fastland interface along the Intracoastal Waterway from Old Topsail Creek to Futch Creek. The southern boundary is adjusted to include the entire Nixon Channel in Unit L07 and to follow the break-in-development on the tip of Figure Eight Island.
Additional Comments: The proposed Unit L07 boundary includes portions of associated aquatic habitat located behind development. The proposed adjustments to the landward boundary add undeveloped fastland located on spoil islands to the unit.

Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	5,989.8	103.1	5,886.7	5.5	
Added to the CBRS	1,323.0	81.9	1,241.1		0
Removed from the CBRS	35.0	0.0	35.0		0
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	7,277.8	185.0	7,092.8	5.8	
Net Change	1,288.0	81.9	1,206.1	0.3	0

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1998 aerial photography, and 2005 Pender County property parcel information

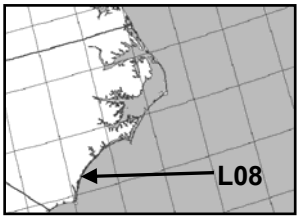


This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit L08, Wrightsville Beach, North Carolina

Type of Unit: System unit
Location of Unit: East of Wilmington, in New Hanover County
Congressional District: 7
Establishment of Unit: Coastal Barrier Resources Act (P.L. 97-348) enacted on 10/18/1982
Historical Changes to Unit: 11/16/1990: P.L. 101-591 modified the northern boundary of Unit L08 to exclude development that existed prior to the establishment of Unit L08 in 1982, and to add associated aquatic habitat.

2/24/1997: Section 4(c) of P.L. 101-591 modified Unit L09, which is depicted on the same map as Unit L08. No changes were made to Unit L08 at that time.
Existing Boundary Description: The northern boundary of Unit L08 cuts through development on Figure Eight Island, follows a channel through Middle Sound, and crosses the Intracoastal Waterway to the mainland. The landward boundary roughly follows the wetland/fastland interface to Howe Point. The southern boundary crosses the Intracoastal Waterway and cuts across Middle Sound through Mason Inlet. The southern boundary once passed through a barrier island to the south of Mason Inlet; however, the inlet has migrated south and the boundary now crosses through the inlet.
Proposed Changes to Boundary: The northern boundary of Unit L08 is aligned with digital property parcel data to exclude development that was on-the-ground in 1982 as intended by P.L. 101-591, and to include additional associated aquatic habitat. The landward boundary is adjusted to follow more precisely the wetland/fastland interface. The southern boundary of Unit L08 is



adjusted to follow a river through Middle Sound and to follow the southern edge of Mason Inlet, reflecting geomorphic change, so the entire inlet is in Unit L08.
Additional Comments: The proposed Unit L08 boundary includes portions of associated aquatic habitat located behind development. The proposed adjustments to the Unit L08 boundaries add undeveloped fastland located on spoil islands to the unit.

Acreage, Shoreline, and Structures:

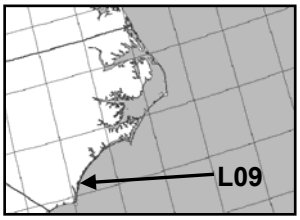
	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	667.2	83.0	584.2	1.0	
Added to the CBRS	445.8	24.3	421.5		0
Removed from the CBRS	13.3	10.0	3.3		9
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	1,099.7	97.3	1,002.4	1.0	
Net Change	432.5	14.3	418.2	0.0	(9)

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1998 aerial photography, and 2003 New Hanover County property parcel information

John H. Chafee Coastal Barrier Resources System Unit L09, Masonboro Island, North Carolina

Type of Unit: System unit
Location of Unit: Southeast of Wilmington, in New Hanover County
Congressional District: 7
Establishment of Unit: Coastal Barrier Resources Act (P.L. 97-348) enacted on 10/18/1982
Historical Changes to Unit: 11/16/1990: P.L. 101-591 modified the landward boundary of Unit L09 to add associated aquatic habitat.

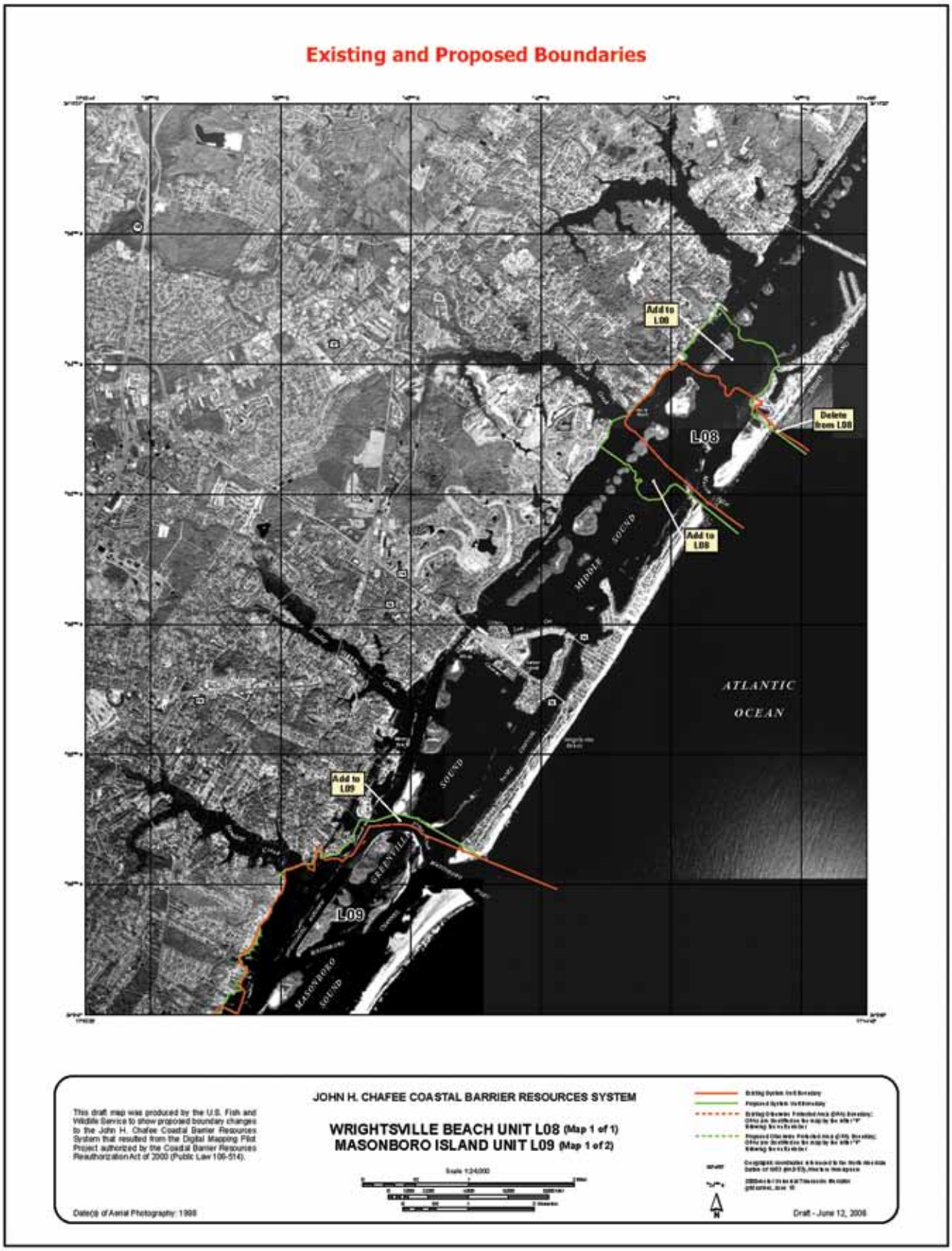
2/24/1997: The northern boundary of Unit L09 was modified in accordance with Section 4(c) of P.L. 101-591, which states that System unit boundaries are to be reviewed every five years and modified to reflect changes caused by natural forces. This unit was adjusted to include the entire undeveloped portion of the spit on the north side of Masonboro Inlet, which had migrated outside of the unit, and to include the spit's associated aquatic habitat.
Existing Boundary Description: The northern boundary of Unit L09 cuts across the spit on the north side of Masonboro Inlet roughly at the break-in-development and generally follows the center of Shinn Creek. The landward boundary generally follows the wetland/fastland interface along the Intracoastal Waterway. The southern boundary cuts across the Intracoastal Waterway and the tidal flats behind Carolina Beach, and then cuts across the Carolina Beach barrier island roughly at the break-in-development.
Proposed Changes to Boundary: The northern boundary of Unit L09 is adjusted to follow more precisely the break-in-development at the tip of the spit to the north of Masonboro Inlet, and to include the entire Shinn Creek channel. The landward boundary is adjusted to follow more precisely the wetland/fastland interface. The southern boundary is adjusted to follow the wetland/fastland interface and include the entire associated aquatic habitat. The boundary is also aligned with digital property parcel data to include an undeveloped portion of the barrier island and follow more precisely the 1982 break-in-development.
Additional Comments: A spit of land, surrounded by wetlands and located north of the Whiskey Creek confluence with the Intracoastal Waterway, is shown as wetlands on the current John H. Chafee Coastal Barrier Resources System map, which is based on a U.S. Geological Survey quadrangle dated 1970. However, it appears that when this area was first added to Unit L09 in 1990, the wetlands had been filled in and three homes were already constructed on the spit. Volume 11 of the Department of the Interior's 1988 Report to Congress: Coastal Barrier Resources System, Recommendations for Additions to or Deletions from the Coastal Barrier Resources System recommended that all the wetlands between Masonboro Island and the Intracoastal Waterway be added to Unit L09. Therefore, the proposed boundary removes the spit from Unit L09 because the area was incorrectly identified as wetlands in 1990.



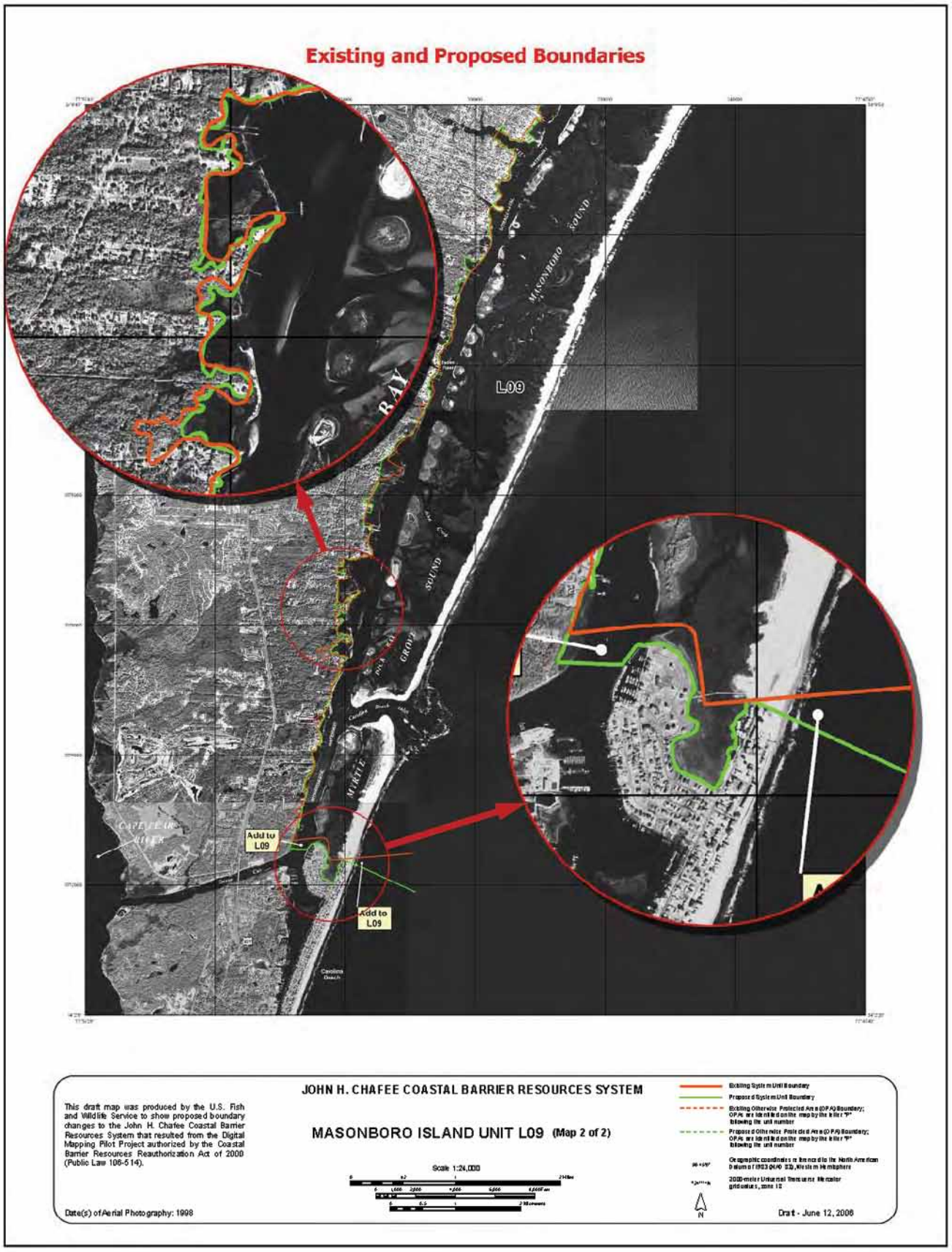
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	6,587.7	526.3	6,061.4	9.9	
Added to the CBRS	213.4	0.0	213.4		0
Removed from the CBRS	50.5	35.6	14.9		17
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	6,750.6	490.7	6,259.9	10.0	
Net Change	162.9	(35.6)	198.5	0.1	(17)

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1998 aerial photography, and 2003 New Hanover County property parcel information



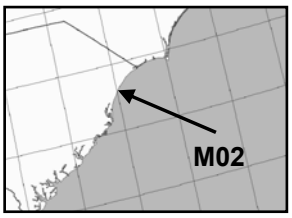
This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.



This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System M02, Litchfield Beach, South Carolina

Type of Unit: System unit
Location of Unit: Northeast of Georgetown, in Georgetown County
Congressional District: 1
Establishment of Unit: Coastal Barrier Resources Act (P.L. 97-348) enacted on 10/18/1982
Historical Changes to Unit: There have been no changes to Unit M02 since its designation in 1982.
Existing Boundary Description: The northern boundary of Unit M02 passes through development on the barrier spit and extends to the western side of Clubhouse Creek. The landward boundary roughly follows Clubhouse Creek. The southern boundary generally follows the shoreline of Pawleys Island and the southern edge of Midway Inlet. The southern boundary once passed through a barrier spit extending north toward Midway Inlet; however, the inlet has migrated south and the boundary is now on the southern edge of the inlet.
Proposed Changes to Boundary: The northern boundary of Unit M02 is aligned with digital property parcel data to include development that is currently bisected by the boundary, but, according to the U.S. Fish and Wildlife Service records, was intended to be entirely within Unit M02 (this area was undeveloped in 1982). The landward boundary is adjusted to add associated aquatic habitat. The southern boundary is adjusted to follow the fastland/wetland break along the tip of Pawleys Island.
Additional Comments: The proposed Unit M02 boundary includes portions of associated aquatic habitat located behind development. Volume 12 of the Department of the Interior's 1988 Report to Congress: Coastal Barrier Resources System, Recommendations for Additions to or Deletions from the Coastal Barrier Resources System recommended that the associated aquatic habitat west of Clubhouse Creek and the undeveloped area north of the unit be added to Unit M02. Congress did not adopt the proposed addition to Unit M02 with the enactment of the Coastal Barrier Improvement Act of 1990. It appears that the proposed addition was not adopted because a full complement of infrastructure was on-the-ground and one home was built by September of 1990 in the proposed addition. However, the 1990 development and infrastructure were located in the area to the north of Unit M02 and not in the associated aquatic habitat west of Clubhouse Creek. Thus, the associated aquatic habitat west of Clubhouse Creek is proposed for addition to Unit M02.



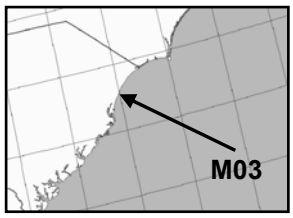
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	88.1	25.3	62.8	1.1	
Added to the CBRS	348.6	1.4	347.2		0
Removed from the CBRS	0.0	0.0	0.0		0
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	436.7	26.7	410.0	1.1	
Net Change	348.6	1.4	347.2	0.0	0

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1999 aerial photography, and 2004 Georgetown County property parcel information

John H. Chafee Coastal Barrier Resources System Unit M03, Pawleys Inlet, South Carolina

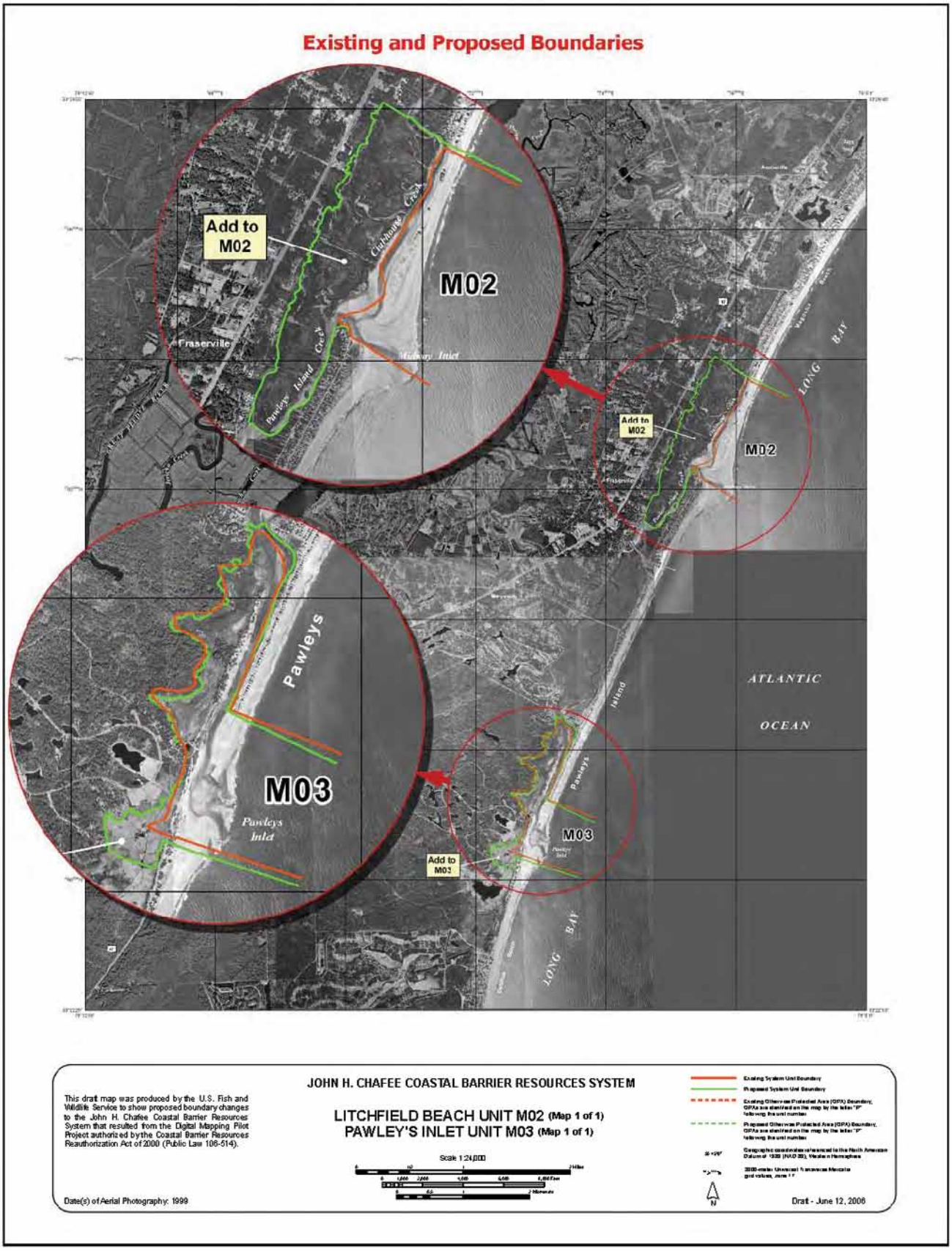
Type of Unit: System unit
Location of Unit: East of Georgetown, in Georgetown County
Congressional District: 1
Establishment of Unit: Coastal Barrier Resources Act (P.L. 97-348) enacted on 10/18/1982
Historical Changes to Unit: 11/16/1990: P.L. 101-591 added associated aquatic habitat to Unit M03.
Existing Boundary Description: The northern boundary of Unit M03 cuts across the southern tip of Pawleys Island through a row of development along the beach. The landward boundary roughly follows the center of the channel on the western side of Pawleys Island and then the wetland/fastland interface. The southern boundary is located south of Pawleys Inlet and north of the developed area.
Proposed Changes to Boundary: The northern boundary of Unit M03 is aligned with digital property parcel data to exclude development that was on the ground in 1982 when Unit M03 was first established. The landward boundary is adjusted to follow the eastern edge of the channel on the western side of Pawleys Island so that the entire channel is placed within the unit. The landward boundary is also adjusted to follow more precisely the wetland/fastland interface. Volume 12 of the Department of the Interior's 1988 Report to Congress: Coastal Barrier Resources System, Recommendations for Additions to or Deletions from the Coastal Barrier Resources System, stated that the southern boundary was placed in 1982 to exclude phased development to the south. The existing Unit M03 boundary crosses through a large parcel that is not subdivided, is undeveloped, and is owned by one entity. The southern boundary is adjusted to align with the southern digital property parcel line of this property and to include additional associated aquatic habitat that is contiguous with aquatic habitat currently within Unit M03.
Additional Comments: Within the vicinity of Unit M03 and Prince George Community, there is conservation land that may meet the Coastal Barrier Improvement Act definition of an otherwise protected area (OPA). Research at this time indicates that the land is held in trust by the University of South Carolina Development Foundation to be preserved in a natural state; however, sufficient documentation has not been collected from the foundation at this time to propose a new OPA.



Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	187.2	49.1	138.1	0.6	
Added to the CBRS	47.6	2.5	45.1		0
Removed from the CBRS	10.9	9.4	1.5		1
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	223.9	42.2	181.7	0.6	
Net Change	36.7	(6.9)	43.6	0.0	0

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1999 aerial photography, and 2004 Georgetown County property parcel information



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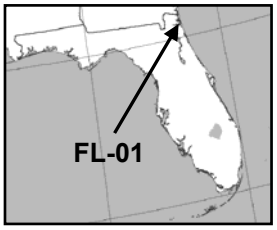
John H. Chafee Coastal Barrier Resources System Unit FL-01, Fort Clinch, Florida

Type of Unit: Proposed new System unit
Location of Unit: Northeast of Jacksonville on the Atlantic Coast, in Nassau County
Congressional District: 4
Current CBRS Status: Approximately half of the proposed new unit is currently within existing otherwise protected area (OPA) Unit FL-01P.
System Unit Criteria: Areas of proposed new Unit FL-01 that are currently within Unit FL-01P met the Coastal Barrier Resources Act (CBRA) definition and criteria of an undeveloped coastal barrier at the time they were first included within the John H. Chafee Coastal Barrier Resources System (CBRS) in 1990. Areas of proposed new Unit FL-01 that are currently not within the CBRS currently meet the CBRA definition and criteria of an undeveloped coastal barrier. The U.S. Fish and Wildlife Service is not aware of the existence of a full complement of infrastructure in this area at the time the area was first included within the CBRS.
Proposed Boundaries: The eastern and northern boundaries of the proposed new unit are contiguous with the proposed western boundary of Unit FL-01P, beginning in the southeast where the OPA meets State Highway A1A. The western boundary follows the southern shoreline of a small river that divides the aquatic habitat within the proposed new unit and developed fastland to the south. The southern boundary follows the northern edge of State Highway A1A east until it meets Unit FL-01P.
Additional Comments: The portions of proposed new Unit FL-01 currently within Unit FL-01P are proposed for reclassification because they are not held for conservation or recreation, are not inholdings, and met the CBRA definition of and criteria for an undeveloped coastal barrier at the time the area was established within the OPA.



Acreage, Shoreline, and Structures:

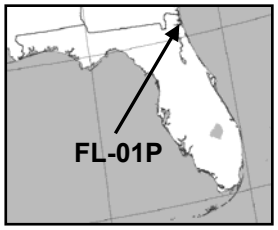
	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	0.0	0.0	0.0	0.0	
Added to the CBRS	202.4	4.7	197.7		0
Removed from the CBRS	0.0	0.0	0.0		0
Reclassified Area	223.4	7.0	216.4	0.0	
Proposed Unit	425.8	11.7	414.1	0.0	
Net Change	425.8	11.7	414.1	0.0	0

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1999 and 2004 aerial photography, and 2004 Nassau County property parcel information

John H. Chafee Coastal Barrier Resources System Unit FL-01P, Fort Clinch, Florida

Type of Unit: Otherwise protected area (OPA)
Location of Unit: Northeast of Jacksonville on the Atlantic Coast, in Nassau County
Congressional District: 4
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to the boundaries of Unit FL-01P since its designation in 1990.
Underlying Conservation/Recreation Area(s) in OPA: Fort Clinch State Park, owned by the Florida Department of Environmental Protection. Land was first purchased for conservation or recreation purposes in 1935. Fernandina Plaza State Historic Site, a separate tract operated independently and not part of the OPA, became part of the park in 1949.

Dee Dee Bartels Nature Center and Fishing Pier, managed by the Nassau County Board of Commissioners. This land was first purchased for conservation or recreation purposes in 1999.
Existing Boundary Description: The northern boundary of Unit FL-01P and a portion of the western boundary lie in open water. The boundary turns east (inland) north of some industrial warehouse facilities along the edge of Fort Clinch State Park, then south to Egans Creek. It follows Egans Creek to a point east of the Fernandina Beach water treatment center and turns east again over private wetlands and through the park to the park's eastern boundary, which it follows north and east to the ocean.
Proposed Changes to Boundary: The northern boundary of Unit FL-01P is adjusted to follow the center of the channel and to extend further into the Atlantic Ocean to include the entire barrier spit and jetty. The inland boundaries are aligned with the property boundaries of the public recreation and conservation lands in order to include the entirety of the park lands.
Additional Comments: There are no known private inholdings within Unit FL-01P. Dee Dee Bartels Nature Center and Fishing Pier



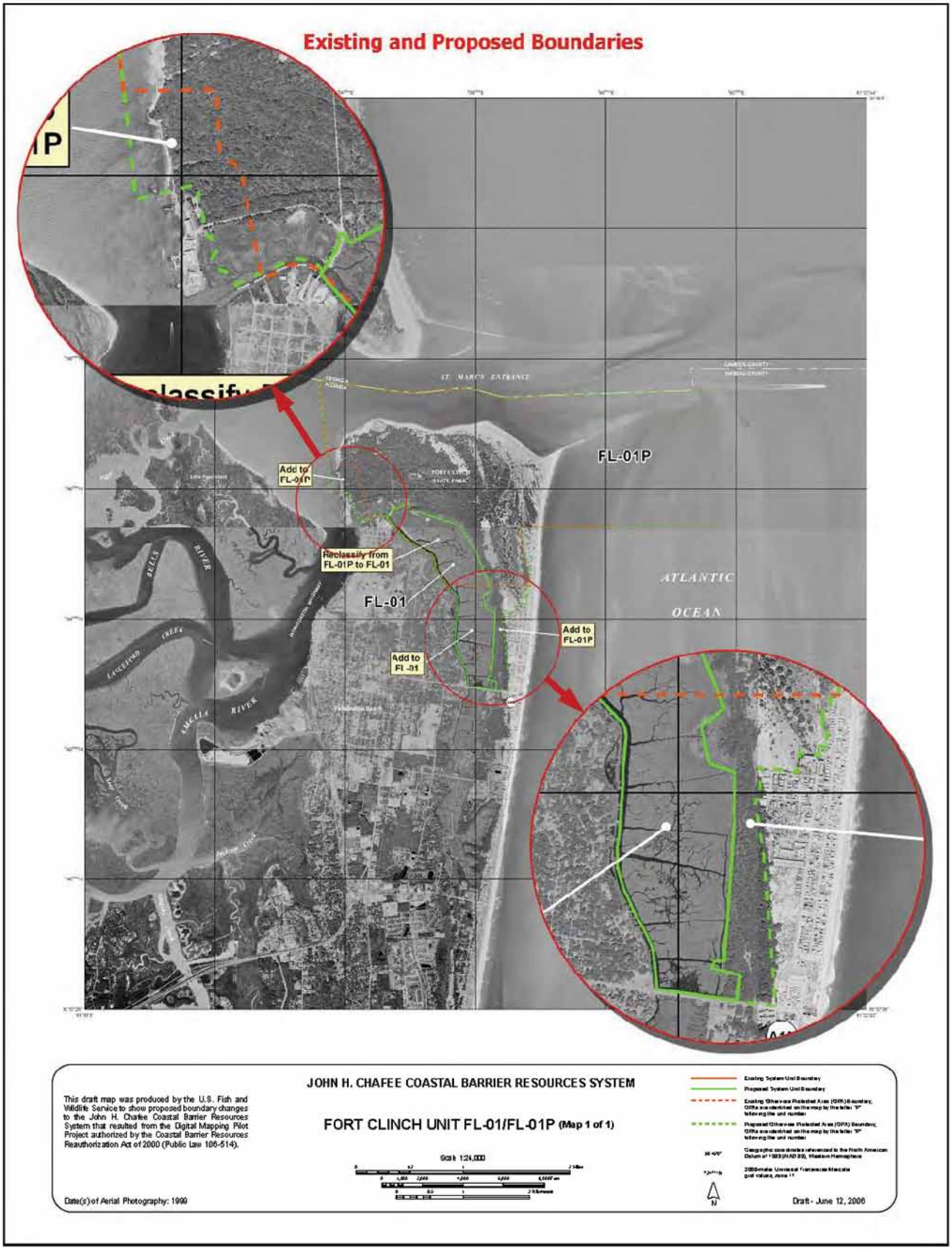
was not held for conservation or recreation purposes in 1990 although a portion of it was included within Unit FL-01P. It is therefore proposed that this area be added to the OPA in its entirety.

Currently, the OPA includes a large area of privately held associated aquatic habitat that is outside the Fort Clinch State Park boundary and not held for conservation or recreation purposes. The area is not an inholding and met the Coastal Barrier Resources Act definition of and criteria for an undeveloped coastal barrier at the time it was established within the OPA. Therefore this area is proposed for reclassification from Unit FL-01P to proposed new Unit FL-01.

Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	2,008.8	1,105.4	903.4	1.3	
Added to the CBRS	186.8	148.6	38.2		0
Removed from the CBRS	1.7	0.0	1.7		0
Reclassified Area	(223.4)	(7.0)	(216.4)	0.0	
Proposed Unit	1,970.5	1,247.0	723.5	1.3	
Net Change	(38.3)	141.6	(179.9)	0.0	0

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1999 and 2004 aerial photography, and 2004 Nassau County property parcel information

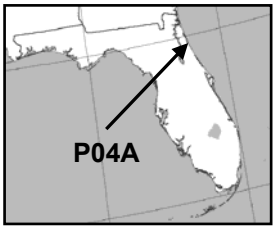


This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit P04A, Usinas Beach, Florida

Type of Unit: System unit
Location of Unit: East of St. Augustine on the Atlantic Coast, in St. Johns County
Congressional District: 7
Establishment of Unit: Coastal Barrier Resources Act (P.L. 97-348) enacted on 10/18/1982
Historical Changes to Unit:
11/16/1990: P.L. 101-591 made changes to the northern boundary of Unit P04A to exclude land that was developed in 1982, and adjusted the landward boundary to add associated aquatic habitat.

10/21/1998: P.L. 105-277 made changes to the boundaries of adjacent System Unit P05. No changes were made to the boundaries of Unit P04A at that time.
Existing Boundary Description:
The northern boundary of Unit P04A generally follows the break-in-development, cuts across the Tolomato River, and follows Robinson Creek and a channel through the wetlands. The landward boundary roughly follows the wetland/fastland interface. The southern boundary generally follows a channel through the wetlands and the wetland/fastland interface of Kurths Island, crosses the Tolomato River, and cuts across the barrier island at the break-in-development near the Atlantic Ocean shoreline.
Proposed Changes to Boundary: The northern boundary of Unit P04A is aligned with digital property parcel data to exclude developed properties that were intended to be removed in 1990 with the passage of P.L. 101-591. This boundary is also adjusted to include all associated aquatic habitat, including the entirety of the Tolomato River, Robinson Creek, and the channel through the wetlands. The landward boundary is adjusted to follow more precisely the wetland/fastland interface. The southern boundary is adjusted to follow more precisely the channel through the wetlands and the wetland/fastland interface of Kurths Island. As this boundary crosses the barrier island, it is adjusted to include wetlands on the river side of the island and to follow digital property parcel data on the ocean side of the island.
Additional Comments: Fort Mose Historic State Park is located



partially within Unit P04A, but is not proposed for reclassification as an otherwise protected area (OPA) at this time. Originally, research indicated that the park was established in 1994 after the designation of Unit P04A. However, new information that part of the park was acquired in 1989 was obtained recently from the Florida Department of Environmental Protection (FDEP). Not enough information has been collected at this time to propose reclassification of the park to an OPA. The park is managed by the FDEP.

Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	675.1	42.6	632.5	0.4	
Added to the CBRS	61.5	1.2	60.3		0
Removed from the CBRS	15.4	0.1	15.3		4
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	721.2	43.7	677.5	0.4	
Net Change	46.1	1.1	45.0	0.0	(4)

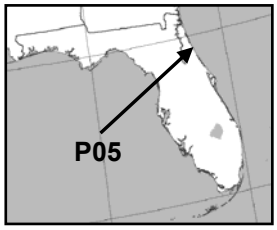
1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1999 and 2004 aerial photography, and 2003 St. Johns County property parcel information

John H. Chafee Coastal Barrier Resources System Unit P05, Conch Island, Florida

Type of Unit: System unit
Location of Unit: East of St. Augustine on the Atlantic Coast, in St. Johns County
Congressional District: 7
Establishment of Unit: Coastal Barrier Resources Act (P.L. 97-348) enacted on 10/18/1982
Historical Changes to Unit:
11/16/1990: P.L. 101-591 added associated aquatic habitat and undeveloped barrier to Unit P05.

11/12/1996: P.L. 104-333 modified the northern boundary of Unit P05 to remove certain property. The map was later invalidated through a lawsuit brought against the U.S. Fish and Wildlife Service by Coastal Alliance. (Civil Action No. 97-1344 (D.D.C.))

10/21/1998: P.L. 105-277 reinstated the map modifying Unit P05 that was previously invalidated.
Existing Boundary Description: The northern boundary of Unit P05 crosses Vilano Point north of Saint Augustine Inlet, cutting through development in the Porpoise Point subdivision, turns north to generally follow the riverside shoreline of Vilano Point, crosses the Tolomato River at the old Vilano Beach bridge, and generally follows the wetland/fastland interface. The landward boundary generally follows the wetland/fastland interface along the western Matanzas River shoreline to the Castillo de San Marcos National Monument. The southern boundary extends to the center of Matanzas River, curves around Anastasia Island, turns south down the approximate center of Salt Run, and cuts across Bird Island.
Proposed Changes to Boundary: The northern boundary of Unit P05 is aligned with digital property parcel data to precisely exclude from the unit all of the properties that were intended to be excluded by P.L. 105-277, and is adjusted to follow more precisely the Vilano Point riverside shoreline and the wetland/fastland interface on the west side of the Tolomato River. The landward boundary is adjusted to follow more precisely the wetland/fastland interface and to extend to the Bridge of Lions to include associated aquatic habitat which is part of Matanzas River. The southern boundary is adjusted to include the entire Salt Run channel and to align



with the proposed boundaries of Unit P05P.
Additional Comments: When Conch Island was established as Unit P05 in 1982, approximately half of the island had already been sold to the State and turned over to the State of Florida park system. The southern portion of Conch Island is proposed for reclassification from System Unit P05 to otherwise protected area Unit P05P because this land was held for conservation/recreation at the time Unit P05 was established.

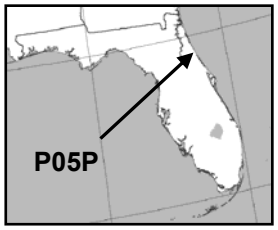
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	1,955.2	617.6	1,337.6	2.6	
Added to the CBRS	253.4	0.1	253.3		0
Removed from the CBRS	13.0	3.7	9.3		7
Reclassified Area	(370.6)	(211.3)	(159.3)	(1.0)	
Proposed Unit	1,825.0	402.7	1,422.3	1.6	
Net Change	(130.2)	(214.9)	84.7	(1.0)	(7)

[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1999 and 2004 aerial photography, and 2003 St. Johns County property parcel information

John H. Chafee Coastal Barrier Resources System Unit P05P, Conch Island, Florida

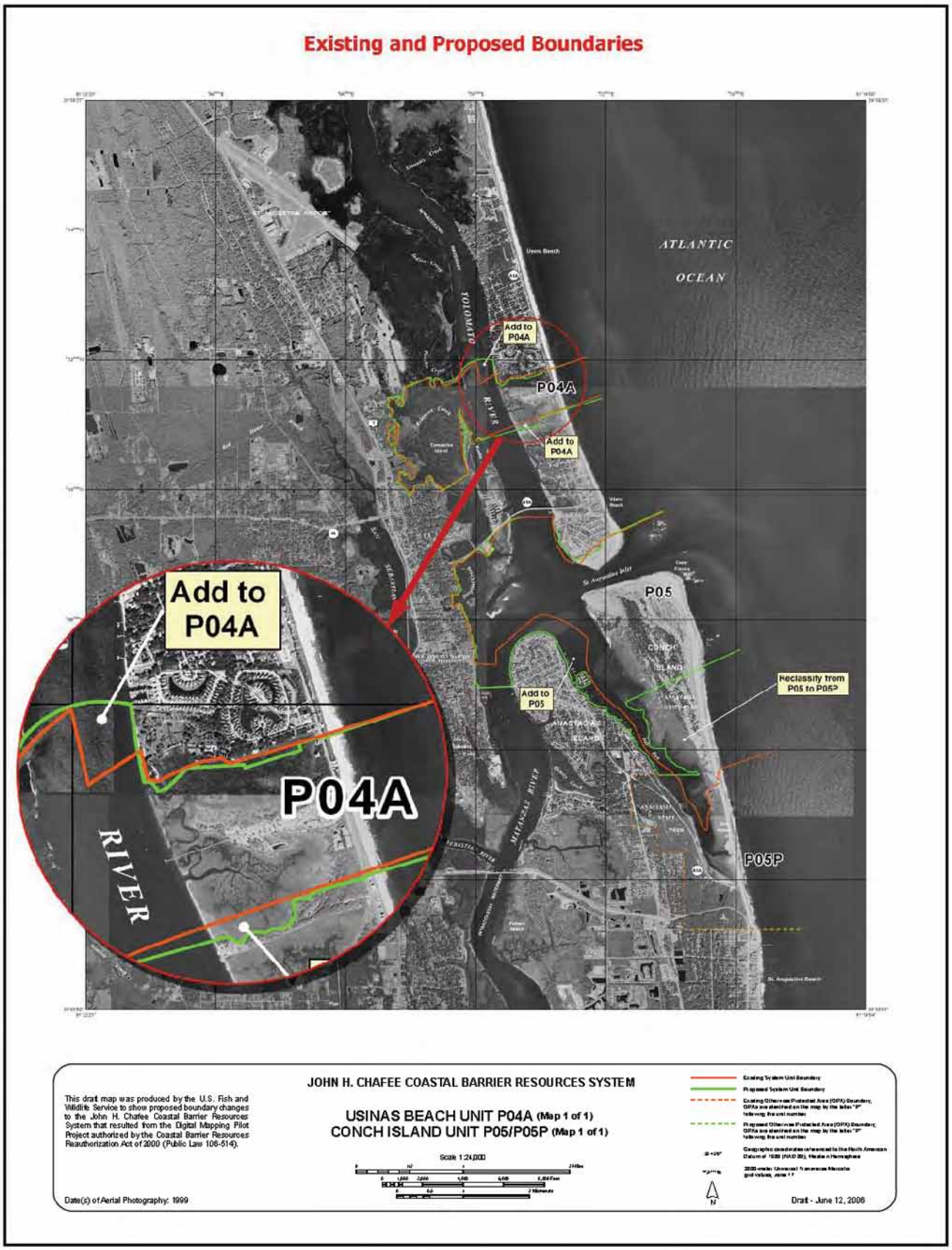
Type of Unit: Otherwise protected area (OPA)
Location of Unit: East of St. Augustine on the Atlantic Coast, in St. Johns County
Congressional District: 7
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: 10/21/1998: P.L. 105-277 made changes to the boundaries of adjacent Unit P05. No changes were made to the boundaries of OPA Unit P05P at that time.
Underlying Conservation/Recreation Area(s) in OPA: Anastasia State Park, owned by the Florida Department of Environmental Protection. The land was first reserved for conservation in 1949 and additional parcels were purchased over time.
Existing Boundary Description: The western and southern boundaries of Unit P05P generally follow the boundaries of Anastasia State Park. The northern boundary roughly follows the boundary of Anastasia State Park as it existed prior to 1981.
Proposed Changes to Boundary: The boundaries of Unit P05P are aligned with the boundaries of Anastasia State Park as it existed when the adjacent Unit P05 was established in 1982.
Additional Comments: There are no known private inholdings within Unit P05P. When Unit P05 was mapped in 1982, approximately half of Conch Island included land that had already been sold to the State of Florida and turned over to the State park system. The southern portion of Conch Island is proposed for reclassification from System Unit P05 to OPA Unit P05P because this land was held for conservation or recreation at the time Unit P05 was established.



Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	601.5	438.7	162.8	1.5	
Added to the CBRS	1.9	1.9	0.0		0
Removed from the CBRS	1.5	1.4	0.1		1
Reclassified Area	370.6	211.3	159.3	1.0	
Proposed Unit	972.5	650.5	322.0	2.6	
Net Change	371.0	211.8	159.2	1.1	(1)

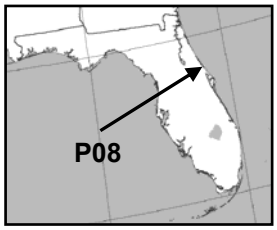
[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1999 and 2004 aerial photography, and 2003 St. Johns County property parcel information



This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit P08, Ponce Inlet, Florida

Type of Unit: System unit
Location of Unit: South of St. Augustine on the Atlantic Coast, in Volusia County.
Congressional District: 24
Establishment of Unit: Coastal Barrier Resources Act (P.L. 97-348) enacted on 10/18/1982
Historical Changes to Unit: 11/16/1990: P.L. 101-591 added associated aquatic habitat to Unit P08.
Existing Boundary Description: The northern boundary of Unit P08 cuts across the barrier spit north of Ponce de Leon Inlet. It continues westward, following the eastern side of the Halifax River, then follows the approximate center of Spruce Creek. The landward boundary roughly follows the wetland/fastland interface. South of Redland Canal, the landward boundary turns east and generally follows the western edge of Ponce de Leon Cut to go around a developed area. The southern boundary is located north of a developed area and roughly follows the center of waterways and the wetland/fastland interface where there is no channel. The boundary then crosses Indian River North, turns north to follow the eastern side of the river, and cuts across the barrier spit south of Ponce de Leon Inlet into the Atlantic Ocean.
Proposed Changes to Boundary: The northern boundary of Unit P08 is adjusted to align with digital property parcel data to include undeveloped fastland; align with the boundaries of the proposed new otherwise protected area (OPA) Unit P08P; follow more precisely the eastern side of the Halifax River; and include the entire Spruce Creek channel. The landward boundary is adjusted to follow more precisely the wetland/fastland interface and the western edge of the Ponce de Leon Cut. The southern boundary is adjusted to follow more precisely the wetland/fastland interface and to include the entire channel north of the development. The boundary is also extended south along the channel of Indian River North to the State Highway 44 bridge to include all of a developing sandbar and is adjusted to follow more precisely the eastern edge of Indian River North.



Additional Comments: There are three conservation/recreation areas located within Unit P08, two of which were held for conservation or recreation in 1982 when Unit P08 was established. Lighthouse Point Park, held as a conservation area since 1980, and Smyrna Dunes Park, conserved since 1982, are both managed by Volusia County Leisure Services. These parks are proposed for reclassification from System Unit P08 to new OPA Unit P08P.

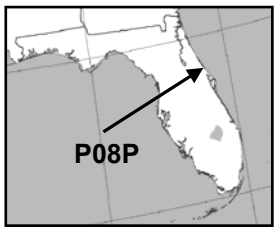
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	4,185.3	627.7	3,557.6	1.9	
Added to the CBRS	162.5	5.6	156.9		0
Removed from the CBRS	25.3	0.0	25.3		0
Reclassified Area	(328.4)	(228.6)	(99.8)	(1.2)	
Proposed Unit	3,994.1	404.7	3,589.4	0.7	
Net Change	(191.2)	(223.0)	31.8	(1.2)	0

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1998 and 2004 aerial photography, and 2005 Volusia County property parcel information

John H. Chafee Coastal Barrier Resources System Unit P08P, Ponce Inlet, Florida

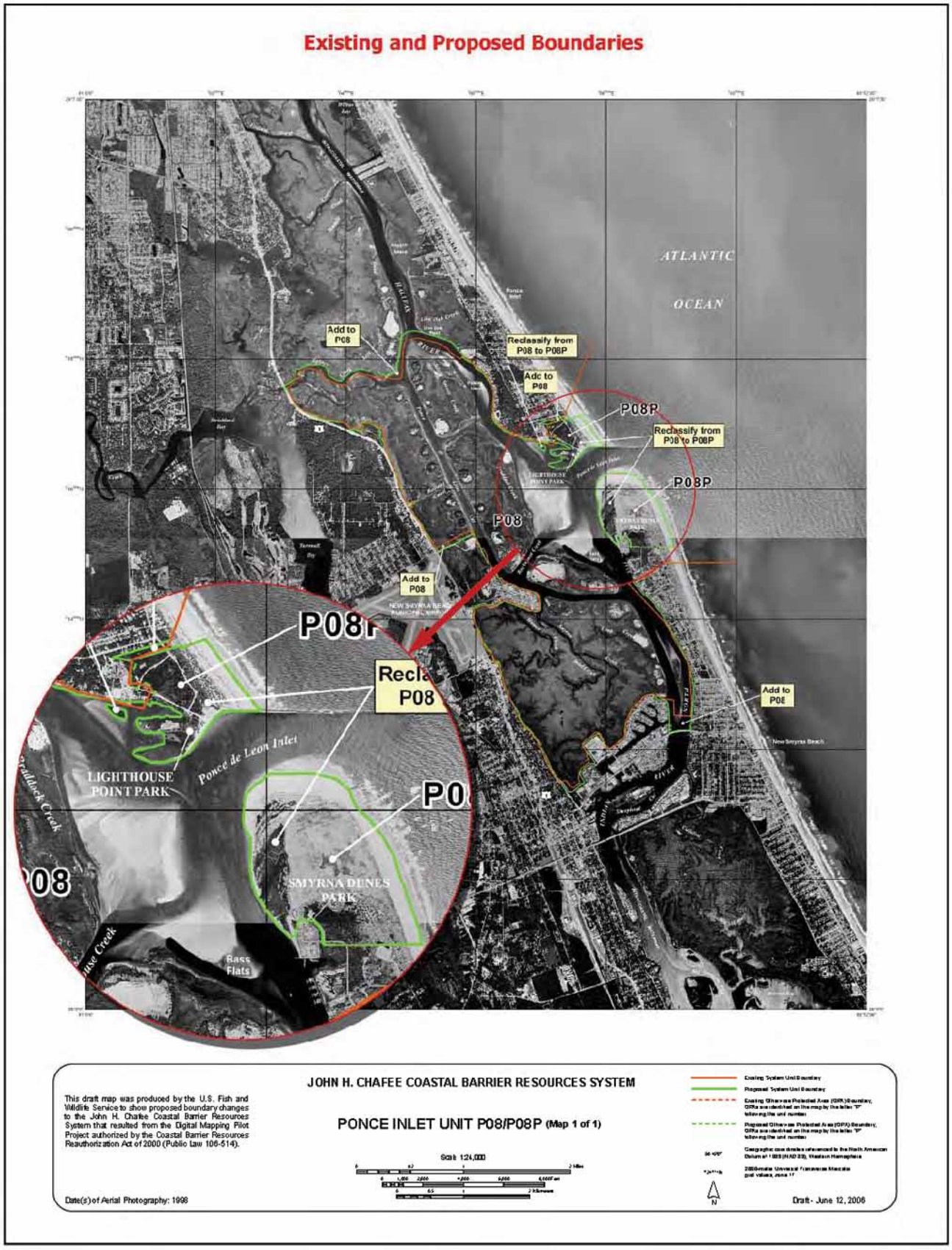
Type of Unit: Proposed new otherwise protected area (OPA)
Location of Unit: South of St. Augustine on the Atlantic Coast, in Volusia County
Congressional District: 24
Current CBRS Status: The proposed new OPA Unit P08P is located entirely within the boundaries of existing System Unit P08.
Otherwise Protected Area Criteria: The proposed new unit meets the Coastal Barrier Improvement Act definition of an OPA. Smyrna Dunes Park is owned by the U.S. Coast Guard and was leased to Volusia County in September 1982 for the purpose of establishing a public park. Lighthouse Point Park, owned by the State of Florida since 1970, has been managed as a conservation area since 1980. Currently the park is managed by Volusia County Leisure Services.
Proposed Boundaries: The boundaries of proposed new Unit P08P follow the boundaries of Smyrna Dunes Park and Lighthouse Point Park.
Additional Comments: There are no known private inholdings within the proposed new Unit P08P. A 2.7-acre parcel within Smyrna Dunes Park is leased to the U.S. Air Force for purposes other than conservation or recreation. Smyrna Dunes Park and Lighthouse Point Park are proposed for reclassification from System Unit P08 to new OPA P08P because this land was held for conservation or recreation when Unit P08 was established in 1982.



Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	0.0	0.0	0.0	0.0	
Added to the CBRS	0.4	0.4	0.0		0
Removed from the CBRS	0.0	0.0	0.0		0
Reclassified Area	328.4	228.6	99.8	1.2	
Proposed Unit	328.8	229.0	99.8	1.2	
Net Change	328.8	229.0	99.8	1.2	0

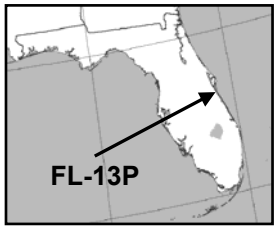
[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1998 and 2004 aerial photography, and 2005 Volusia County property parcel information



This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit FL-13P, Spessard Holland Park, Florida

Type of Unit: Otherwise protected area (OPA)
Location of Unit: South of Palm Bay on the Atlantic Coast, in Brevard County
Congressional District: 15
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to the boundaries of OPA Unit FL-13P since its designation in 1990.
Underlying Conservation/Recreation Area(s) in OPA: Flutie Athletic Complex, Spessard Holland North and South Beach Parks, and Spessard Holland Golf Course, which are all owned by the Brevard County Parks and Recreation Department.
Existing Boundary Description: The boundaries of Unit FL-13P generally follow the boundaries of lands managed by the Brevard County Parks and Recreation Department.
Proposed Changes to Boundary: The boundaries of Unit FL-13P are aligned with the boundaries of lands managed by the Brevard County Parks and Recreation Department.
Additional Comments: There are no known private inholdings within Unit FL-13P. A U.S. Air Force Radar Tracking Station is included within the OPA. The property is owned by the Brevard County Parks and Recreation Department and leased to the U.S. Air Force. The proposed adjustment of Unit FL-13P boundaries remove from the OPA minor portions of privately owned property that are not held for conservation or recreation and are not inholdings of lands managed by the Brevard County Parks and Recreation Department.



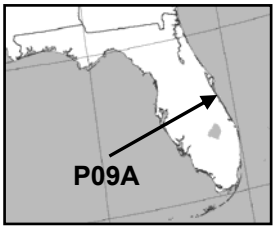
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	178.2	139.8	38.4	0.8	
Added to the CBRS	2.2	2.2	0.0		0
Removed from the CBRS	4.0	3.2	0.8		25
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	176.4	138.8	37.6	0.8	
Net Change	(1.8)	(1.0)	(0.8)	0.0	(25)

[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1999 and 2004 aerial photography, and 1995 Brevard County property parcel information

John H. Chafee Coastal Barrier Resources System Unit P09A, Coconut Point, Florida

Type of Unit: System unit
Location of Unit: North of Vero Beach on the Atlantic Coast, in Brevard County
Congressional District: 15
Establishment of Unit: Coastal Barrier Resources Act (P.L. 97-348) enacted on 10/18/1982
Historical Changes to Unit: 11/16/1990: P.L. 101-591 added associated aquatic habitat and undeveloped areas to Unit P09A.
Existing Boundary Description: The northern boundary of Unit P09A crosses through development on the barrier near the break-in-development and extends across the Indian River to the mainland. The landward boundary generally follows the shoreline. The southern boundary extends across the Indian River and passes through development on the barrier. The boundary of the northern excluded area surrounds an area of developed and undeveloped land. The boundary of the southern excluded area excludes undeveloped land on the north, cuts through development on the south, and generally follows the shoreline on the east and west.
Proposed Changes to Boundary: The northern boundary of Unit P09A and the boundary of the northern excluded area are aligned with the boundaries of the proposed new Unit P09AP. The landward boundary is adjusted to follow the shoreline more precisely. The southern boundary is shifted north to align with the digital property parcel data of a property on the east side of State Highway A1A that was intended to be excluded in 1982, as indicated by U.S. Fish and Wildlife Service records. The southern excluded area is shifted to the south and aligned with digital property parcel data to exclude a cluster of development that was on the ground in 1982 when Unit P09A was established.
Additional Comments: There are numerous conservation or recreation areas located within Unit P09A, but only Coconut Point Park (managed by the Brevard County Parks and Recreation Department) was held for conservation or recreation when the area was



added to the John H. Chafee Coastal Barrier Resources System (CBRS) in 1990. Currently, only the northern half of the park is located within Unit P09A, and the southern half of the park is not within the CBRS. To add the entire park within the proposed new OPA Unit P09AP, the northern portion is proposed for reclassification from System Unit to OPA status, and the southern portion is proposed for addition to the OPA for the first time.

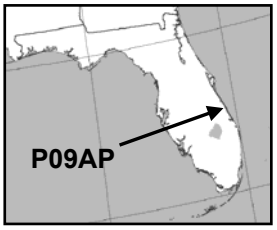
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	3,204.6	277.4	2,927.2	2.0	
Added to the CBRS	28.5	7.4	21.1		0
Removed from the CBRS	30.3	11.4	18.9		31
Reclassified Area	(30.1)	(26.4)	(3.7)	(0.2)	
Proposed Unit	3,172.7	247.0	2,925.7	1.8	
Net Change	(31.9)	(30.4)	(1.5)	(0.2)	(31)

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1999 and 2004 aerial photography, and 1995 Brevard County property parcel information

John H. Chafee Coastal Barrier Resources System Unit P09AP, Coconut Point, Florida

Type of Unit: Proposed new otherwise protected area (OPA)
Location of Unit: North of Vero Beach on the Atlantic Coast, in Brevard County
Congressional District: 15
Current CBRS Status: Part of the proposed new OPA P09AP is within existing System Unit P09A. The remainder of the proposed new OPA is not currently within the John H. Chafee Coastal Barrier Resources System.
Otherwise Protected Area Criteria: The proposed new unit meets the Coastal Barrier Improvement Act definition of an OPA. Coconut Point Park, managed by the Brevard County Parks and Recreation Department, has been held for conservation since 1988. Archie Carr National Wildlife Refuge (NWR), managed by the U.S. Fish and Wildlife Service, was acquired over time starting in 1991.
Proposed Boundaries: The boundaries of the proposed new unit are aligned with the boundaries of Coconut Point Park and the Archie Carr NWR.
Additional Comments: There are no known private inholdings within the proposed new Unit P09AP. The northern half of Coconut Point Park is currently located within Unit P09A, and the southern half of the park is within the northern excluded area of Unit P09A. The northern portion of the park is proposed for reclassification from System Unit P09A to new OPA Unit P09AP because this land was held for conservation or recreation when it was added to Unit P09A. The southern portion of the park is proposed for addition to new OPA P09AP because this land is held for conservation or recreation and is currently not within the CBRS.

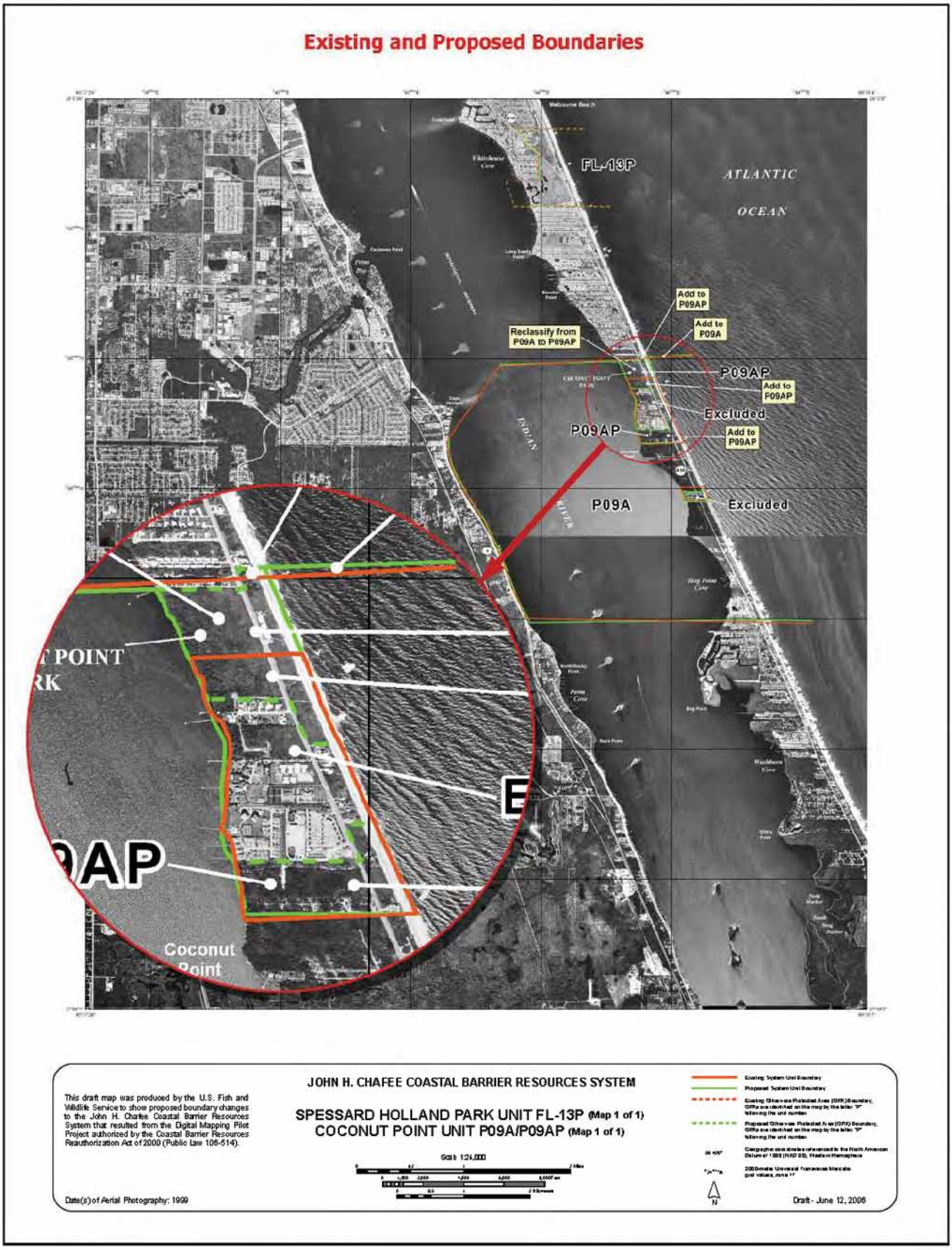


Archie Carr NWR is composed of numerous unconnected parcels along a 20.5 mile stretch of beach between Melbourne and Wabasso. Only the Archie Carr NWR parcels near Coconut Point Park and currently not within System Unit P09A are proposed for addition to new OPA Unit P09AP.

Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	0.0	0.0	0.0	0.0	
Added to the CBRS	59.8	51.2	8.6		1[4]
Removed from the CBRS	0.0	0.0	0.0		0
Reclassified Area	30.1	26.4	3.7	0.2	
Proposed Unit	89.9	77.6	12.3	0.7	
Net Change	89.9	77.6	12.3	0.7	1

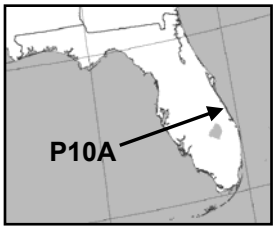
1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1999 and 2004 aerial photography, and 1995 Brevard County property parcel information
4 According to the refuge manager, this structure is a former private residence now owned by Archie Carr Wildlife Natural Refuge



This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit P10A, Blue Hole, Florida

Type of Unit: System unit
Location of Unit: Southeast of Vero Beach on the Atlantic Coast, in Indian River and St. Lucie Counties
Congressional Districts: 15 and 16
Establishment of Unit: Coastal Barrier Resources Act (P.L. 97-348) enacted on 10/18/1982
Historical Changes to Unit: 11/16/1990: P.L. 101-591 added associated aquatic habitat and undeveloped land to Unit P10A and removed a small area that was developed in 1982.
Existing Boundary Description: The northern and southern boundaries of Unit P10A cross the barrier roughly at the break-in-development, and then cross the Indian River. The landward boundary generally follows the wetland/fastland interface. The excluded area roughly surrounds an area of development, with the northern boundary of the excluded area bisecting several structures.
Proposed Changes to Boundary: The northern boundary of Unit P10A is aligned with digital property parcel data to follow more precisely the 1982 break-in-development and is adjusted to include associated aquatic habitat. The landward boundary is adjusted to follow more precisely the wetland/fastland interface. The boundary is adjusted to the south to include associated aquatic habitat surrounding otherwise protected area (OPA) Unit FL-14P. Some of the associated aquatic habitat is currently located within Unit FL-14P, but is proposed for reclassification from OPA to System Unit status as part of Unit P10A because Volume 14 of the Department of the Interior's 1988 Report to Congress: Coastal Barrier Resources System, Recommendations for Additions to or Deletions from the Coastal Barrier Resources System, stated that in Florida, Aquatic Preserves and Outstanding Florida Waters do not meet the definition of "otherwise protected." The northern and southern boundaries of the excluded area are aligned with digital property parcel data to follow more precisely the 1982 break-in-development, and the eastern and western boundaries are adjusted to follow more precisely the shoreline.
Additional Comments: There are three conservation areas located within Unit P10A. Avalon State Park, managed by the Florida Department of Environmental Protection was acquired in 1985. Queens Island Preserve and Indrio Blueway Buffer, both managed by the St. Lucie County Public Works Department, were acquired in 1996 and 2003, respectively. Because these areas were acquired for conservation/recreation purposes after Unit P10A was established, they are not proposed for reclassification from System Unit to OPA status.



The proposed adjustments to the boundaries of Unit P10A add undeveloped fastland to the unit.

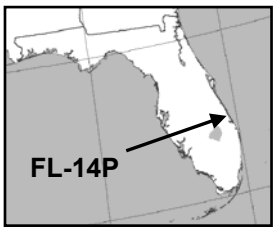
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	5,569.8	751.5	4,818.3	3.4	
Added to the CBRS	2,163.5	9.7	2,153.8		0
Removed from the CBRS	23.9	10.3	13.6		8
Reclassified Area	1,205.0	33.3	1,171.7	0.0	
Proposed Unit	8,914.4	784.2	8,130.2	3.6	
Net Change	3,344.6	32.7	3,311.9	0.2	(8)

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1999 and 2004 aerial photography, and 2005 St. Lucie, Indian River County property parcel information

John H. Chafee Coastal Barrier Resources System Unit FL-14P, Pepper Beach, Florida

Type of Unit: Otherwise protected area (OPA)
Location of Unit: East of Ft. Pierce on the Atlantic Coast, in St. Lucie County.
Congressional District: 16
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to the boundaries of Unit FL-14P since its designation in 1990.
Underlying Conservation/Recreation Area(s) in OPA: Fort Pierce Inlet State Park owned by the Florida Department of Environmental Protection. Pepper Park, managed by the St. Lucie County Parks and Recreation Department. Wildcat Cove Natural Area, managed by the St. Lucie County Environmental Resources Department. Coon Island County Park, managed by the St. Lucie County Environmental Resources Department. Kings Island Natural Area, managed by the St. Lucie County Environmental Resources Department
Existing Boundary Description: The boundaries of Unit FL-14P include Fort Pierce and Pepper Beach State Recreation Areas as they existed in 1990. The western boundary of the OPA follows the Intracoastal Waterway, and the unit is divided into two segments by the exclusion of the State Highway A1A bridge north of the inlet.
Proposed Changes to Boundary: Volume 14 of the Department of the Interior's 1988 Report to Congress: Coastal Barrier Resources System, Recommendations for Additions to or Deletions from the Coastal Barrier Resources System states that in Florida, Aquatic Preserves and Outstanding Florida Waters do not meet the definition of "otherwise protected"; therefore, all the open water on the protected side of the coastal barrier in Unit FL-14P, which was in the Indian River Aquatic Preserve at the time it was established within the OPA, is proposed for reclassification as part of System Unit P10A. Remaining OPA boundaries are aligned to park boundary lines. The Kings Island Natural Area property was sold to St. Lucie County for conservation or recreation purposes in 1998 and is managed by the St. Lucie County Environmental Resources Department. The park is not currently within Unit FL-14P, but is proposed for inclusion in this OPA unit.



Additional Comments: There are no known private inholdings within the proposed boundaries of Unit FL-14P. Pepper Beach State Recreation Area was removed from the Florida State park system after 1990; the property was then subdivided into three county-owned conservation and recreation areas. No development has occurred as a result of the change in ownership.

Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	2,578.0	231.6	2,346.4	0.7	
Added to the CBRS	215.3	15.7	199.6		1
Removed from the CBRS	17.7	8.9	8.8		3
Reclassified Area	(1,205.0)	(33.3)	(1,171.7)	0.0	
Proposed Unit	1,570.6	205.1	1,365.5	0.7	
Net Change	(1,007.4)	(26.5)	(980.9)	0.0	(2)

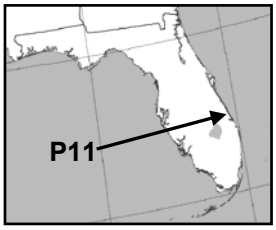
[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1999 and 2004 aerial photography, and 2005 St. Lucie County property parcel information

John H. Chafee Coastal Barrier Resources System Unit P11, Hutchinson Island, Florida

Type of Unit: System unit
Location of Unit: East of Port St. Lucie on the Atlantic Coast, in St. Lucie County
Congressional District: 16
Establishment of Unit: Coastal Barrier Resources Act (P.L. 97-348) enacted on 10/18/1982
Historical Changes to Unit:
11/16/1990: P.L. 101-591 added associated aquatic habitat and undeveloped coastal barrier areas to Unit P11 and removed a small area that was developed in 1982.

11/12/1996: P.L. 104-333 modified the northern boundary of the southernmost excluded area to remove private property from Unit P11. The map was later invalidated through a lawsuit brought against the U.S. Fish and Wildlife Service by Coastal Alliance. (Civil Action No. 97-1344 (D.D.C.))

10/12/1998: P.L. 105-277 reinstated the map modifying Unit P11 that was previously invalidated.
Existing Boundary Description:
The northern boundary of Unit P11 roughly follows the break-in-development, extends around Hook Point, and cuts west across the Indian River to the mainland. The landward boundary follows the shoreline of the mainland. The southern boundary crosses the Indian River across from Nettles Island, follows the center of a waterway between Nettles Island and Hutchinson Island, and generally follows the wetland/fastland interface as it crosses Hutchinson Island, passing through development before turning east to extend into the Atlantic Ocean. The boundary of the northern excluded area roughly encircles the Hutchinson Island Nuclear Power Plant. The middle excluded area roughly surrounds an area of development containing condominiums, but bisects structures on the north and south. The southern excluded area roughly surrounds an area of development containing condominiums, single family homes, and a golf course.
Proposed Changes to Boundary: The northern boundary of Unit P11 is aligned with digital property parcel data to follow more precisely the 1982 break-in-development and is adjusted to include associated aquatic habitat in Jennings Cove to the east of Hook Point. The landward boundary is adjusted to follow the shoreline more precisely. The southern boundary is adjusted to include associated aquatic habitat in the channel between Nettles Island and Hutchinson Island, follow the wetland/fastland interface more precisely, and remove development that was on the ground in 1990 when this area was added to Unit P11. The eastern and western boundaries of the northern excluded area are adjusted to follow more precisely the shoreline. The southern boundary is adjusted to add mangroves to the Unit. The northern, eastern, and southern boundaries of the middle excluded area are aligned with digital property parcel data to remove development that was on the ground in 1982 when Unit P11 was established. The western boundary is extended to the north and south to follow the 1982 break-in-development. The northern boundary of the southern excluded



area is aligned with digital property parcel data of the properties that were intended to be excluded by P.L. 105-277. The western boundary is adjusted to follow the Indian River shoreline and the 1990 break-in-development. The eastern boundary is aligned with digital property parcel data that follows the Atlantic Ocean shoreline. The southern boundary is aligned with digital property parcel data to remove development that was on the ground in 1982 when Unit P11 was established.
Additional Comments: There are numerous conservation or recreation areas located within Unit P11, but only Frederick Douglass Memorial Park was held for conservation or recreation when the area was added to Unit P11. This park, owned by the St. Lucie County Parks and Recreation Department, has been maintained for conservation or recreation since approximately 1940. Thus, Frederick Douglass Memorial Park is proposed for reclassification from System Unit P11 to new otherwise protected area Unit P11P.

John H. Chafee Coastal Barrier Resources System
P11, Hutchinson Island, Florida (continued)

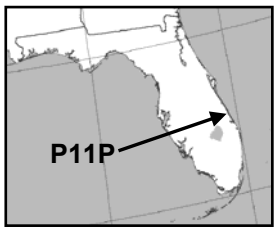
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	16,124.2	676.9	15,447.3	9.2	
Added to the CBRS	66.6	3.1	63.5		0
Removed from the CBRS	72.2	25.5	46.7		18
Reclassified Area	(16.2)	(7.7)	(8.5)	(0.2)	
Proposed Unit	16,102.4	646.8	15,455.6	9.0	
Net Change	(21.8)	(30.1)	8.3	(0.2)	(18)

[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1999 and 2004 aerial photography, and 2005 St. Lucie County property parcel information

John H. Chafee Coastal Barrier Resources System Unit P11P, Hutchinson Island, Florida

Type of Unit: Proposed new otherwise protected area (OPA)
Location of Unit: East of Port St. Lucie on the Atlantic Coast, in St. Lucie County
Congressional District: 16
Current CBRS Status: The proposed new OPA Unit P11P is located entirely within the boundaries of existing Unit P11.
Otherwise Protected Area Criteria: The proposed new Unit P11P meets the Coastal Barrier Improvement Act definition of an OPA. Frederick Douglass Memorial Park, owned by the St. Lucie County Parks and Recreation Department, has been maintained for conservation purposes since approximately 1940.
Proposed Boundaries: The proposed boundaries of Unit P11P follow the boundaries of Frederick Douglass Memorial Park.
Additional Comments: There are no known private inholdings within the proposed new Unit P11P. Frederick Douglass Memorial Park is proposed for reclassification from System Unit P11 to proposed new OPA P11P because this land was held for conservation or recreation when it was first added to Unit P11 in 1982.

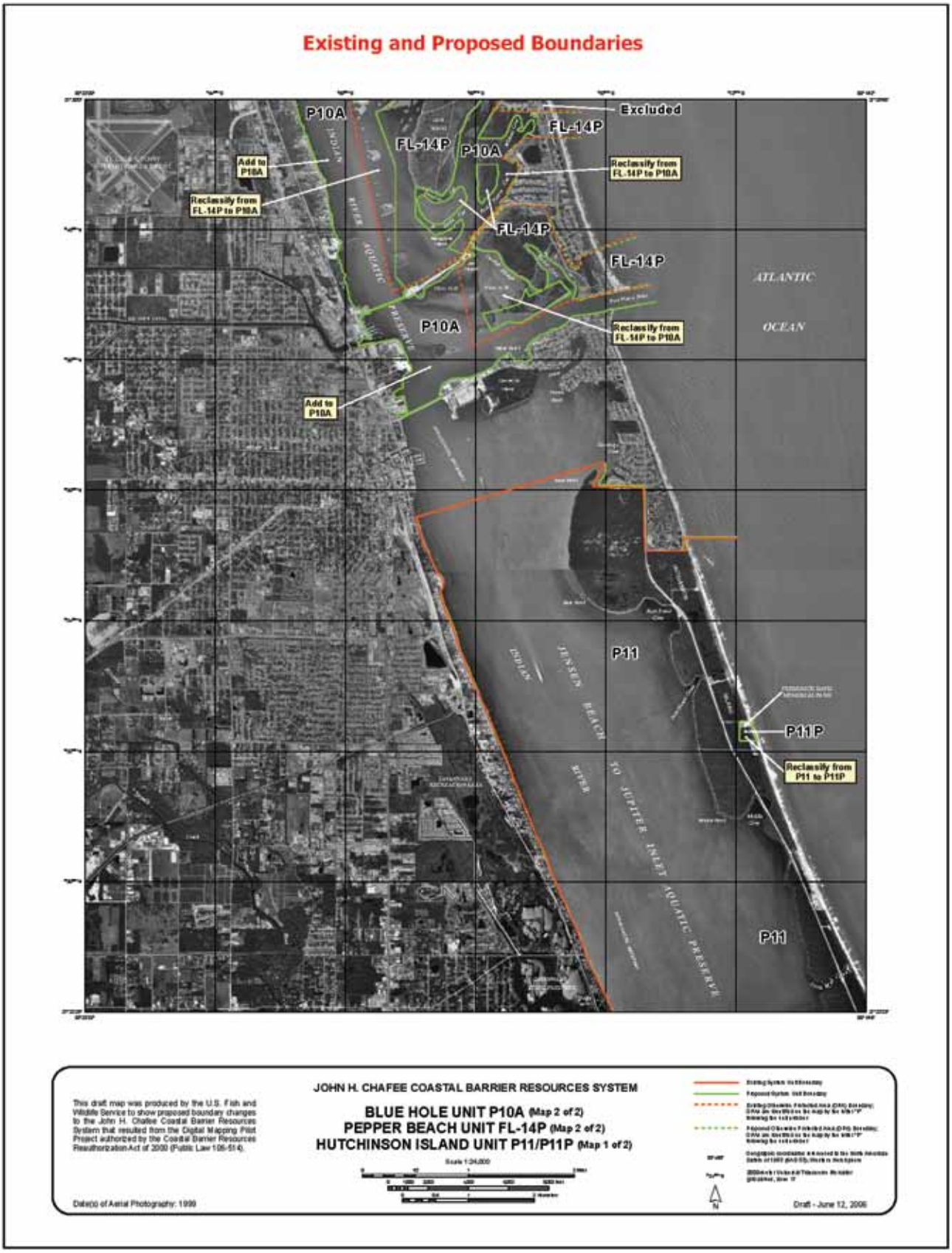


Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	0.0	0.0	0.0	0.0	
Added to the CBRS	0.3	0.0	0.3		N/A
Removed from the CBRS	0.0	0.0	0.0		N/A
Reclassified Area	16.2	7.7	8.5	0.2	
Proposed Unit	16.5	7.7	8.8	0.2	
Net Change	16.5	7.7	8.8	0.2	N/A

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count not conducted; no fastland added or removed

This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.



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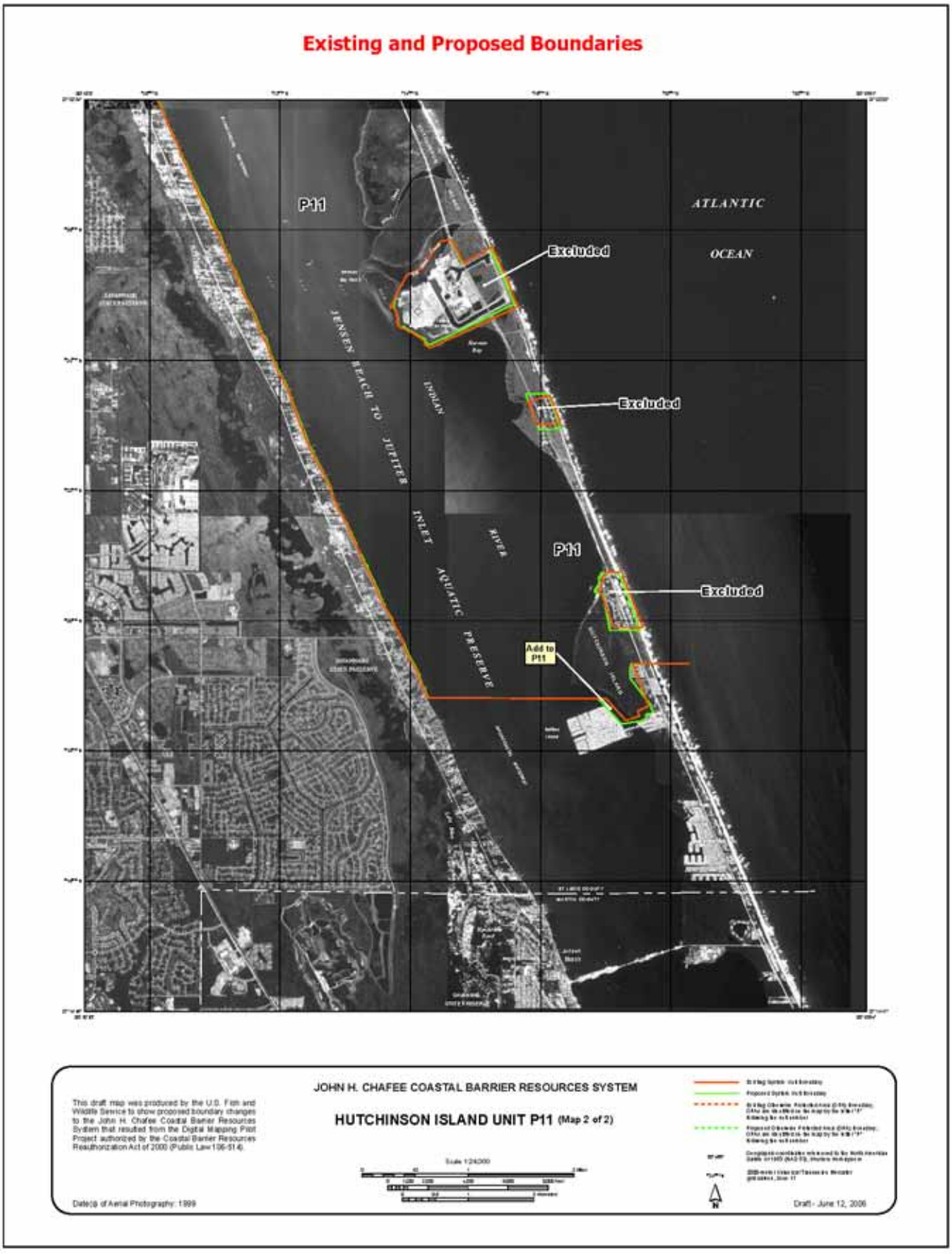
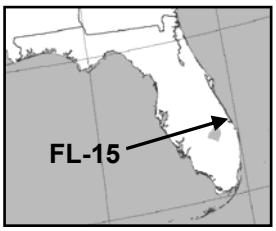


This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit FL-15, Blowing Rocks, Florida

Type of Unit: System unit
Location of Unit: North of West Palm Beach on the Atlantic Coast, in Martin County
Congressional District: 16
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: 11/2/1994: P.L. 103-461 modified the northern and southern boundaries of Unit FL-15 to only include areas that were undeveloped at the time of their inclusion in Unit FL-15.
Existing Boundary Description: The northern and southern boundaries of Unit FL-15 generally follow the breaks-in-development. The landward boundary roughly follows the shoreline of the mainland.
Proposed Changes to Boundary: The northern and southern boundaries of Unit FL-15 are aligned with digital property parcel data to exclude land that was developed prior to 1990 when Unit FL-15 was established, as intended by P.L. 103-461. The landward boundary is adjusted to follow more precisely the shoreline.
Additional Comments: Some of the land within Unit FL-15 was owned by The Nature Conservancy prior to the designation of Unit FL-15 in 1990. Volume 14 of the Department of the Interior's 1988 Report to Congress: Coastal Barrier Resources System, Recommendations for Additions to or Deletions from the Coastal Barrier Resources System included comments from the State of Florida that supported the designation of privately owned land held for conservation purposes as System units, and not as otherwise protected areas, in order to prohibit the availability of Federal funds should the land ever be sold by private owners for development. Congress then enacted the Coastal Barrier Improvement Act of 1990 that established the area as System Unit FL-15.



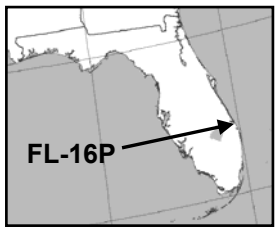
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	218.4	84.2	134.2	1.0	
Added to the CBRS	6.8	1.7	5.1		0
Removed from the CBRS	16.6	1.9	14.7		2
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	208.6	84.0	124.6	1.0	
Net Change	(9.8)	(0.2)	(9.6)	0.0	(2)

[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1999 and 2004 aerial photography, and 2005 Martin County property parcel information

John H. Chafee Coastal Barrier Resources System Unit FL-16P, Jupiter Beach, Florida

Type of Unit: Otherwise protected area (OPA)
Location of Unit: North of West Palm Beach on the Atlantic Coast, in Palm Beach County
Congressional District: 16
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to Unit FL-16P since its designation in 1990.
Underlying Conservation/Recreation Area(s) in OPA: DuBois Park and Jupiter Beach Park, both owned by the Palm Beach County Parks and Recreation Department.
Existing Boundary Description: The northern boundary of Unit FL-16P generally follows the center of Jupiter Inlet. The remaining boundaries roughly follow the boundaries of DuBois and Jupiter Beach Parks.
Proposed Changes to Boundary: The northern boundary of Unit FL-16P is adjusted to follow the channel center until it enters the Atlantic Ocean. The remaining



boundaries of Unit FL-16P are aligned with the boundaries of DuBois Park and Jupiter Beach Park.
Additional Comments: There are no known private inholdings within Unit FL-16P.

Acreage, Shoreline, and Structures:

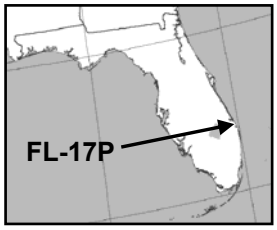
	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	55.0	27.8	27.2	0.4	
Added to the CBRS	14.9	6.0	8.9		0
Removed from the CBRS	0.3	0.0	0.3		0
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	69.6	33.8	35.8	0.4	
Net Change	14.6	6.0	8.6	0.0	0

[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1999 and 2004 aerial photography, and 2002 Palm Beach County property parcel information

John H. Chafee Coastal Barrier Resources System Unit FL-17P, Carlin, Florida

Type of Unit: Otherwise protected area (OPA)
Location of Unit: North of West Palm Beach on the Atlantic Coast, in Palm Beach County
Congressional Districts: 16 and 22
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to Unit FL-17P since its designation in 1990.

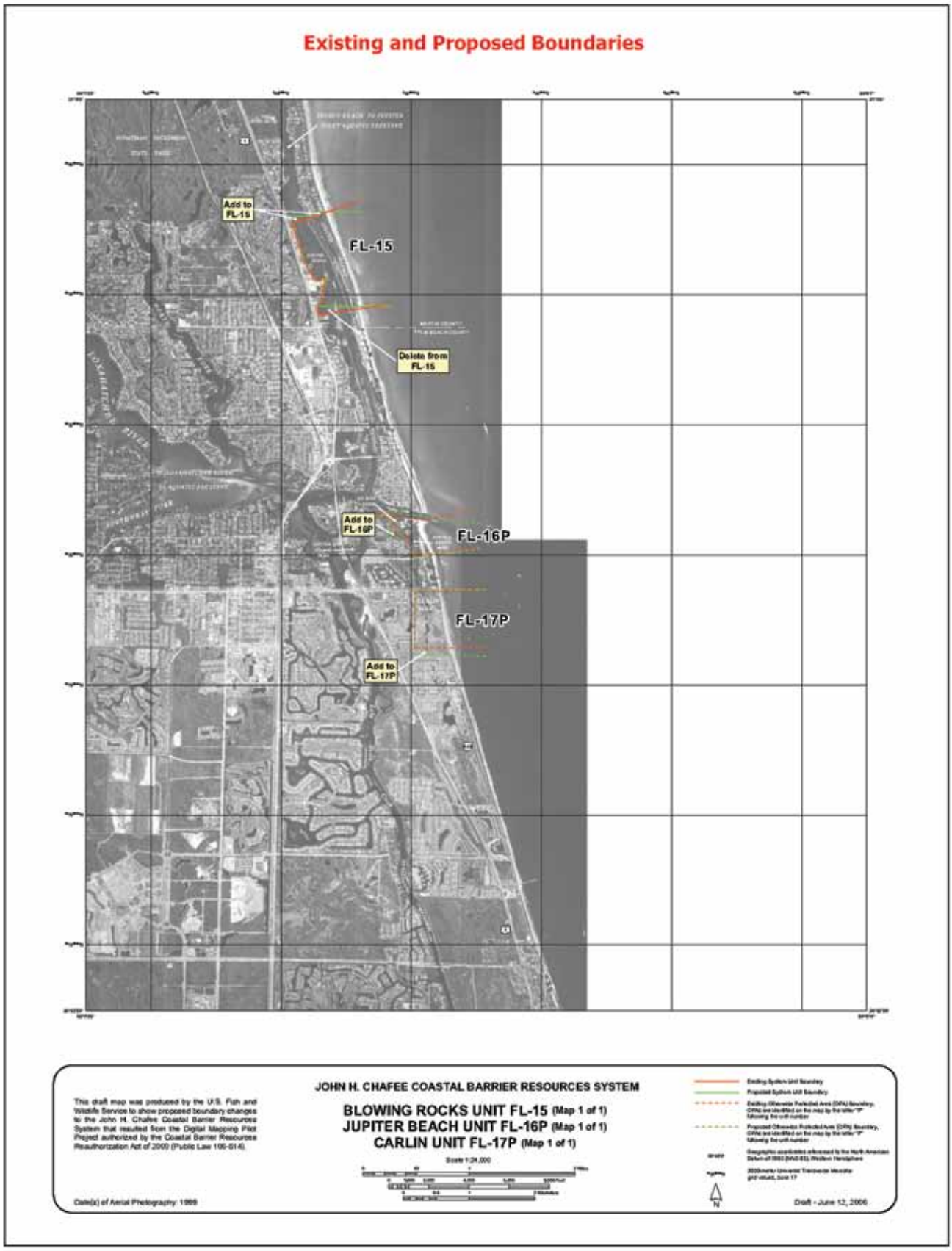
Underlying Conservation/Recreation Area(s) in OPA: Carlin Park, managed by the Palm Beach County Parks and Recreation Department.
Existing Boundary Description: The boundaries of Unit FL-17P roughly follow the boundaries of Carlin Park.
Proposed Changes to Boundary: The boundaries of Unit FL-17P are more precisely aligned with the boundaries of Carlin Park.
Additional Comments: There are no known private inholdings within Unit FL-17P. The proposed adjustments to the landward boundary remove minor portions of privately owned property from the OPA that are not held for conservation or recreation and are not inholdings of Carlin Park.



Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	106.7	91.5	15.2	0.5	
Added to the CBRS	19.1	17.1	2.0		0
Removed from the CBRS	1.9	1.9	0.0		3
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	123.9	106.7	17.2	0.6	
Net Change	17.2	15.2	2.0	0.1	(3)

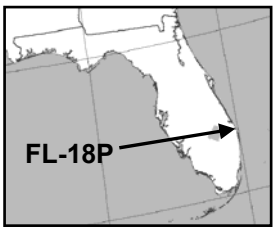
[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1999 and 2004 aerial photography, and 2002 Palm Beach County property parcel information



This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit FL-18P, MacArthur Beach, Florida

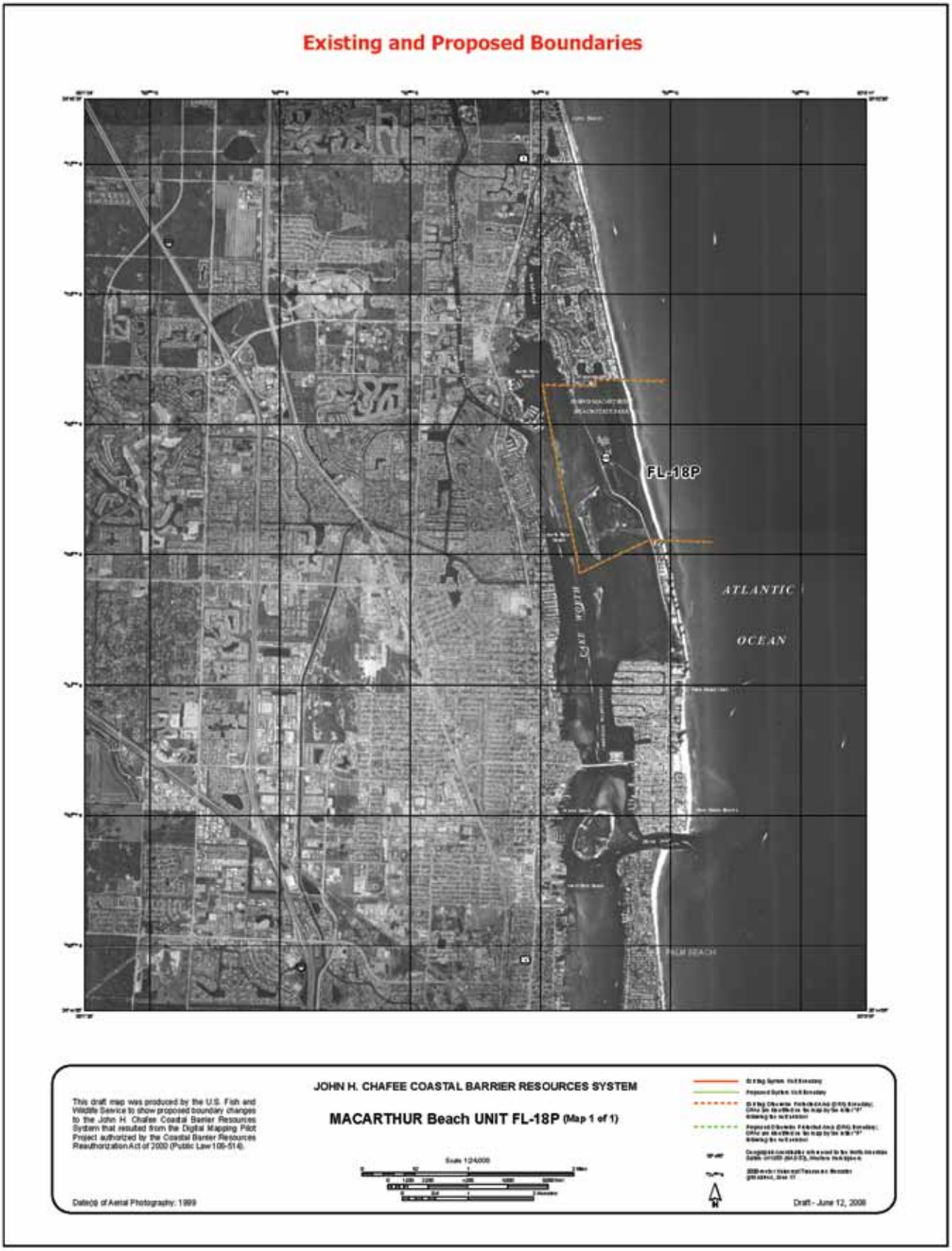
Type of Unit: Otherwise protected area (OPA)
Location of Unit: East of North Palm Beach on the Atlantic Coast, in Palm Beach County
Congressional District: 22
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to Unit FL-18P since its designation in 1990.
Underlying Conservation/ Recreation Area(s) in OPA: John D. MacArthur Beach State Park, owned by the Florida Department of Environmental Protection since 1982.
Existing Boundary Description: The northern and southern land boundaries of Unit FL-18P generally follow the boundaries of John D. MacArthur Beach State Park. The western boundary lies in the Intracoastal Waterway.
Proposed Changes to Boundary: The boundaries of Unit FL-18P are more precisely aligned with the boundaries of John D. MacArthur Beach State Park.
Additional Comments: There are no known private inholdings within Unit FL-18P. The proposed adjustments to the boundaries of Unit FL-18P remove from the OPA minor portions of privately owned property that are not held for conservation or recreation and are not inholdings of John D. MacArthur Beach State Park.



Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	853.7	295.0	558.7	1.6	
Added to the CBRS	2.0	0.8	1.2		0
Removed from the CBRS	4.0	3.3	0.7		5
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	851.7	292.5	559.2	1.6	
Net Change	(2.0)	(2.5)	0.5	0.0	(5)

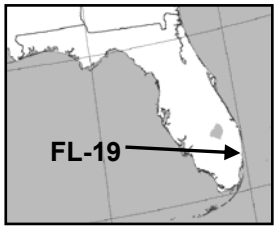
[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1999 and 2004 aerial photography, and 2002 Palm Beach County property parcel information



This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit FL-19, Birch Park, Florida

Type of Unit: Proposed new System unit
Location of Unit: South of Fort Lauderdale on the Atlantic Coast, in Broward County
Congressional District: 22
Current CBRS Status: The entire proposed new Unit FL-19 is currently within otherwise protected area (OPA) Unit FL-19P.
System Unit Criteria: The proposed new Unit FL-19 meets the Coastal Barrier Resources Act (CBRA) definition and criteria of an undeveloped coastal barrier. Areas of proposed new Unit FL-19 that are currently within Unit FL-19P met the CBRA definition and criteria of an undeveloped coastal barrier at the time they were first included within the John H. Chafee Coastal Barrier Resources System (CBRS). The U.S. Fish and Wildlife Service is not aware of the existence of a full complement of infrastructure in this area at the time the area was first included within the CBRS.
Proposed Boundaries: The northern and southern boundaries of the proposed new unit coincide with the proposed northern and southern boundaries of Unit FL-19P. The western boundary of the proposed new unit turns south to coincide with the proposed eastern boundary of Unit FL-19P at the point where the northern boundary meets the Hugh Taylor Birch State Park property. It follows the property boundary south, then east to the shoreline. It turns south again at the shoreline, then west and south again with the property line until it meets the proposed southern OPA boundary.
Additional Comments: Portions of FL-19P are not held for conservation or recreation, are not inholdings, and met the CBRA definition of and criteria for an undeveloped coastal barrier at the time they were established within the OPA in 1990. These areas are proposed for reclassification from OPA Unit FL-19P to new System Unit FL-19.



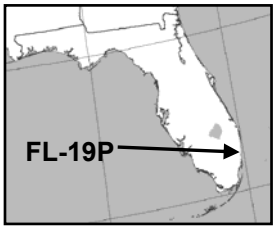
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	0.0	0.0	0.0	0.0	
Added to the CBRS	0.9	0.6	0.3		0
Removed from the CBRS	0.0	0.0	0.0		0
Reclassified Area	8.5	4.1	4.4	0.3	
Proposed Unit	9.4	4.7	4.7	0.4	
Net Change	9.4	4.7	4.7	0.4	0

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1999 and 2004 aerial photography, and 1999 Broward County property parcel information

John H. Chafee Coastal Barrier Resources System Unit FL-19P, Birch Park, Florida

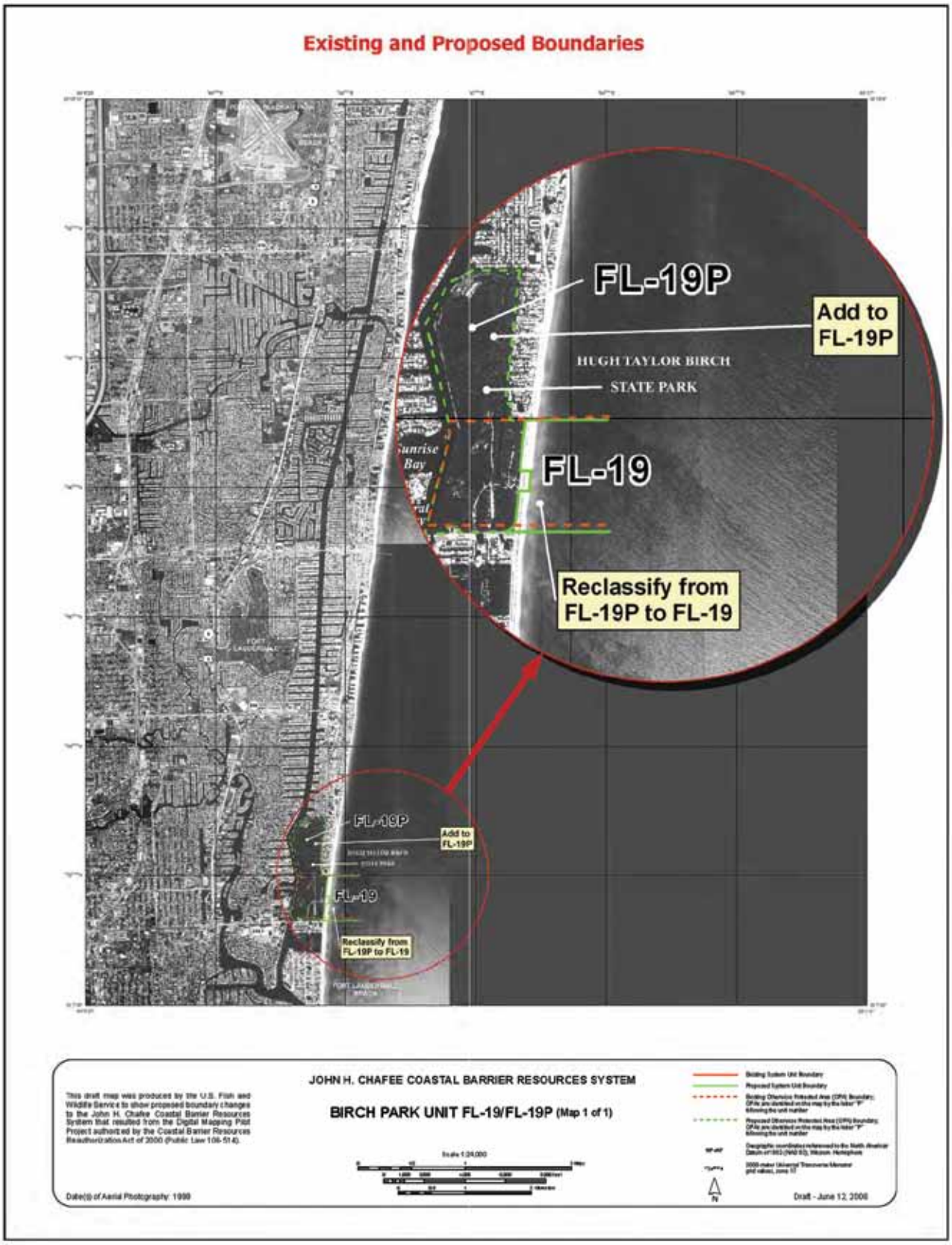
Type of Unit: Otherwise protected area (OPA)
Location of Unit: South of Fort Lauderdale on the Atlantic Coast, in Broward County
Congressional District: 22
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to Unit FL-19P since its designation in 1990.
Underlying Conservation/Recreation Area(s) in OPA: Hugh Taylor Birch State Park, owned by the Florida Department of Environmental Protection, acquired by the State of Florida in 1941.
Existing Boundary Description: The boundaries of Unit FL-19P roughly include less than half of the southern portion of Hugh Taylor Birch State Park and adjacent public beachfront. The western boundary follows the center of the Intracoastal Waterway.
Proposed Changes to Boundary: The boundaries of Unit FL-19P are precisely aligned with the boundaries of Hugh Taylor Birch State Park.
Additional Comments: There are no known private inholdings within Unit FL-19P. Of the 10.6 acres of beach property in the current Unit FL-19P, only 2 acres belong to Hugh Taylor Birch State Park. According to the City of Fort Lauderdale, the rest of the beach property within the OPA is managed by the city as a public beach, but is not owned by the city. The State Park management and the city both acknowledge the presence of a small piece of undeveloped private property somewhere outside the State Park boundary and within the current OPA, but they cannot locate it with any certainty. Therefore the beach outside the State Park boundary and within the current OPA is proposed to be reclassified as new System Unit FL-19.



Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	85.4	71.8	13.6	0.4	
Added to the CBRS	102.9	90.8	12.1		4[4]
Removed from the CBRS	0.1	0.1	0.0		0
Reclassified Area	(8.5)	(4.1)	(4.4)	(0.3)	
Proposed Unit	179.7	158.4	21.3	0.1	
Net Change	94.3	86.6	7.7	(0.3)	4

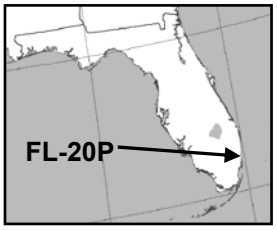
[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1999 and 2004 aerial photography, and 1999 Broward County property parcel information
[4] Structures are all Hugh Taylor Birch State Park facilities including restrooms and a ranger's station



This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit FL-20P, Lloyd Beach, Florida

Type of Unit: Otherwise protected area (OPA)
Location of Unit: Southeast of Ft. Lauderdale on the Atlantic Coast, in Broward County
Congressional District: 22
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to the boundaries of Unit FL-20P since its designation in 1990.
Underlying Conservation/Recreation Area(s) in OPA: John U. Lloyd Beach State Park, owned by the Florida Department of Environmental Protection since 1974. Single parcel purchased for conservation or recreation purposes by the City of Hollywood in 2002.
Existing Boundary Description: The northern boundary of Unit FL-20P follows the southern edge of the Turning Basin Inlet. The eastern boundary follows the approximate center of a channel behind the barrier. The southern boundary cuts across the barrier roughly at the southern tip of the State park. The unit includes the State park and also lands belonging to the Coast Guard, the U.S. Navy, Nova University, the City of Dania Beach, and a private company.
Proposed Changes to Boundary: The northern and southern boundaries of Unit FL-20P are aligned with the boundaries of the John U. Lloyd Beach State Park and a small adjacent parcel belonging to the City of Hollywood recently acquired for conservation purposes. The remaining private and military properties listed above are proposed for removal from the CBRS because they are not held for conservation or recreation purposes, are not inholdings within the conservation or recreation areas, and were developed at the time they were included within Unit FL-20P in 1990.
Additional Comments: There are no known private inholdings within Unit FL-20P.



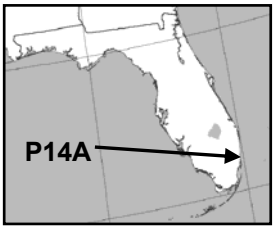
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	398.3	233.5	164.8	2.6	
Added to the CBRS	0.3	0.0	0.3		0
Removed from the CBRS	53.7	30.8	22.9		19
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	344.9	202.7	142.2	2.2	
Net Change	(53.4)	(30.8)	(22.6)	(0.4)	(19)

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1999 and 2004 aerial photography, and 1999 Broward County property parcel information

John H. Chafee Coastal Barrier Resources System P14A, North Beach, Florida

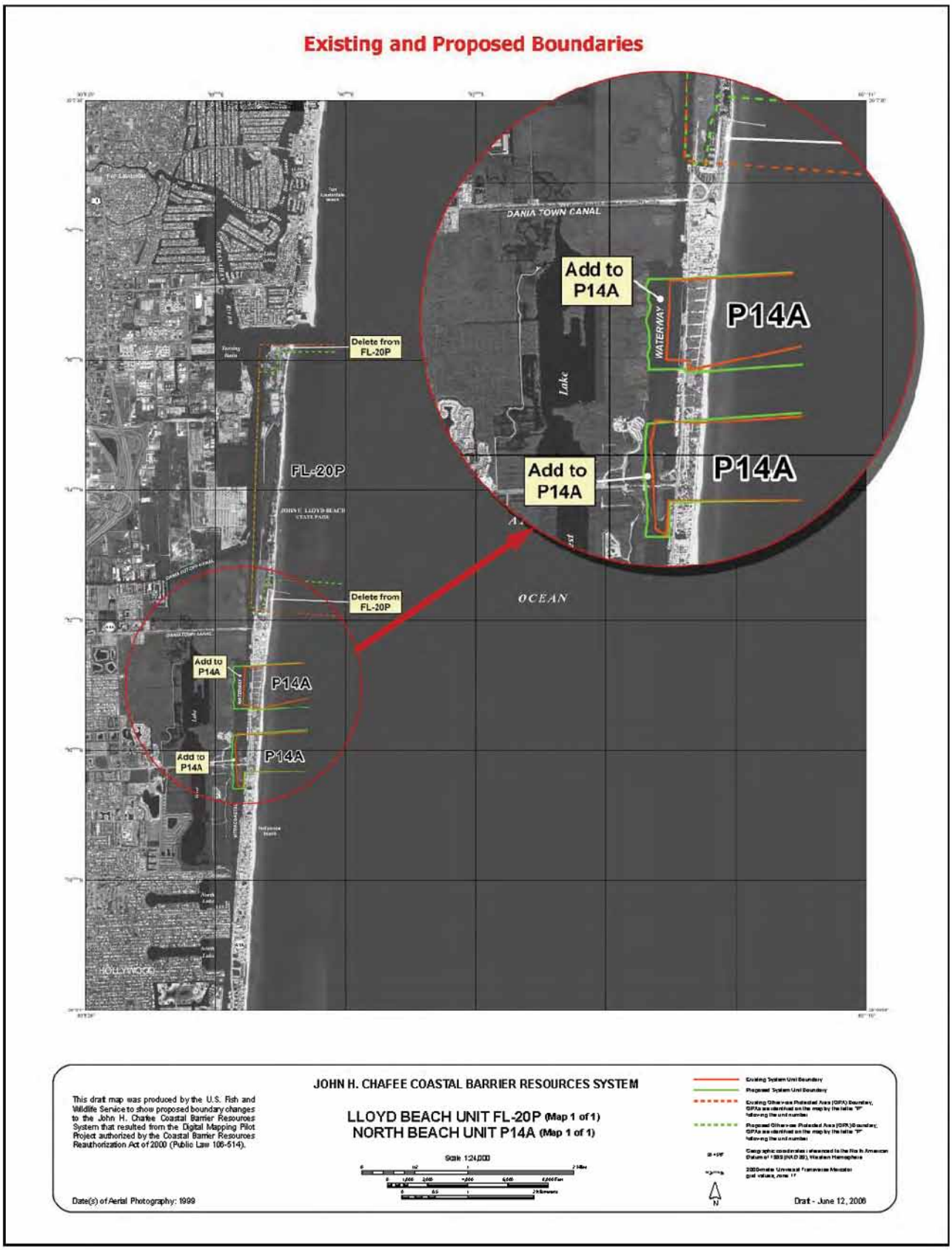
Type of Unit: System unit
Location of Unit: Southeast of Ft. Lauderdale on the Atlantic Coast, in Broward County.
Congressional District: 20
Establishment of Unit: Coastal Barrier Resources Act (P.L. 97-348) enacted on 10/18/1982
Historical Changes to Unit: There have been no changes to the boundaries of Unit P14A since its designation in 1982.
Existing Boundary Description: Unit P14A is composed of two segments. In both segments, the northern and southern boundaries roughly follow the break-in-development. The landward boundaries follow the center of the Intracoastal Waterway.
Proposed Changes to Boundary: The northern and southern boundaries of both segments of Unit P14A are aligned with digital property parcel data. The landward boundaries of both segments of Unit P14A are adjusted to include the entire Intracoastal Waterway.
Additional Comments: Hollywood North Beach Park, currently owned by Broward County, is located within both segments of Unit P14A, but is not proposed for reclassification as an otherwise protected area because the park was first established in 1986 after Unit P14A was established.



Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	108.1	61.3	46.8	0.8	
Added to the CBRS	42.2	3.3	38.9		0
Removed from the CBRS	0.5	0.0	0.5		0
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	149.8	64.6	85.2	0.8	
Net Change	41.7	3.3	38.4	0.0	0

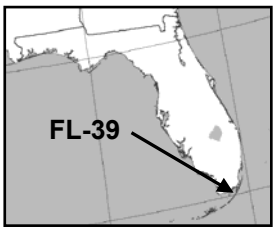
1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1999 and 2004 aerial photography, and 1999 Broward County property parcel information



This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit FL-39, Tavernier Key, Florida

Type of Unit: System unit
Location of Unit: South of Key Largo in the Florida Keys, in Monroe County
Congressional District: 18
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: 11/15/1993: A change was made to Unit FL-39 in accordance with Section 4(e) of P.L. 101-591, which allowed minor and technical boundary modifications to the John H. Chafee Coastal Barrier Resources System (CBRS) maps as necessary to correct clerical and typographical errors in the maps and to add otherwise protected areas to the CBRS at the request of State and local governments and qualified organizations with jurisdiction over the area. This administrative change modified the eastern boundary of the southern segment of Unit FL-39, moving it slightly east to include additional associated aquatic habitat in the unit.
Existing Boundary Description: Unit FL-39 consists of two segments separated by U.S. Highway 1.
Southern segment: The eastern boundary includes Tavernier Key, and cuts across land at the wetland/fastland break. The northern boundary generally follows the southern edge of U.S. Highway 1. The western boundary roughly follows the western edge of Tavernier Creek.
Northern segment: The eastern boundary roughly follows the break-in-development, extends out into Community Harbor, and continues northward around the key to the Intracoastal Waterway. The northern boundary follows the southern edge of the Intracoastal Waterway. The western boundary roughly follows several small canals, the break-in-development, and the western side of Tavernier Creek. The southern boundary follows the northern edge of U.S. Highway 1.
Proposed Changes to Boundary:
Southern segment: The northern boundary is adjusted to follow more precisely the southern edge of U.S. Highway 1. The western boundary is adjusted to follow more precisely the western edge of Tavernier Creek.
Northern segment: The eastern boundary is adjusted to follow more precisely the 1990 break-in-development and to include emergent mangrove extending out into Community Harbor. The western boundary is adjusted to follow more precisely the canals, the 1990 break-in-development, and the western shoreline of Tavernier Creek. The southern boundary is adjusted to follow more precisely the northern edge of U.S. Highway 1.



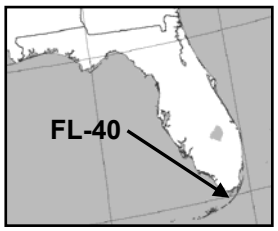
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	1,196.6	57.9	1,138.7	1.4	
Added to the CBRS	101.5	1.7	99.8		0
Removed from the CBRS	6.8	1.4	5.4		0
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	1,291.3	58.2	1,233.1	1.4	
Net Change	94.7	0.3	94.4	0.0	0

[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1999 and 2004 aerial photography, and 2005 Monroe County property parcel information

John H. Chafee Coastal Barrier Resources System Unit FL-40, Snake Creek, Florida

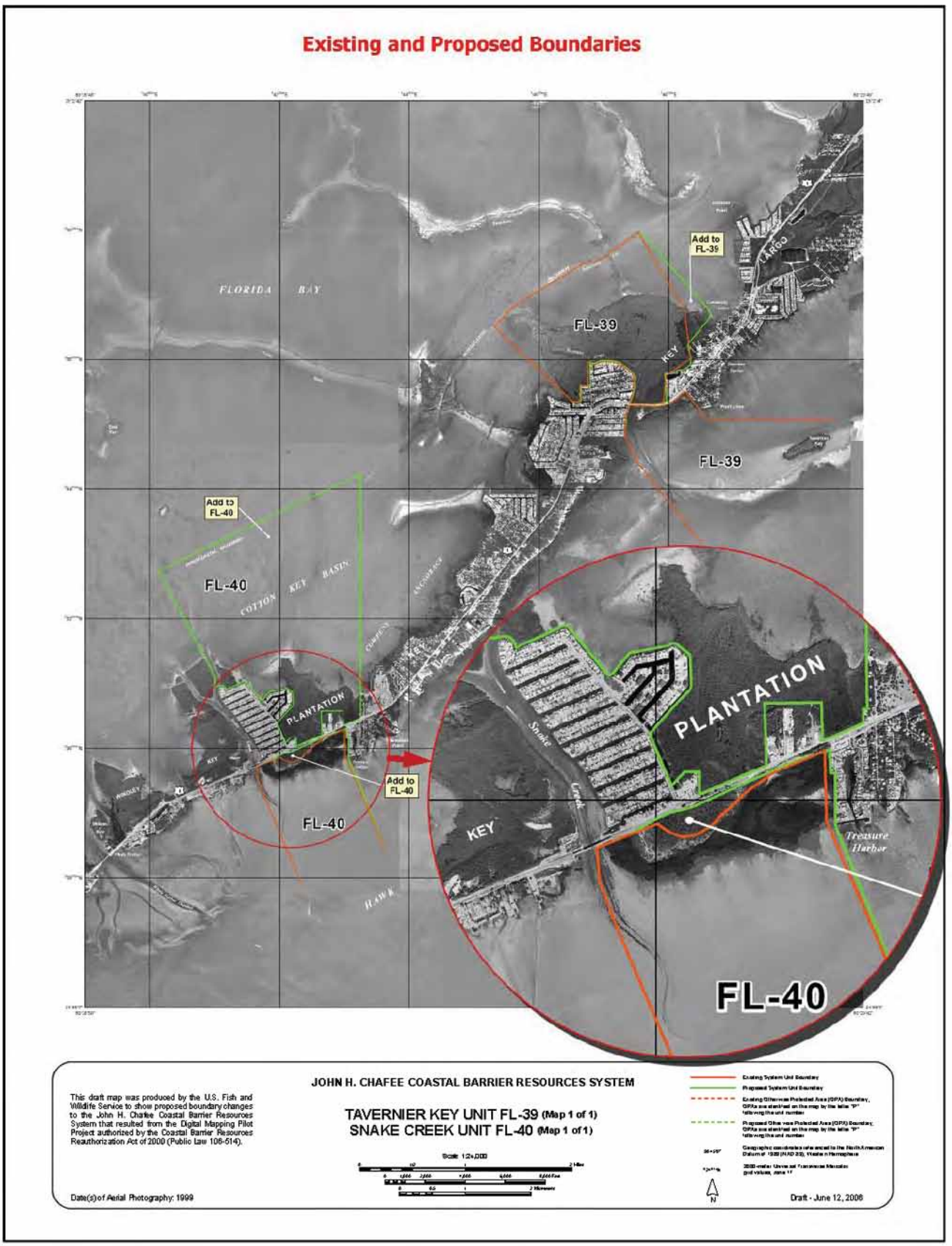
Type of Unit: System unit
Location of Unit: South of Key Largo in the Florida Keys, in Monroe County
Congressional District: 18
Establishment of Unit: Coastal Barrier Improvement Act, or CBIA, (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: 11/15/1993: Changes were made to the boundaries of the adjacent Unit FL-39 in accordance with Section 4(e) of P.L. 101-591. No changes were made to the boundaries of Unit FL-40 at that time.
Existing Boundary Description: The eastern boundary of Unit FL-40 cuts through undeveloped wetlands near the break-in-development. The landward boundary roughly parallels U.S. Highway 1, dipping south in the middle of the boundary to roughly follow a wetlands delineation. The western boundary follows the center of the Snake Creek channel.
Proposed Changes to Boundary: The eastern boundary of Unit FL-40 is aligned with digital property parcel data to follow more precisely the 1990 break-in-development and add associated aquatic habitat. The landward boundary is adjusted to follow more precisely the southern edge of U.S. Highway 1 and to add an area of undeveloped fastland to Unit FL-40. There is a proposed addition of undeveloped coastal barrier on the north side of US Highway 1 that would add a second segment to Unit FL-40. The proposed boundaries of this area include associated aquatic habitat and exclude existing development by following digital property parcel data. The northern boundary follows the southern edge of the Intracoastal Waterway. This area was proposed for addition to the John H. Chafee Coastal Barrier Resources System in Volume 14 of the Department of the Interior's 1988 Report to Congress: Coastal Barrier Resources System, Recommendations for Additions to or Deletions from the Coastal Barrier Resources System, but was not adopted by Congress with the enactment of the CBIA. This area is proposed for addition to Unit FL-40 at this time because it still meets the Coastal Barrier Resources Act definition and criteria for an undeveloped coastal barrier.



Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	105.0	21.2	83.8	1.0	
Added to the CBRS	1,955.0	29.5	1,925.5		0
Removed from the CBRS	0.0	0.0	0.0		0
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	2,060.0	50.7	2,009.3	1.1	
Net Change	1,955.0	29.5	1,925.5	0.1	0

[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1999 and 2004 aerial photography, and 2005 Monroe County property parcel information

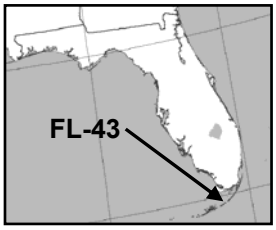


This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit FL-43, Channel Key, Florida

Type of Unit: System unit
Location of Unit: South of Key Largo in the Florida Keys, in Monroe County
Congressional District: 18
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to the boundaries of Unit FL-43 since its designation in 1990.

Existing Boundary Description: The southern boundary of Unit FL-43 generally follows the shoreline north of Toms Harbor Cut. The eastern and western boundaries parallel each other in the open water of Florida Bay to include Channel Key in the unit. The northern boundary closes the unit off in open water at the Intracoastal Waterway.
Proposed Changes to Boundary: There are no proposed changes to the boundaries of Unit FL-43.



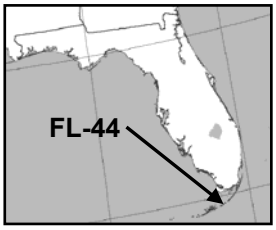
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	1,187.0	14.5	1,172.5	0.2	
Added to the CBRS	0.0	0.0	0.0		N/A
Removed from the CBRS	0.0	0.0	0.0		N/A
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	1,187.0	14.5	1,172.5	0.2	
Net Change	0.0	0.0	0.0	0.0	N/A

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count not conducted; no fastland added or removed

John H. Chafee Coastal Barrier Resources System Unit FL-44, Toms Harbor Keys, Florida

Type of Unit: System unit
Location of Unit: South of Key Largo in the Florida Keys, in Monroe County
Congressional District: 18
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to the boundaries of Unit FL-44 since its designation in 1990.
Existing Boundary Description: The eastern boundary of Unit FL-44 generally follows the western edge of Duck Key Channel, and moves northward across Toms Harbor Channel until it meets the Grassy Key shoreline. The northern boundary roughly follows the Grassy Key shoreline. The western boundary is a straight line from the Grassy Key shoreline into the Atlantic Ocean on the west side of Toms Harbor Keys.
Proposed Changes to Boundary: The eastern boundary of Unit FL-44 is adjusted to include the entire Duck Key Channel. The northern boundary is adjusted to follow more precisely the shoreline and to include associated aquatic habitat and undeveloped fastland. The western boundary is adjusted westward to be at the 1990 break-in-development.



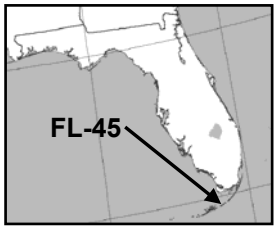
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	384.1	58.6	325.5	1.0	
Added to the CBRS	144.1	40.1	104.0		0
Removed from the CBRS	2.5	0.6	1.9		2
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	525.7	98.1	427.6	1.1	
Net Change	141.6	39.5	102.1	0.1	(2)

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1999 and 2004 aerial photography, and 2005 Monroe County property parcel information

John H. Chafee Coastal Barrier Resources System Unit FL-45, Deer/Long Point Keys, Florida

Type of Unit: System unit
Location of Unit: North of Key West in the Florida Keys, in Monroe County
Congressional District: 18
Establishment of Unit: Coastal Barrier Improvement Act, or CBIA, (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to the boundaries of Unit FL-45 since its designation in 1990.
Existing Boundary Description: The eastern boundary of Unit FL-45 follows the waterway between Little Crawl Key and Crawl Key, crosses U.S. Highway 1, and continues into Florida Bay, following the waterway between Crawl Key and Long Point Key. The northern boundary crosses Long Point Key south of Burnt Point and continues westward in open water. The western boundary runs south until it meets Fat Deer Key near the break-in-development on the north side of U.S. Highway 1, cuts east across undeveloped land near the break-in-development on Fat Deer Key, roughly follows a channel, and crosses a tip of land as it extends out into the Atlantic Ocean.
Proposed Changes to Boundary: The eastern boundary of Unit FL-45 is moved to the east to include additional undeveloped fastland, excluding a cluster of existing development to the east of Little Crawl Key. North of U.S. Higway 1, the boundary is aligned with digital property parcel data at the current break-in-development on Grassy Key. South of U.S Highway 1, the boundary is adjusted to align with emergent mangroves and digital property parcel data at the current break-in-development. This area was proposed for addition to the John H. Chafee Coastal Barrier Resources System in Volume 14 of the Department of the Interior's 1988 Report to Congress: Coastal Barrier Resources System, Recommendations for Additions to or Deletions from the Coastal Barrier Resources System, but was not adopted by Congress with the enactment of the CBIA. This area is proposed for addition to Unit FL-45 at this time because it still meets the Coastal Barrier Resources Act definition and criteria for an undeveloped coastal barrier. The northern boundary is aligned with

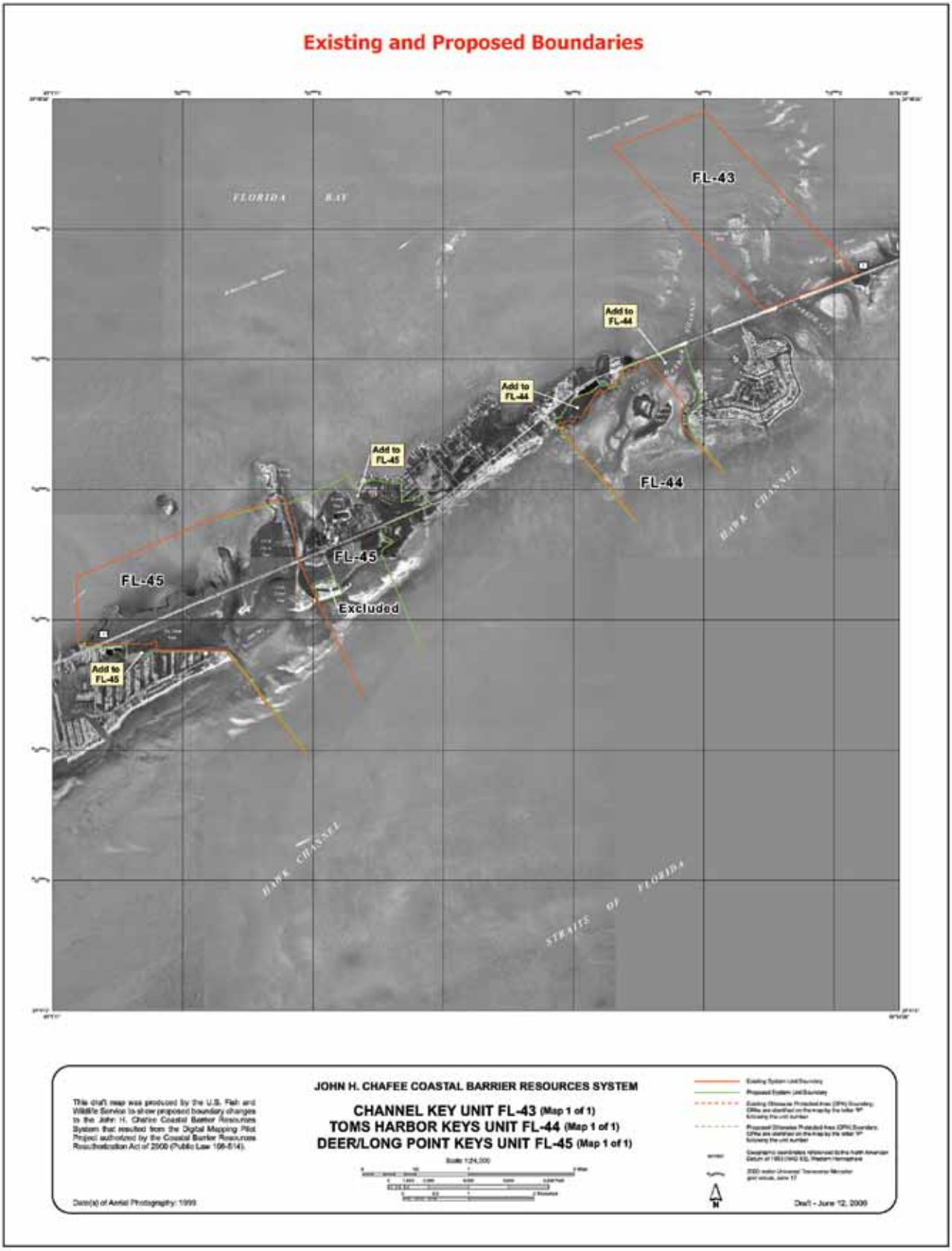


digital property parcel data where it crosses Long Point Key south of Burnt Point. The western boundary is adjusted to include emergent mangroves.
Additional Comments: Curry Hammock State Park, managed by the Florida Department of Environmental Protection, is located within Unit FL-45, but is not proposed for reclassification as an otherwise protected area because the park was acquired by the State of Florida on September 10, 1991, after Unit FL-45 was established.

Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	1,443.3	388.8	1,054.5	1.0	
Added to the CBRS	543.3	140.9	402.4		0
Removed from the CBRS	9.0	0.1	8.9		0
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	1,977.6	529.6	1,448.0	1.8	
Net Change	534.3	140.8	393.5	0.8	0

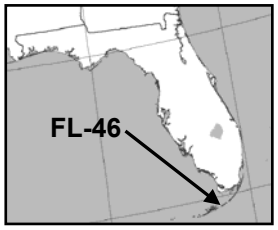
[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1999 and 2004 aerial photography, and 2005 Monroe County property parcel information



This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit FL-46, Boot Key, Florida

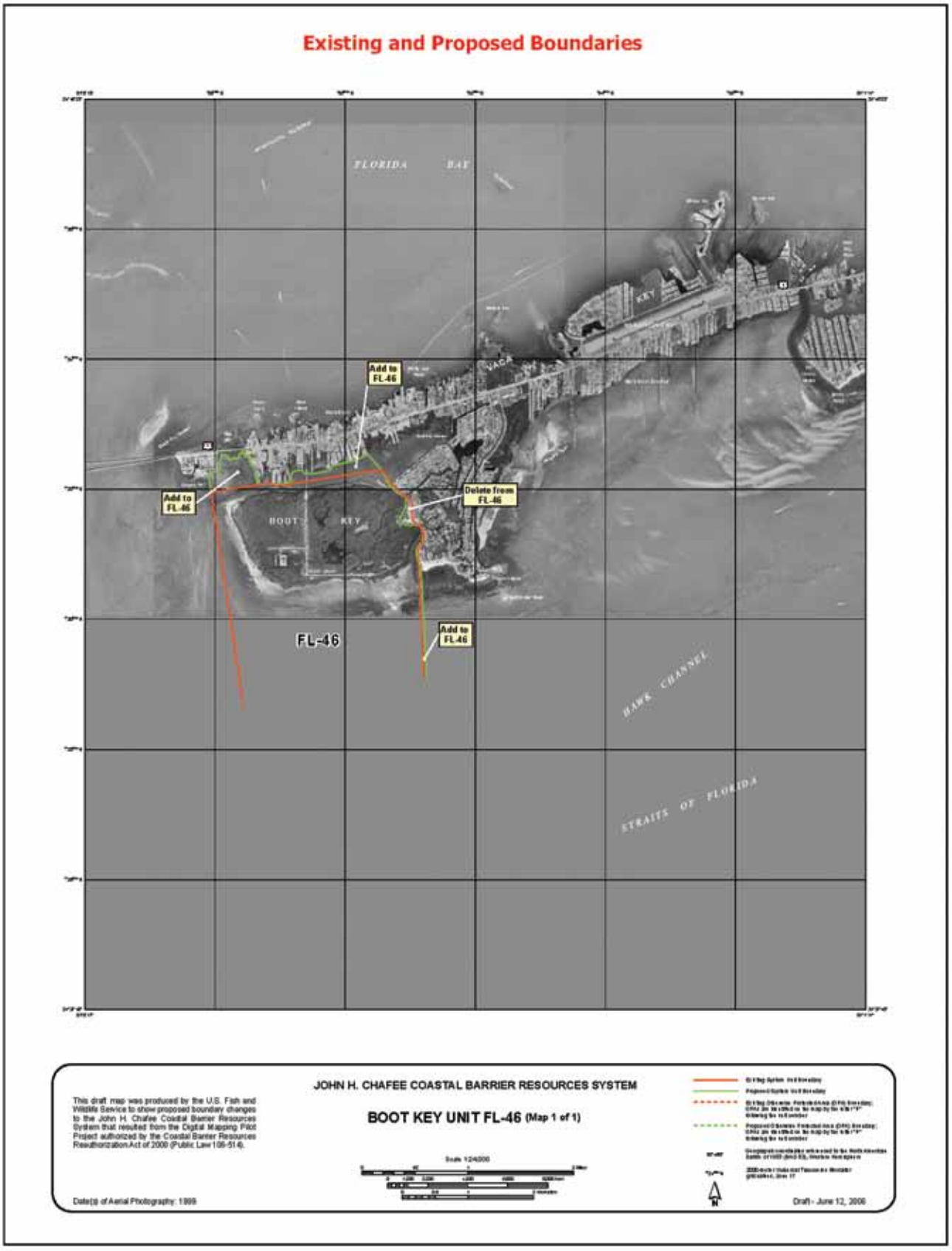
Type of Unit: System unit
Location of Unit: North of Key West in the Florida Keys, in Monroe County
Congressional District: 18
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to the boundaries of Unit FL-46 since its designation in 1990.
Existing Boundary Description: The eastern boundary of Unit FL-46 roughly follows the eastern edge of Sister Creek north to the center of Boot Key Harbor, bisecting some development along the shoreline of Sister Creek. About halfway along Sister Creek, the boundary crosses the western side of an unnamed island (excluding three out of four radio towers). The northern boundary follows the approximate center of Boot Key Harbor. The western boundary extends south through open water to the west of Boot Key.
Proposed Changes to Boundary: The eastern boundary of Unit FL-46 is adjusted to follow more precisely the eastern edge of Sister Creek. The northern boundary is adjusted to include the entire channel of Boot Key Harbor.
Additional Comments: The island with the radio towers located about halfway along Sister Creek is a federally owned island, used by Voice of America. The proposed adjustments to the eastern boundary will remove this island from Unit FL-46 to exclude the radio towers from the CBRS.



Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	1,178.8	116.5	1,062.3	2.0	
Added to the CBRS	132.4	0.0	132.4		0
Removed from the CBRS	20.0	12.2	7.8		3
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	1,291.2	104.3	1,186.9	2.0	
Net Change	112.4	(12.2)	124.6	0.0	(3)

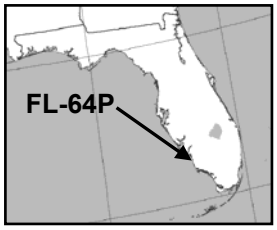
1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1999 and 2004 aerial photography, and 2005 Monroe County property parcel information



This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit FL-64P, Clam Pass, Florida

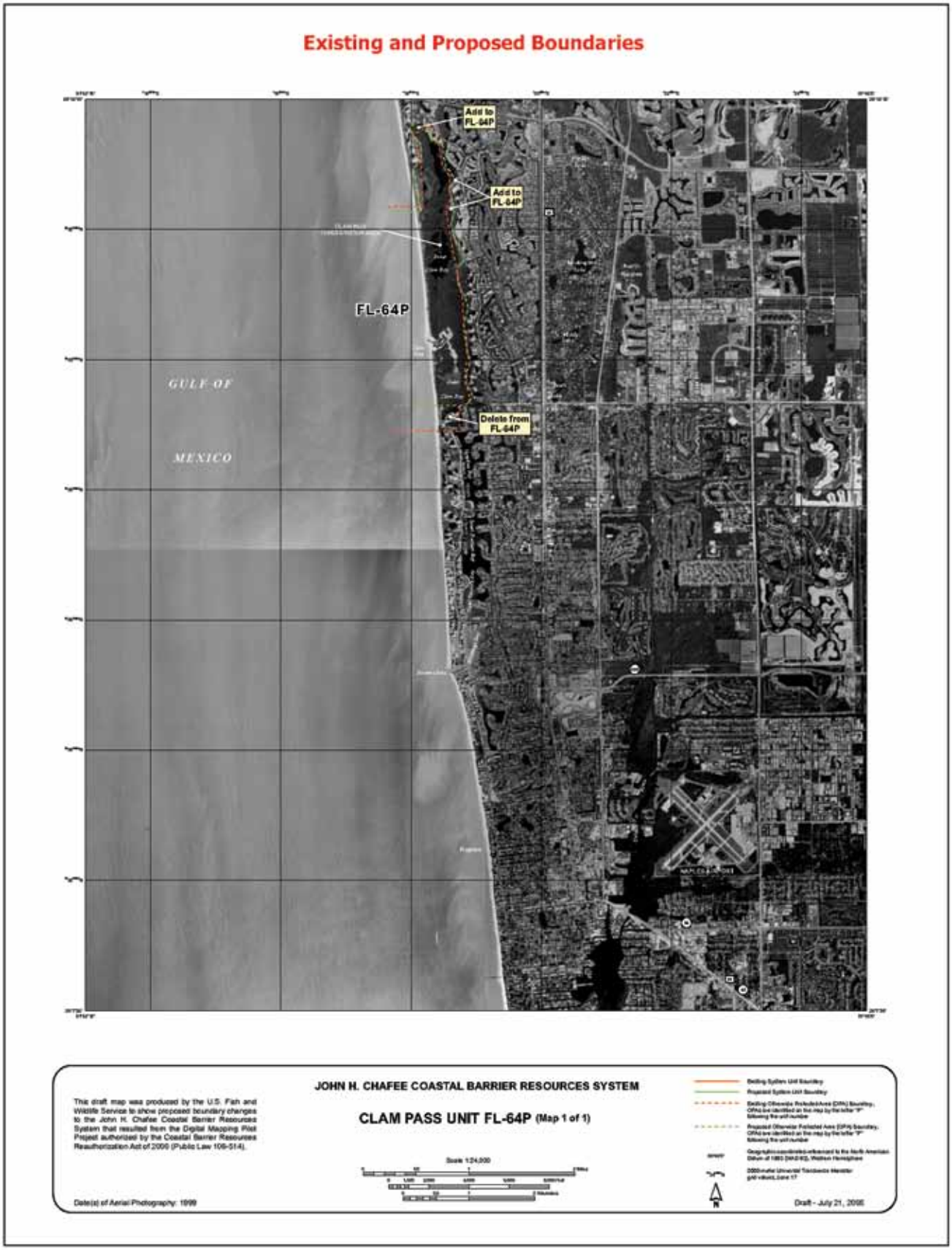
Type of Unit: Otherwise protected area (OPA)
Location of Unit: North of Naples on the Gulf Coast, in Collier County
Congressional District: 14
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to the boundaries of Unit FL-64P since its designation in 1990.
Underlying Conservation/Recreation Area(s) in OPA: Clam Bay Pass Conservation Area, owned by Collier County.
Existing Boundary Description: The boundary of Unit FL-64P roughly follows the boundaries of the Clam Bay Pass Conservation Area.
Proposed Changes to Boundary: The boundaries of Unit FL-64P are aligned more precisely with the boundaries of the Clam Bay Pass Conservation Area.
Additional Comments: There are private inholdings remaining within the proposed boundary which include several private concession structures built on the beachfront of the unit. In several places, the current boundary passes through private, developed land that is not held for conservation or recreation purposes, and excludes undeveloped wetlands that are part of Clam Bay Pass Conservation Area. This adjustment will remove from Unit FL-64P land that is privately owned, is not an inholding, and was not held for conservation purposes at the time it was included in the OPA, and will also add land that is held for conservation or recreation to the OPA. H.R. 4165, introduced by Congressman Connie Mack on October 27, 2005 in the 109th Congress, would replace the existing map for Unit FL-64P with the proposed map dated July 21, 2005. This bill was favorably reported by the Committee on Resources on July 20, 2006. Legislation was introduced in the 110th Congress to replace the existing map for Unit FL-64P.



Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	555.3	27.9	527.4	2.2	
Added to the CBRS	65.1	2.0	63.1		0
Removed from the CBRS	47.8	24.1	23.7		17
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	572.6	5.8	566.8	1.9	
Net Change	17.3	(22.1)	39.4	(0.3)	(17)

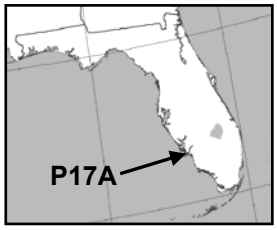
[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1999 and 2004 aerial photography, and 2004 Collier County property parcel information



This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit P17A, Bowditch Point, Florida

Type of Unit: System unit
Location of Unit: North of Naples on the Gulf Coast, in Lee County
Congressional District: 14
Establishment of Unit: Coastal Barrier Resources Act (P.L. 97-348) enacted on 10/18/1982
Historical Changes to Unit: 11/2/1994: P.L. 103-461 modified the southern boundary of Unit P17A to include only areas that were undeveloped at the time the unit was established.
Existing Boundary Description: The southern boundary of Unit P17A cuts across Bowditch Point. The eastern and northern boundaries are contiguous with the boundary of adjacent Unit FL-67. The eastern boundary follows the approximate center of Estero Pass. The northern boundary curves around what was once the end of Bowditch Point, but the spit has since accreted so that the boundary now cuts across the tip of the spit.
Proposed Changes to Boundary: The southern boundary of Unit P17A is aligned with digital property parcel data of the properties that were intended to be excluded by P.L. 103-461. The eastern boundary is adjusted to include the entire Estero Pass channel in the unit. The northern boundary is adjusted to include the portion of the barrier spit that has accreted beyond the Unit P17A boundary.
Additional Comments: The northern and eastern boundaries of Unit P17A are contiguous with the boundaries of adjacent Unit FL-67. The adjustment of these two boundaries results in the expansion of Unit P17A into Unit FL-67. This change will place the appropriate landforms and their associated aquatic habitats within their discrete System units. Bowditch Point Park, owned by Lee County, is located within Unit P17A, but is not proposed for reclassification as an otherwise protected area because the park was acquired by the



county in December 1987 after the designation of Unit P17A. In 1982, the unit name was incorrectly identified as "Bodwitch Point" because the U.S. Geological Survey topographic base map contained a typographical error. Research has revealed that the correct name should be "Bowditch Point" and this has been corrected on the draft map.

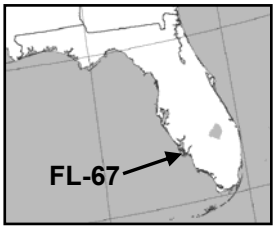
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	29.7	15.3	14.4	0.2	
Added to the CBRS	32.1	0.9	31.2		0
Removed from the CBRS	0.3	0.0	0.3		0
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	61.5	16.2	45.3	0.4	
Net Change	31.8	0.9	30.9	0.2	0

[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1998 and 2004, aerial photography, and 2003 Lee County property parcel information

John H. Chafee Coastal Barrier Resources System Unit FL-67, Bunche Beach, Florida

Type of Unit: System unit
Location of Unit: North of Naples on the Gulf Coast, in Lee County
Congressional District: 14
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to the boundaries of Unit FL-67 since its designation in 1990.
Existing Boundary Description: The eastern boundary of Unit FL-67 crosses the tip of Bowditch Point and follows the center of Estero Pass (which coincides with a portion of the boundaries of adjacent Unit P17A). From this point, the eastern boundary crosses San Carlos Bay, and generally follows the center of Pelican Bay and the edge of a canal west of a developed area. The landward boundary roughly follows a break in vegetation, the western side of a road, and the northern edge of mangroves. This boundary then follows the western edge of a channel across from development and includes developing shoals in the Caloosahatchee River to the east of Shell Point. The western boundary follows a channel between Big and Little Shell Islands and Shell Point, cuts straight south through San Carlos Bay to the east of Miguel Key, roughly follows the break-in-development in Punta Rassa, and cuts through an accreting island and developing shoals in San Carlos Bay. The excluded area boundary generally follows the shoreline of Connie Mack Island, the north side of State Highway 867, and a break-in-development.
Proposed Changes to Boundary: The eastern boundary of Unit FL-67 is adjusted to be coincident with the proposed boundaries of adjacent Unit P17A, to include a small undeveloped island in Pelican Bay and mangroves, and to follow the western edge of a canal and the boundaries of the proposed new otherwise protected area (OPA) Unit FL-67P. The landward boundary is adjusted to include mangroves on the north side of proposed Unit FL-67P, to follow the southern shoreline of an unnamed pond and the boundaries of proposed Unit FL-67P, to align more precisely with the western side of a road, and to include mangroves. The western boundary is adjusted to include Big and Little Shell Islands, to follow more precisely the 1990 break-in-development in Punta Rassa, and to include an accreting island and developing shoals in San Carlos Bay. The excluded area boundary is adjusted to follow the Connie Mack Island shoreline. The southeastern portion of the boundary is adjusted to follow more precisely the north side of State Highway 867 and the 1990 break-in-development.
Additional Comments: In 1990, the unit name was incorrectly identified as "Bunch Beach" because the U.S. Geological Survey topographic base map contained a typographical error. Research has revealed that the correct name is spelled "Bunche Beach," and this has been corrected on the draft map. There are two parks located partially within Unit FL-67. The San Carlos Bay – Bunche Beach Preserve, managed by the Lee County Parks and Recreation Department, was originally established in 1949, when it consisted of a single beachfront acre within what would become Unit FL-67 in 1990. Between 2002 and 2006, more than 7,880 acres were added to the park. Of those, approximately 5,995 are within the current boundary of Unit FL-67. Because all land except the beachfront acre was added to San Carlos Bay – Bunche Beach Preserve after Unit FL-67 was established, those portions of the preserve that are within Unit



FL-67 are not being proposed for reclassification as an OPA. Estero Bay Preserve State Park, managed by the Florida Department of Environmental Protection was first acquired by the State of Florida in 1987. After 1987, many additional acres were added to the park. Because the dates of acquisition are unavailable for the Estero Bay Preserve State Park parcels within Unit FL-67, those portions are not being proposed for reclassification as an OPA. The northern and eastern boundaries of Unit P17A are contiguous with the boundaries of Unit FL-67. Unit P17A is proposed to be expanded into Unit FL-67 so that the appropriate landforms and their associated aquatic habitats will be within their discrete System units.

John H. Chafee Coastal Barrier Resources System
FL-67, Bunche Beach, Florida (continued)

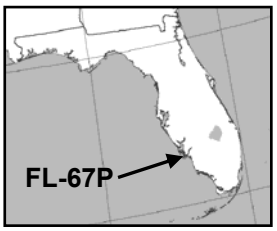
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	3,070.7	122.5	2,948.2	4.6	
Added to the CBRS	329.2	16.6	312.6		0
Removed from the CBRS	24.3	1.3	23.0		1
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	3,375.6	137.8	3,237.8	4.6	
Net Change	304.9	15.3	289.6	0.0	(1)

[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1998 and 2004, aerial photography, and 2003 Lee County property parcel information

John H. Chafee Coastal Barrier Resources System Unit FL-67P, Bunche Beach, Florida

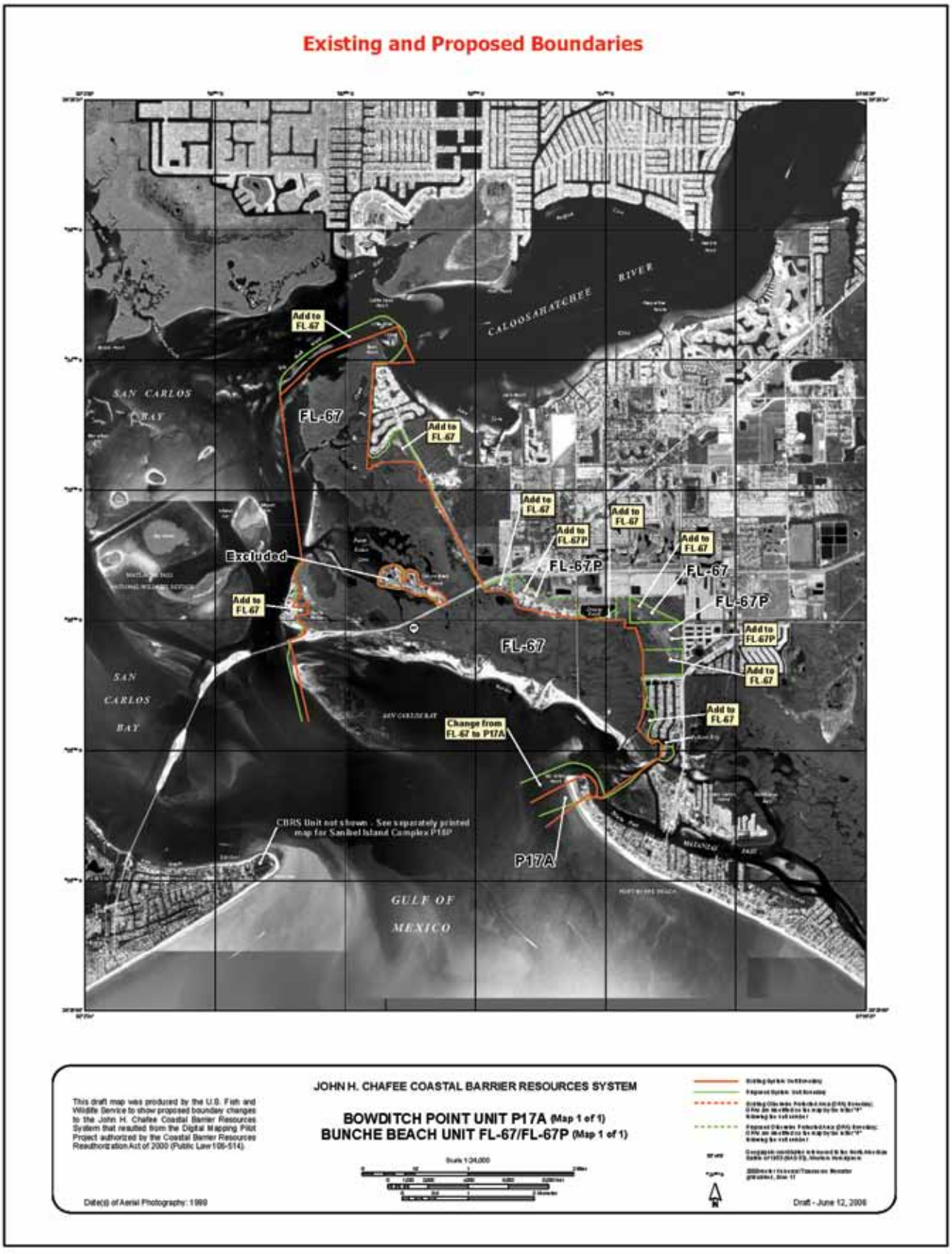
Type of Unit: Proposed new otherwise protected area (OPA)
Location of Unit: North of Naples on the Gulf Coast, in Lee County
Congressional District: 14
Current CBRS Status: The proposed new OPA Unit FL-67P is not currently within the John H. Chafee Coastal Barrier Resources System (CBRS).
Otherwise Protected Area Criteria: Proposed new Unit FL-67P meets the Coastal Barrier Improvement Act definition of an OPA. The San Carlos Bay – Bunche Beach Preserve, managed by the Lee County Parks and Recreation Department, was originally established in 1949, when it consisted of a single beachfront acre within what would become Unit FL-67 in 1990. Between 2002 and 2006, more than 7,880 acres were added to the park. Of those, approximately 5,995 are within the current boundary of Unit FL-67.
Proposed Boundaries: The boundaries of the proposed new unit follow the boundaries of those portions of the San Carlos Bay – Bunche Beach Preserve that are not within System Unit FL-67.
Additional Comments: There are no known private inholdings within the proposed new Unit FL-67P. Those portions of the San Carlos Bay – Bunche Beach Preserve that are within System Unit FL-67 are not being proposed for reclassification as an OPA because the land was in the CBRS before it was added to the Preserve.



Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	0.0	0.0	0.0	0.0	
Added to the CBRS	170.5	19.5	151.0		0
Removed from the CBRS	0.0	0.0	0.0		0
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	170.5	19.5	151.0	0.0	
Net Change	170.5	19.5	151.0	0.0	0

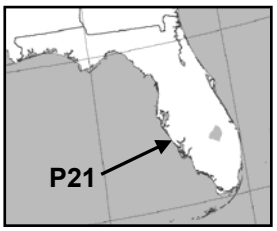
1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1998 and 2004, aerial photography, and 2003 Lee County property parcel information



This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit P21, Bocilla Island, Florida

Type of Unit: System unit
Location of Unit: South of Punta Gorda Beach on the Gulf Coast, in Charlotte County
Congressional District: 13
Establishment of Unit: Coastal Barrier Resources Act (P.L. 97-348) enacted on 10/18/1982
Historical Changes to Unit: 11/16/1990: P.L. 101-591 added associated aquatic habitat to Unit P21, and created otherwise protected area (OPA) Unit P21P on the same map.
Existing Boundary Description: Unit P21 consists of three discrete segments.
Southern segment: The northern and southern boundaries cut straight across Little Gasparilla Island at the break-in-development. The landward boundary lies about a third of the way across Placida Harbor.
Middle segment: The southern boundary cuts across Little Gasparilla Island roughly at the break-in-development and follows the channel between two islands to the shoreline of the mainland. The landward boundary generally follows the wetland/fastland interface and the shoreline of the mainland. The northern boundary generally follows the eastern shoreline of Don Pedro Island and cuts through development on Don Pedro Island at the 1982 break-in-development.
Northern segment: The southern boundary cuts across the barrier, bisecting areas of development, and then crosses Lemon Bay to the mainland. The landward boundary roughly follows the wetland/fastland interface along the mainland. The northern boundary cuts across Lemon Bay, follows the center of Stump Pass, and cuts across the tip of a spit that has accreted into the unit. A portion of the northern boundary is also contiguous with the southern boundary of adjacent OPA Unit P21P.
Proposed Changes to Boundary:
Southern segment: The southern boundary is aligned with digital property parcel data to follow more precisely the 1982 break-in-development and is extended to the mainland to include the associated aquatic habitat. The landward boundary is adjusted to follow the shoreline of the mainland and is connected with the landward boundary of the middle segment of Unit P21. The northern boundary connects with the middle segment, follows the Little Gasparilla Island shoreline, and is aligned with digital property parcel data to follow more precisely the 1982 break-in-development.
Middle Segment: The southern boundary is aligned with digital property parcel data to follow more precisely the 1982 break-in-development and connects with the southern segment. The landward boundary connects with the southern segment and is adjusted to follow more precisely the wetland/fastland interface and the shoreline. The northern boundary is adjusted to follow more precisely the shoreline of Don Pedro Island.
Northern segment: The southern boundary is aligned with digital property parcel data to follow more precisely the 1982 break-in-development. The landward



boundary is adjusted to follow more precisely the wetland/fastland interface. The northern boundary is adjusted to include associated aquatic habitat north to State Highway 776, to follow the wetland/fastland interface and the proposed boundaries of the adjacent Unit P21P.
Additional Comments: Open water that is currently within Unit P21P but is not held for conservation or recreation purposes, is proposed for reclassification from OPA Unit P21P to System Unit P21. Don Pedro Island State Park, managed by the Florida Department of Environmental Protection, is located within Unit P21, but is not proposed for reclassification as an OPA because the park was acquired by the State of Florida in 1985, after Unit P21 was established.

John H. Chafee Coastal Barrier Resources System
P21, Bocilla Island, Florida (continued)

Acreage, Shoreline, and Structures:

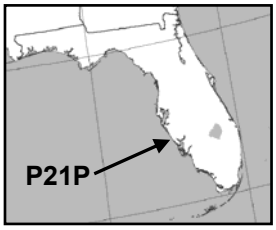
	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	2,078.6	413.4	1,665.2	3.7	
Added to the CBRS	1,754.2	3.1	1,751.1		0
Removed from the CBRS	12.1	2.2	9.9		1
Reclassified Area	179.3	(1.8)	181.1	0.0	
Proposed Unit	4,000.0	412.5	3,587.5	3.6	
Net Change	1,921.4	(0.9)	1,922.3	(0.1)	(1)

[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 2004 aerial photography, and 2005 Charlotte County property parcel information

John H. Chafee Coastal Barrier Resources System Unit P21P, Bocilla Island, Florida

Type of Unit: Otherwise protected area (OPA)
Location of Unit: South of Punta Gorda Beach on the Gulf Coast, in Charlotte County
Congressional District: 13
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to the boundaries of Unit P21P since its designation in 1990.
Underlying Conservation/Recreation Area(s) in OPA: Stump Pass Beach State Park, acquired by the Florida Department of Environmental Protection in 1971.

Existing Boundary Description: The southern boundary of Unit P21P cuts across a sandy spit accreting on the tip of the barrier, and follows the approximate center of an inlet. The eastern boundary lies in the open water of Lemon Bay. The northern boundary follows the center of a small river, and cuts across the primary barrier roughly at the break-in-development.
Proposed Changes to Boundary: The southern boundary of Unit P21P is adjusted to the landward shoreline of the primary barrier to account for accretion of the island. The eastern and northern boundaries are adjusted to follow the shorelines of the islands making up Stump Pass Beach State Park, and to align it to the northern park boundary on the primary barrier where it is adjacent

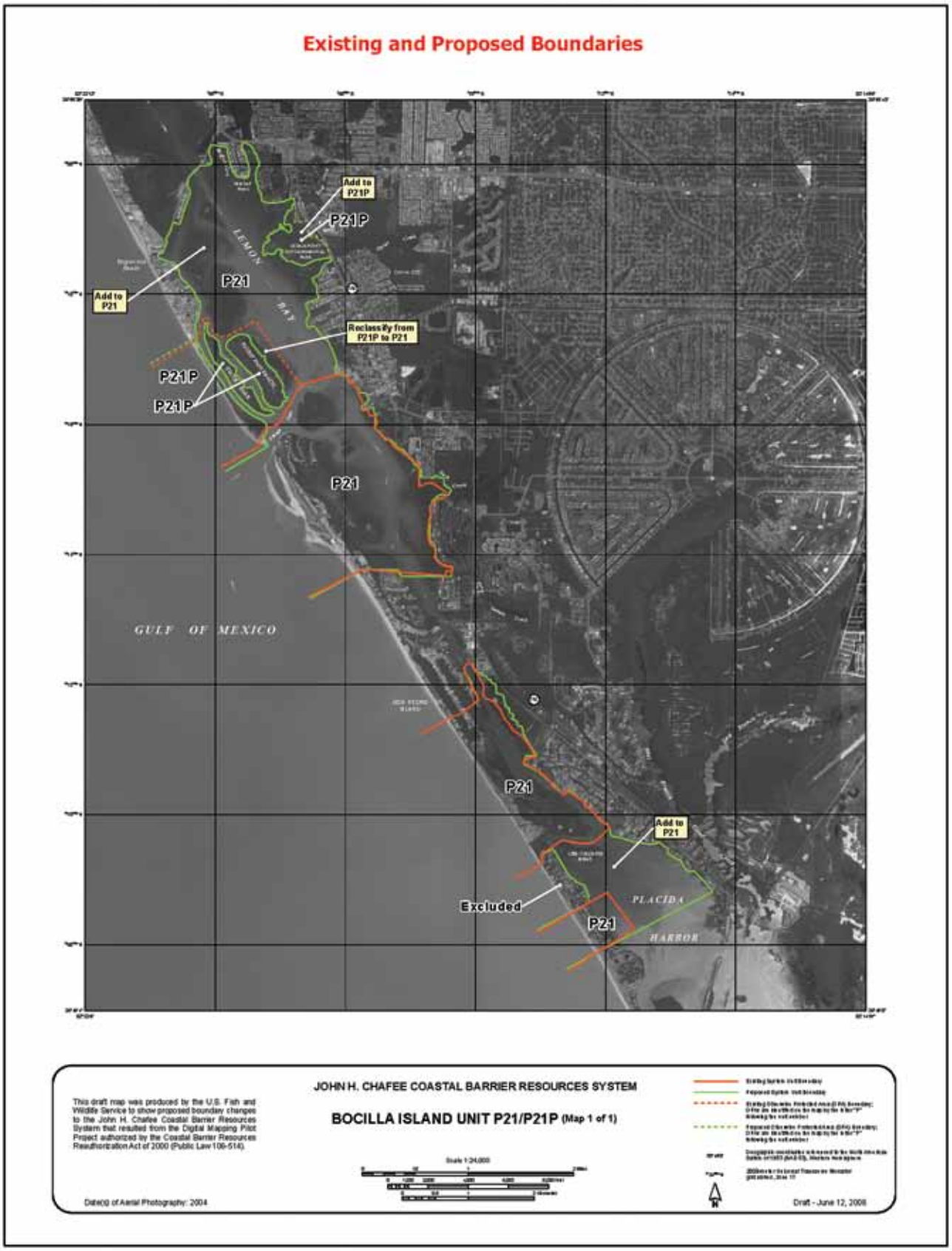


to private properties. A second segment of Unit P21P is proposed on the other side of Lemon Bay to include Cedar Point Environmental Park.
Additional Comments: There are no known private inholdings within Unit P21P. The existing boundaries of Unit P21P include open water in Lemon Bay that is not part of Stump Pass Beach State Park. This open water is proposed for reclassification from OPA Unit P21P to System Unit P21.

Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	434.6	129.9	304.7	1.2	
Added to the CBRS	111.2	73.6	37.6		0
Removed from the CBRS	0.0	0.0	0.0		0
Reclassified Area	(179.3)	1.8	(181.1)	0.0	
Proposed Unit	366.5	205.3	161.2	1.2	
Net Change	(68.1)	75.4	(143.5)	0.0	0

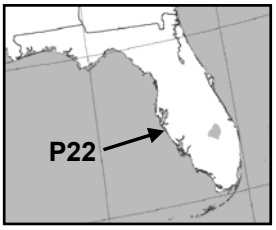
[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 2004 aerial photography, and 2005 Charlotte County property parcel information



This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit P22, Casey Key, Florida

Type of Unit: System unit
Location of Unit: Southeast of St. Petersburg on the Gulf Coast, in Sarasota County
Congressional District: 13
Establishment of Unit: Coastal Barrier Resources Act (P.L. 97-348) enacted on 10/18/1982
Historical Changes to Unit: 11/16/1990: P.L. 101-591 added wetlands to Unit P22.
Existing Boundary Description: The northern boundary of Unit P22 crosses the barrier island generally at the break-in-development, roughly follows the channel around Bird Keys, and crosses Little Sarasota Bay until it reaches the shoreline of the mainland. The landward boundary follows the wetland/fastland interface. The southern boundary crosses Little Sarasota Bay and cuts across the barrier island at the break-in-development.
Proposed Changes to Boundary: The northern boundary of Unit P22 is aligned with digital property parcel data and follows more precisely the eastern edge of the channel separating Siesta Key from Bird Keys. The landward boundary is adjusted to follow more precisely the wetland/fastland interface.
Additional Comments: There are two parks located within Unit P22. The Jim Neville Marine Preserve and Palmer Point Park were deeded to Sarasota County for conservation on August 14, 1980. Although these lands were held for conservation when Unit P22 was established in 1982, these parks are not proposed for reclassification as an otherwise protected area because the U.S. Fish and Wildlife Service records indicate that, in 1982, it was known that the county owned the lands for these parks, and Congress still chose to adopt the Unit P22 boundaries.



Acreage, Shoreline, and Structures:

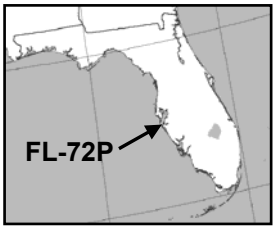
	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	618.7	89.7	529.0	0.8	
Added to the CBRS	31.3	0.8	30.5		0
Removed from the CBRS	4.6	0.0	4.6		0
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	645.4	90.5	554.9	0.8	
Net Change	26.7	0.8	25.9	0.0	0

[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1998 and 2004, aerial photography, and 2003 Sarasota County property parcel information

This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit FL-72P, Lido Key, Florida

Type of Unit: Otherwise protected area (OPA)
Location of Unit: Southeast of Sarasota on the Gulf Coast, in Sarasota County
Congressional District: 13
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: 11/2/1994: P.L. 103-461 modified the northwestern boundaries of OPA Unit FL-72P to include only areas that were undeveloped at the time the unit was established.
Underlying Conservation/Recreation Area(s) in OPA: Otter Key and South Lido Park, both owned by the Sarasota County Parks and Recreation Department.
Existing Boundary Description: The northwestern boundary of Unit FL-72P roughly follows the boundaries of Otter Key and South Lido Park. To the north, west, and south, the boundaries are in open water off the coast of Otter Key and South Lido Park. The southern boundary follows Big Sarasota Pass.
Proposed Changes to Boundary: The northwestern portion of the boundary of Unit FL-72P is aligned more precisely with the boundaries of Otter Key and South Lido Park. The southern boundary is shifted



to remain parallel to the adjusted northwestern boundary in the Gulf of Mexico.
Additional Comments: There are no known private inholdings within Unit FL-72P.

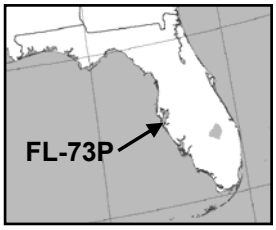
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	344.1	135.6	208.5	0.3	
Added to the CBRS	3.4	2.8	0.6		0
Removed from the CBRS	2.0	1.7	0.3		2
Reclassified Area	0.0	0.0	0.0	0	
Proposed Unit	345.5	136.7	208.8	0.3	
Net Change	1.4	1.1	0.3	0.0	(2)

[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1998 and 2004, aerial photography, and 2003 Sarasota County property parcel information

This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit FL-73P, De Soto, Florida



Type of Unit: Otherwise protected area (OPA)
Location of Unit: South of St. Petersburg on the Gulf Coast, in Manatee County
Congressional District: 13
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to the boundaries of Unit FL-73P since its designation in 1990.
Underlying Conservation/Recreation Area(s) in OPA: De Soto National Memorial, owned by the National Park Service since 1948.
Existing Boundary Description: The boundaries of Unit FL-73P roughly follow the boundaries of the De Soto National Memorial.
Proposed Changes to Boundary: The boundaries of Unit FL-73P are aligned more precisely with the boundaries of De Soto National Memorial. This includes the addition of an adjacent parcel to the south, owned by Manatee County and managed as part of the national memorial.
Additional Comments: There are no known private inholdings within Unit FL-73P. The open water component of the existing Unit FL-73P is proposed for reclassification to System Unit FL-78 because the boundary of System Unit FL-78 is proposed to include the entire Manatee River Channel.

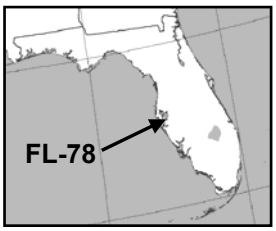
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	162.1	21.6	140.5	0.6	
Added to the CBRS	13.7	12.9	0.8		0
Removed from the CBRS	0.0	0.0	0.0		0
Reclassified Area	(137.8)	0.0	(137.8)	0.0	
Proposed Unit	38.0	34.5	3.5	0.7	
Net Change	(124.1)	12.9	(137.0)	0.1	0

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1998 and 2004, aerial photography, and 2003 Manatee County property parcel information

John H. Chafee Coastal Barrier Resources System Unit FL-78, Rattlesnake Key, Florida

Type of Unit: System unit
Location of Unit: South of St. Petersburg on the Gulf Coast, in Manatee County
Congressional District: 13
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to the boundaries of Unit FL-78 since its designation in 1990.
Existing Boundary Description: The northern boundary of Unit FL-78 crosses through Big Miguel Pass and Miguel Bay. The landward boundary continues across Critical Bayou, roughly follows the wetland/fastland interface on Terra Ceia Island, and crosses Terra Ceia Bay to include several small keys. The southern boundary generally follows the shoreline of Snead Island and the edge of mangroves on the island and appears to follow the break-in-development before continuing into the Manatee River where it turns west and extends past Snead Island.
Proposed Changes to Boundary: The landward boundary of Unit FL-78 is adjusted to follow more precisely the wetland/fastland interface on Terra Ceia Island. The southern boundary is adjusted to follow more precisely the Snead Island shoreline, to exclude a parcel which was developed at the time Unit FL-78 was established, and to follow more precisely the wetland/fastland interface and the edge of mangroves. The southern boundary is also adjusted to include the entire Manatee River channel within Unit FL-78.
Additional Comments: The open water component of the existing Unit FL-73P, which is not held for conservation or recreation purposes, is proposed for reclassification from otherwise protected area (OPA) to System Unit status as part of Unit FL-78 because the Unit FL-78 boundary is adjusted to include the entire Manatee River channel within the unit. Emerson Point Park, managed by Manatee County, is located partially within Unit FL-78, but is not proposed for reclassification as an OPA because the park was acquired by the State of Florida in 1991 after Unit FL-78 was established.

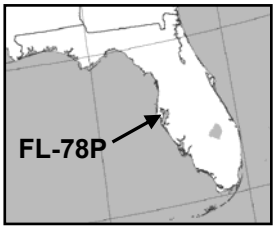


Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	3,067.9	111.8	2,956.1	4.1	
Added to the CBRS	279.7	1.3	278.4		0
Removed from the CBRS	5.3	4.5	0.8		1
Reclassified Area	137.8	0.0	137.8	0.0	
Proposed Unit	3,480.1	108.6	3,371.5	4.1	
Net Change	412.2	(3.2)	415.4	0.0	(1)

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1998, 1999 and 2004, aerial photography, and 2003 Manatee County property parcel information

John H. Chafee Coastal Barrier Resources System Unit FL-78P, Rattlesnake Key, Florida



Type of Unit: Proposed new otherwise protected area (OPA)
Location of Unit: South of St. Petersburg on the Gulf Coast, in Manatee County
Congressional District: 13
Current CBRS Status: The proposed new OPA Unit FL-78P is not currently within the John H. Chafee Coastal Barrier Resources System.
Otherwise Protected Area Criteria: Proposed new Unit FL-78P meets the Coastal Barrier Improvement Act definition of an OPA. Emerson Point Park, managed by Manatee County, was acquired for conservation by the State of Florida in 1991.
Proposed Boundaries: The boundaries of proposed new Unit FL-78P follow the boundaries of those portions of Emerson Point Park that are not within Unit FL-78. However, a small tract on the eastern end of the park is separated from the main body of the park by an undeveloped private property. Neither the private property nor the separate tract of park property is included in the proposed OPA.
Additional Comments: There are no known private inholdings within the proposed new Unit FL-78P.

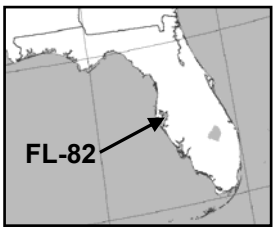
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	0.0	0.0	0.0	0.0	
Added to the CBRS	12.2	6.2	6.0		0
Removed from the CBRS	0.0	0.0	0.0		0
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	12.2	6.2	6.0	0.0	
Net Change	12.2	6.2	6.0	0.0	0

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1999 and 2004, aerial photography, and 2003 Manatee County property parcel information

John H. Chafee Coastal Barrier Resources System Unit FL-82, Bishop Harbor, Florida

Type of Unit: System unit
Location of Unit: Southeast of St. Petersburg on the Gulf Coast, in Manatee County
Congressional District: 11
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to the boundaries of Unit FL-82 since its designation in 1990.
Existing Boundary Description: The northern boundary of Unit FL-82 starts in open water, and when the boundary reaches land, it follows the wetland/fastland interface along Redfish Creek. The landward boundary roughly follows a road for a short distance in the northern section and then various natural features, including changes in vegetation (such as the edge of mangroves and the wetland/fastland interface). The landward boundary also cuts across Bishop Harbor, Clambar Bay, and Williams Bayou. The southern boundary generally follows the northern edge of Interstate Highway 275 and extends out into open water.
Proposed Changes to Boundary: The northern boundary of Unit FL-82 is adjusted to follow more precisely the edge of mangroves. The landward boundary is adjusted to follow more precisely the road in the north, and changes in vegetation including the edges of mangroves, and the wetland/fastland interface.
Additional Comments: Terra Ceia Preserve State Park is partially located within Unit FL-82, but is not proposed for reclassification as an otherwise protected area (OPA) because the State park was not established until July 1, 2004, after the designation of Unit FL-82. Portions of the park are the area that was previously Terra Ceia Aquatic Preserve. This area is not proposed for reclassification a

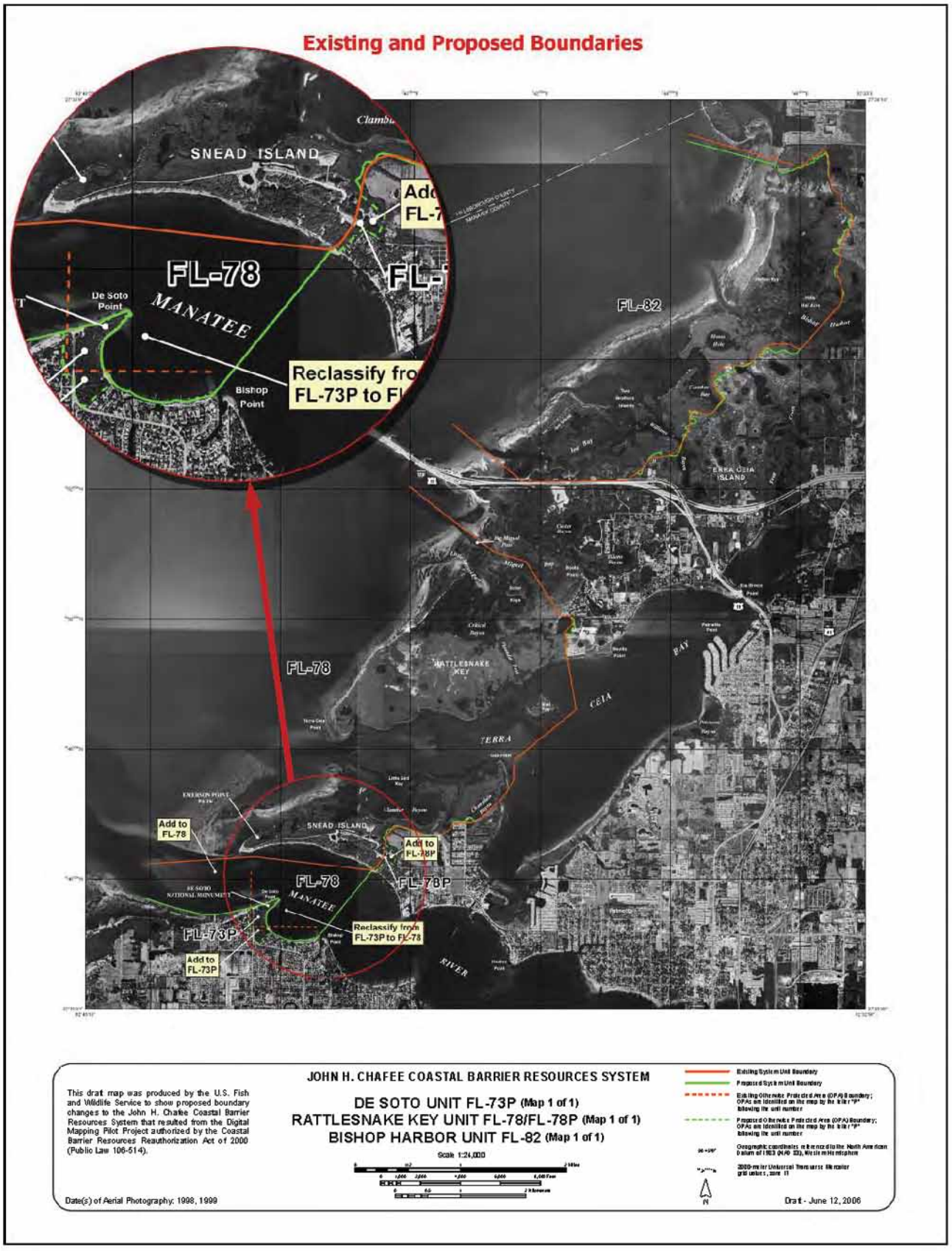


as an OPA because Volume 15 of the Department of the Interior's 1988 Report to Congress: Coastal Barrier Resources System, Recommendations for Additions to or Deletions from the Coastal Barrier Resources System stated that in Florida, Aquatic Preserves and Outstanding Florida Waters do not meet the definition of "otherwise protected".

Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	1,719.7	89.3	1,630.4	5.1	
Added to the CBRS	32.1	0.0	32.1		0
Removed from the CBRS	26.1	16.1	10.0		0
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	1,725.7	73.2	1,652.5	5.1	
Net Change	6.0	(16.1)	22.1	0.0	0

[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1999 and 2004, aerial photography, and 2003 Manatee County property parcel information

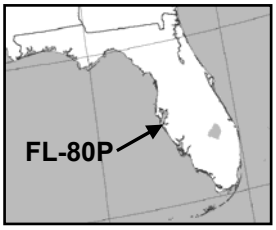


This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit FL-80P, Passage Key, Florida

Type of Unit: Otherwise protected area (OPA)
Location of Unit: Tampa Bay on the Gulf Coast, in Manatee County
Congressional District: 13
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to the boundaries of Unit FL-80P since its designation in 1990.

Underlying Conservation/Recreation Area(s) in OPA: Passage Key National Wildlife Refuge (NWR), owned by the U.S. Fish and Wildlife Service.
Existing Boundary Description: The boundaries of Unit FL-80P lie entirely in open water to include the land and developing shoals of the Passage Key NWR.
Proposed Changes to Boundary: The southern boundary of Unit FL-80P is adjusted further south to include all of the sandy shoals developing off the southern end of Passage Key.



Additional Comments: There are no known private inholdings within Unit FL-80P.

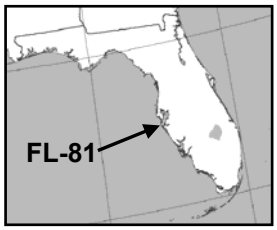
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	655.2	3.2	652.0	1.6	
Added to the CBRS	82.4	0.0	82.4		N/A
Removed from the CBRS	0.0	0.0	0.0		N/A
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	737.6	3.2	734.4	1.8	
Net Change	82.4	0.0	82.4	0.2	N/A

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count not conducted; no fastland added or removed

John H. Chafee Coastal Barrier Resources System Unit FL-81, Egmont Key, Florida

Type of Unit: System unit
Location of Unit: South of St. Petersburg on the Gulf Coast, in Hillsborough County
Congressional District: 11
Establishment of Unit: Coastal Barrier Improvement Act, or CBIA, (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to the boundaries of Unit FL-81 since its designation in 1990.
Existing Boundary Description: Unit FL-81 consists of two segments, described here as the northern and southern segments.
Northern segment: The northern and eastern boundaries are in open water around the northern tip of Egmont Key. The southern boundary cuts across Egmont Key at roughly the boundary of the Egmont Key National Wildlife Refuge (NWR).
Southern segment: The boundaries of the southern segment roughly follow the boundaries of the property owned by the Tampa Bay Pilots Association.
Proposed Changes to Boundary:
Northern segment: The southern boundary is adjusted to align more precisely with the northern boundary of the Egmont Key NWR, which is also the boundary of adjacent otherwise protected area (OPA) Unit FL-81P.
Southern segment: The northern, western, and southern boundaries are adjusted to align more precisely with the boundaries of the Tampa Bay Pilots Association property. The eastern boundary is adjusted to follow the shoreline.
Additional Comments: The northern tip of the island belongs to the U.S. Coast Guard for the maintenance of a lighthouse. Arrangements between the U.S. Fish and Wildlife Service and the Florida Department of Environmental Protection (DEP) and between the Coast Guard and the DEP allows the entire island, other than the Tampa Bay Pilots Association property and the lighthouse facility, to be managed by the DEP as Egmont Key State Park. Not enough information has been collected at this time to determine whether the Coast Guard property should be reclassified as an OPA under this arrangement. Volume 15 of the Department of the Interior's 1988 Report to Congress : Coastal Barrier Resources System, Recommendations for Additions to or Deletions from the Coastal Barrier Resources System, did not recommend including the Tampa Bay Pilots Association property within Unit FL-81. However, the map adopted by Congress with the enactment of the CBIA included this property within Unit FL-81. Section 5(a)(6) of P.L. 101-591 allows Federal expenditures to be made available for the operation and maintenance of "water navigation aids and devices, and for access thereto," if they are consistent with the Coastal Barrier Resources Act of 1982.



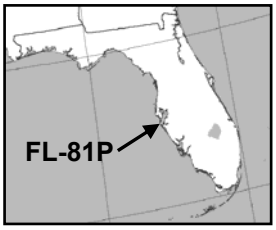
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	301.6	39.2	262.4	0.9	
Added to the CBRS	0.0	0.0	0.0		N/A
Removed from the CBRS	0.0	0.0	0.0		N/A
Reclassified Area	(4.7)	(1.0)	(3.7)	0.0	
Proposed Unit	296.9	38.2	258.7	0.9	
Net Change	(4.7)	(1.0)	(3.7)	0.0	N/A

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure countnot conducted; no fastland added or removed

John H. Chafee Coastal Barrier Resources System Unit FL-81P, Egmont Key, Florida

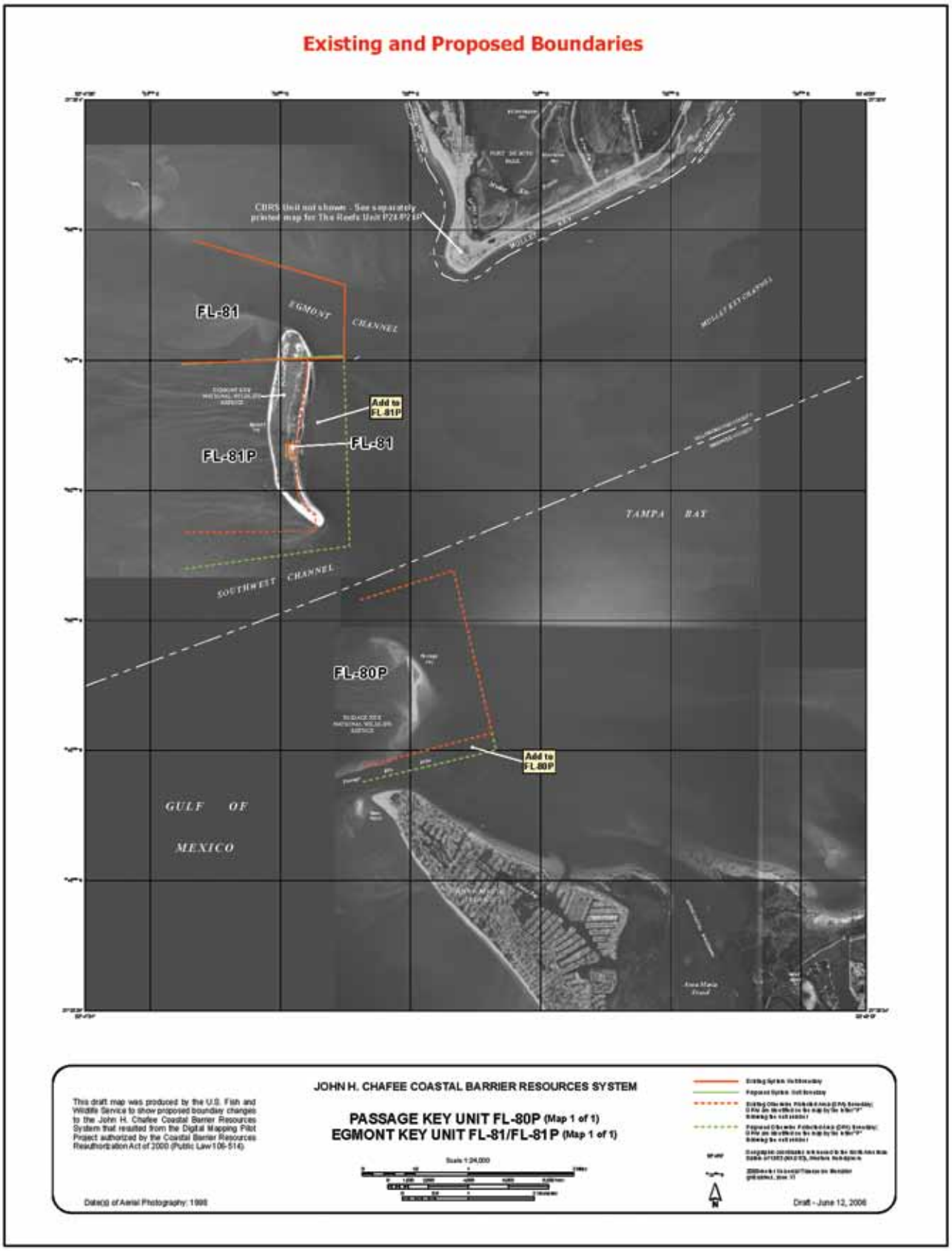
Type of Unit: Otherwise protected area (OPA)
Location of Unit: South of St. Petersburg on the Gulf Coast, in Hillsborough County
Congressional District: 11
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to Unit FL-81P since its designation in 1990.
Underlying Conservation/Recreation Area(s) in OPA: Egmont Key National Wildlife Refuge (NWR), owned by the U.S. Fish and Wildlife Service since 1974.
Existing Boundary Description: The northern boundary of Unit FL-81P crosses Egmont Key at approximately the northern boundary of the Egmont Key NWR. At the Tampa Bay side of the shore, the boundary turns south and follows the shoreline. It briefly turns inland again to exclude land owned by the Tampa Bay Pilots Association, returns to following the shoreline, and turns out to the Gulf of Mexico past the southern tip of the island.
Proposed Changes to Boundary: The eastern boundary of Unit FL-81P is moved off the shoreline as far as the eastern boundary of adjacent System Unit FL-81 in order to avoid future map revisions due to shoreline changes. The southern boundary is adjusted to include shoals developing off of the southern tip of Egmont Key. The remaining boundaries of Unit FL-81P are aligned more precisely to the boundaries of Egmont Key NWR.
Additional Comments: There are no known private inholdings within Unit FL-81P.



Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	289.7	208.2	81.5	1.7	
Added to the CBRS	536.4	9.7	526.7		0
Removed from the CBRS	0.0	0.0	0.0		0
Reclassified Area	4.7	1.0	3.7	0.0	
Proposed Unit	830.8	218.9	611.9	1.9	
Net Change	541.1	10.7	530.4	0.2	0

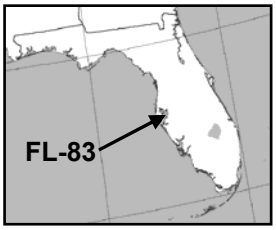
[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1998 and 2004 aerial photography, and 2004 Hillsborough County property parcel information



This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit FL-83, Cockroach Bay, Florida

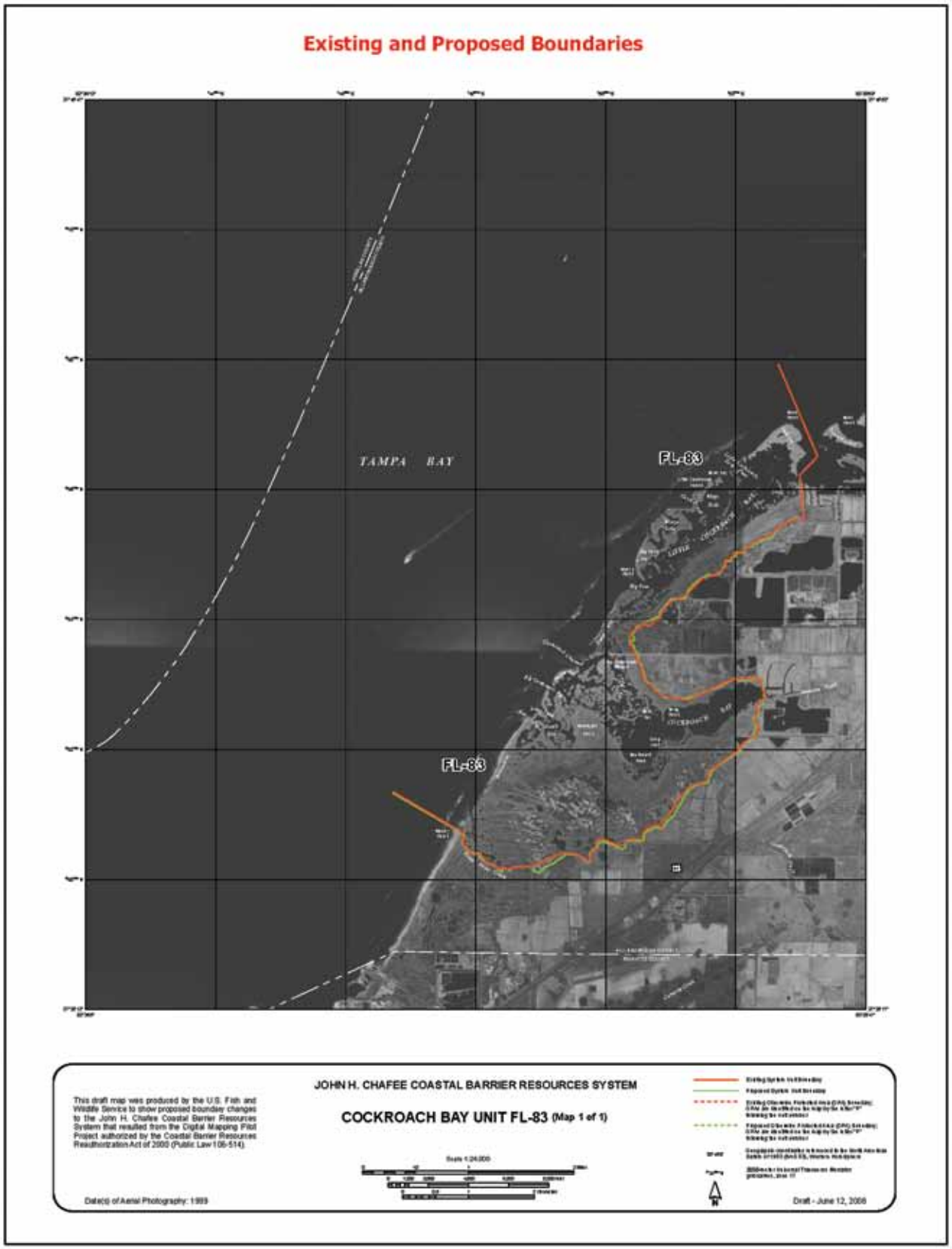
Type of Unit: System unit
Location of Unit: Southeast of St. Petersburg on the Gulf Coast, in Hillsborough County
Congressional District: 11
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to Unit FL-83 since its designation in 1990.
Existing Boundary Description: The northern boundary of Unit FL-83 cuts through open water northeast of Sand Key, and crosses the barrier at the break-in-development. The landward boundary roughly follows the edge of mangroves, a portion of the Cockroach Bay shoreline, and a levee that is located south of Cockroach Bay. The southern boundary generally follows the levee and Piney Point Creek.
Proposed Changes to Boundary: The landward boundary of Unit FL-83 is adjusted to follow more precisely the eastern edge of mangroves, the Cockroach Bay shoreline, and the northern edge of the levee. The southern boundary is adjusted to follow more precisely the northern edge of a levee and the southern shoreline of Piney Point Creek.
Additional Comments: Cockroach Bay Preserve State Park is partially located within Unit FL-83, but is not proposed for reclassification as an otherwise protected area (OPA) because the state park was not established until July 1, 2004, after the designation of Unit FL-83. Portions of the park are the area that was previously Cockroach Bay Aquatic Preserve. This area is not proposed for reclassification as an OPA because Volume 15 of the Department of the Interior's 1988 Report to Congress: Coastal Barrier Resources System, Recommendations for Additions to or Deletions from the Coastal Barrier Resources System stated that in Florida, Aquatic Preserves and Outstanding Florida Waters do not meet the definition of "otherwise protected". Two sites acquired through Hillsborough County's Environmental Lands Acquisition and Protection Program (ELAPP) are also located partially within Unit FL-83. The parcels in the "Cockroach Bay" ELAPP site were acquired between 1989 and 2004, and the "Cockroach and Piney Point Creeks" ELAPP site was acquired in 2004. The purpose of ELAPP is to acquire, preserve, and protect endangered and environmentally sensitive lands in Hillsborough County. Although some of the parcels within the "Cockroach Bay" ELAPP site were acquired before Unit FL-83 was established, they are not proposed at this time for reclassification from System unit to OPA status because insufficient information is available on the location of these parcels. The "Cockroach and Piney Point Creeks" site is also not proposed for reclassification from System unit to OPA status because this site was acquired for conservation or recreation purposes after Unit FL-83 was established in 1990.



Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	3,292.5	88.0	3,204.5	5.6	
Added to the CBRS	54.5	12.0	42.5		0
Removed from the CBRS	16.2	6.7	9.5		0
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	3,330.8	93.3	3,237.5	5.6	
Net Change	38.3	5.3	33.0	0.0	0

[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1998 and 2004 aerial photography, and 2004 Hillsborough County property parcel information

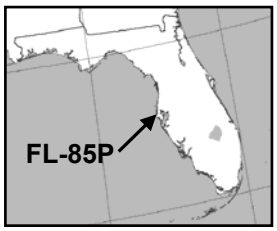


This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit FL-85P, Sand Key, Florida

Type of Unit: Otherwise protected area (OPA)
Location of Unit: West of Tampa on the Gulf Coast, in Pinellas County
Congressional District: 10
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to Unit FL-85P since its designation in 1990.
Underlying Conservation/Recreation Area(s) in OPA: Sand Key Park, owned by the Pinellas County Parks and Recreation Department since 1984. Public beach walks and sailing school managed by the City of Clearwater since approximately 1991.

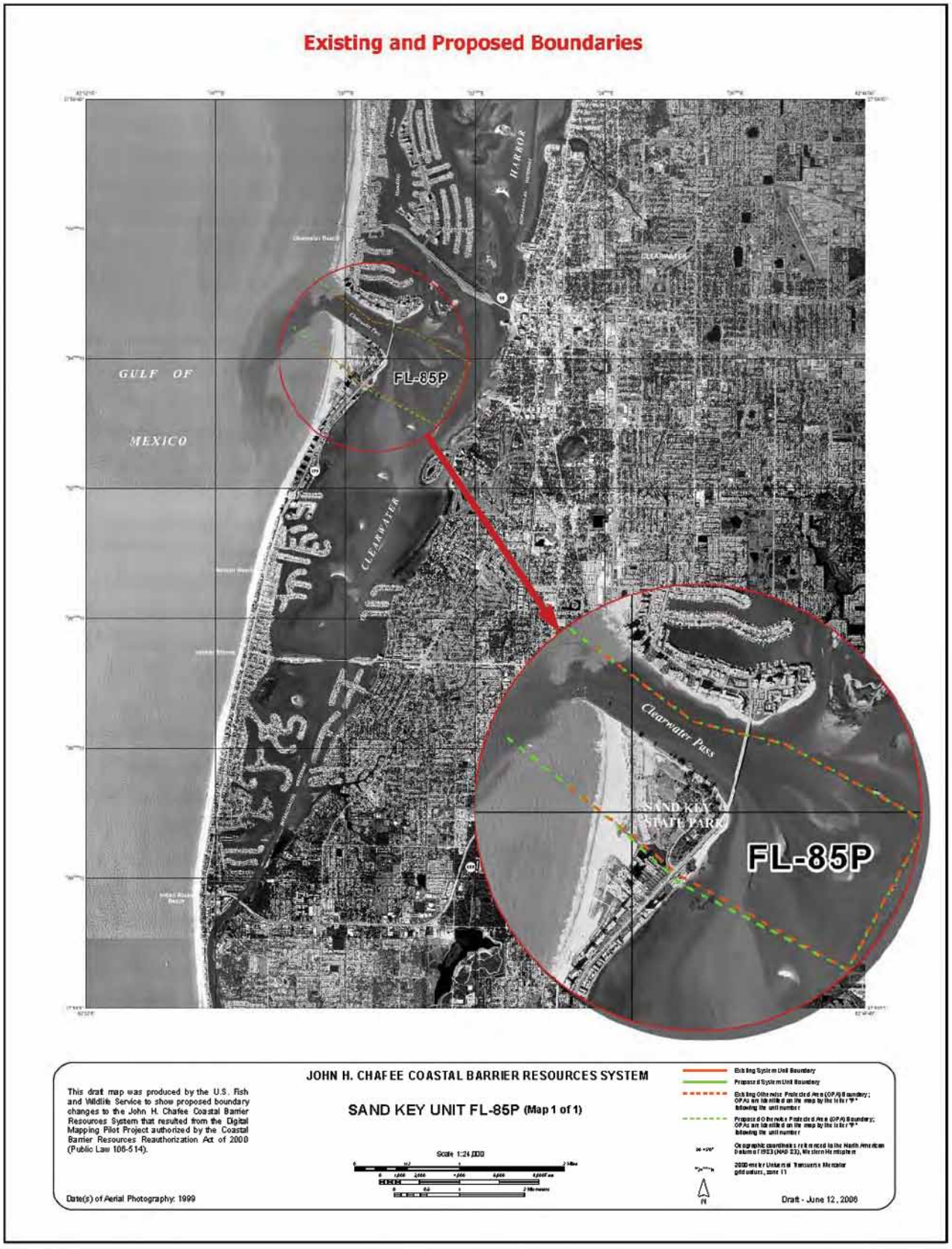
Existing Boundary Description: The northern boundary of Unit FL-85P cuts generally through Clearwater Pass. The landward boundary generally follows the center of the Intracoastal Waterway. The southern boundary roughly follows the boundaries of Sand Key Park.
Proposed Changes to Boundary: The southern boundary of Unit FL-85P is aligned more precisely to the boundaries of Sand Key Park and the City of Clearwater property. The northern and southern boundaries are extended into the Gulf of Mexico to include the entire peninsula.
Additional Comments: There are no known private inholdings within Unit FL-85P.



Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	528.2	97.9	430.3	0.8	
Added to the CBRS	11.1	2.6	8.5		1[4]
Removed from the CBRS	0.0	0.0	0.0		0
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	539.3	100.5	438.8	0.8	
Net Change	11.1	2.6	8.5	0.0	1

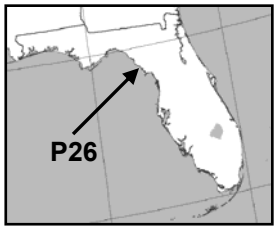
[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1999 and 2004 aerial photography, and 2004 Pinellas County property parcel information
[4] According to the Clearwater Community Sailing Center, this structure is a sailing center owned by the City of Clearwater for public recreation purposes



This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit P26, Pepperfish Keys, Florida

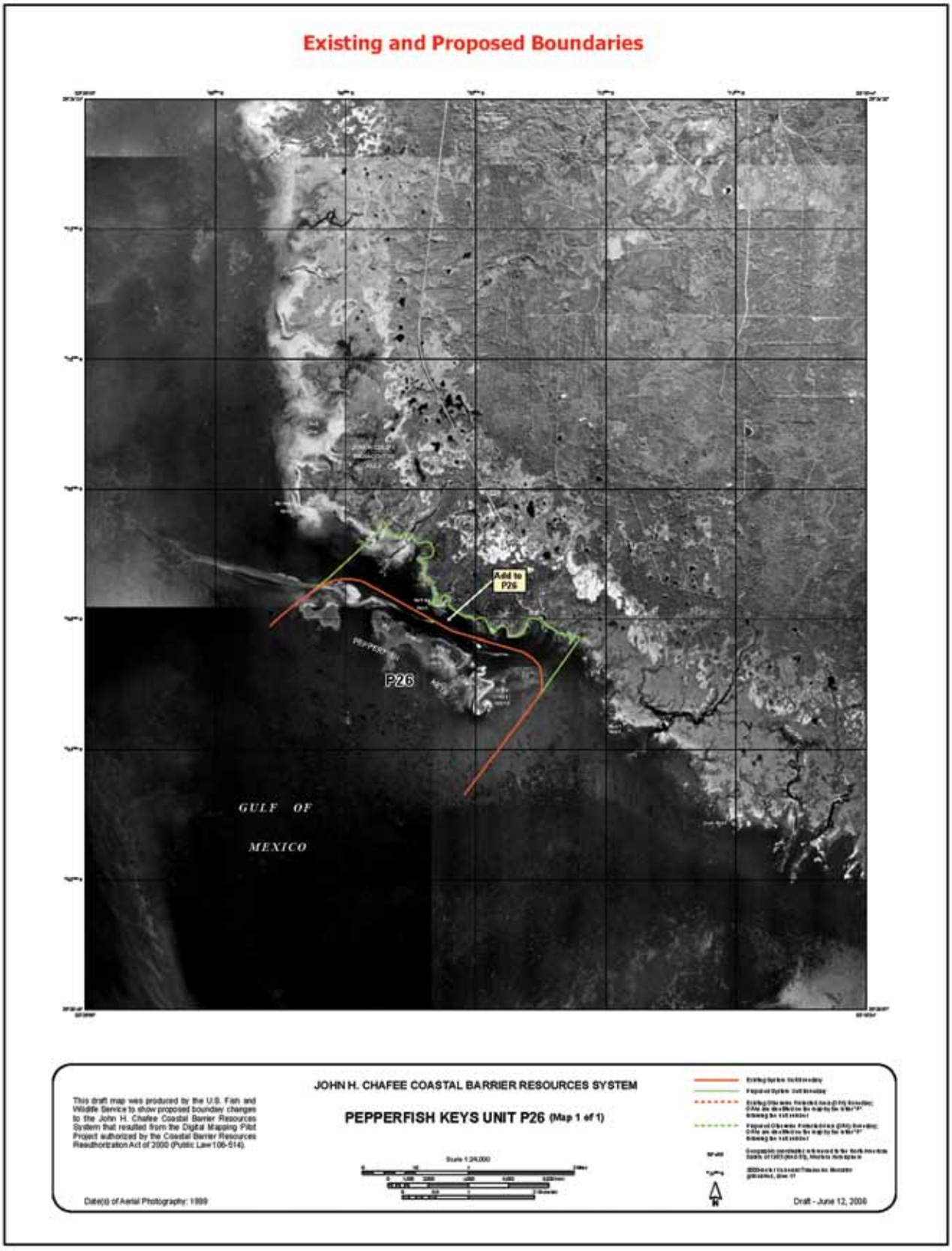
Type of Unit: System unit
Location of Unit: West of Gainesville on the Gulf Coast, in Dixie County
Congressional District: 2
Establishment of Unit: Coastal Barrier Resources Act (P.L. 97-348) enacted on 10/18/1982
Historical Changes to Unit: There have been no changes to the boundaries of Unit P26 since its designation in 1982.
Existing Boundary Description: The boundary of Unit P26 falls entirely in open water around the three islands making up Pepperfish Keys.
Proposed Changes to Boundary: The landward boundary of Unit P26 is adjusted northward to include the associated aquatic habitat located behind Pepperfish Keys.
Additional Comments: The associated aquatic habitat behind Pepperfish Keys extends onto the mainland; however, the proposed Unit P26 boundary does not include the associated aquatic habitat on the mainland because it is within the Jena Unit of the Big Bend Wildlife Management Area. At this time, the associated aquatic habitat within the wildlife management area is not proposed for addition to the John H. Chafee Coastal Barrier Resources System as an otherwise protected area (OPA) because sufficient information has not been collected to determine its eligibility as an OPA. The Big Bend Seagrasses Aquatic Preserve is located along some 150 miles of the northeast Florida Gulf of Mexico coast, including the waters surrounding Pepperfish Keys. This aquatic preserve is not proposed for reclassification as an OPA because Volume 15 of the Department of the Interior's 1988 Report to Congress: Coastal Barrier Resources System, Recommendations for Additions to or Deletions from the Coastal Barrier Resources System stated that in Florida, Aquatic Preserves and Outstanding Florida Waters do not meet the definition of "otherwise protected."



Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	683.8	0.0	683.8	3.1	
Added to the CBRS	501.3	0.0	501.3		N/A
Removed from the CBRS	0.0	0.0	0.0		N/A
Reclassified Area	0.0	0.0	0.0	0	
Proposed Unit	1,185.1	0.0	1,185.1	3.1	
Net Change	501.3	0.0	501.3	0.0	N/A

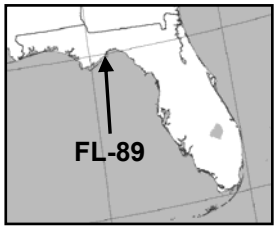
[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count not conducted; no fastland added or removed



This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit FL-89, Peninsula Point, Florida

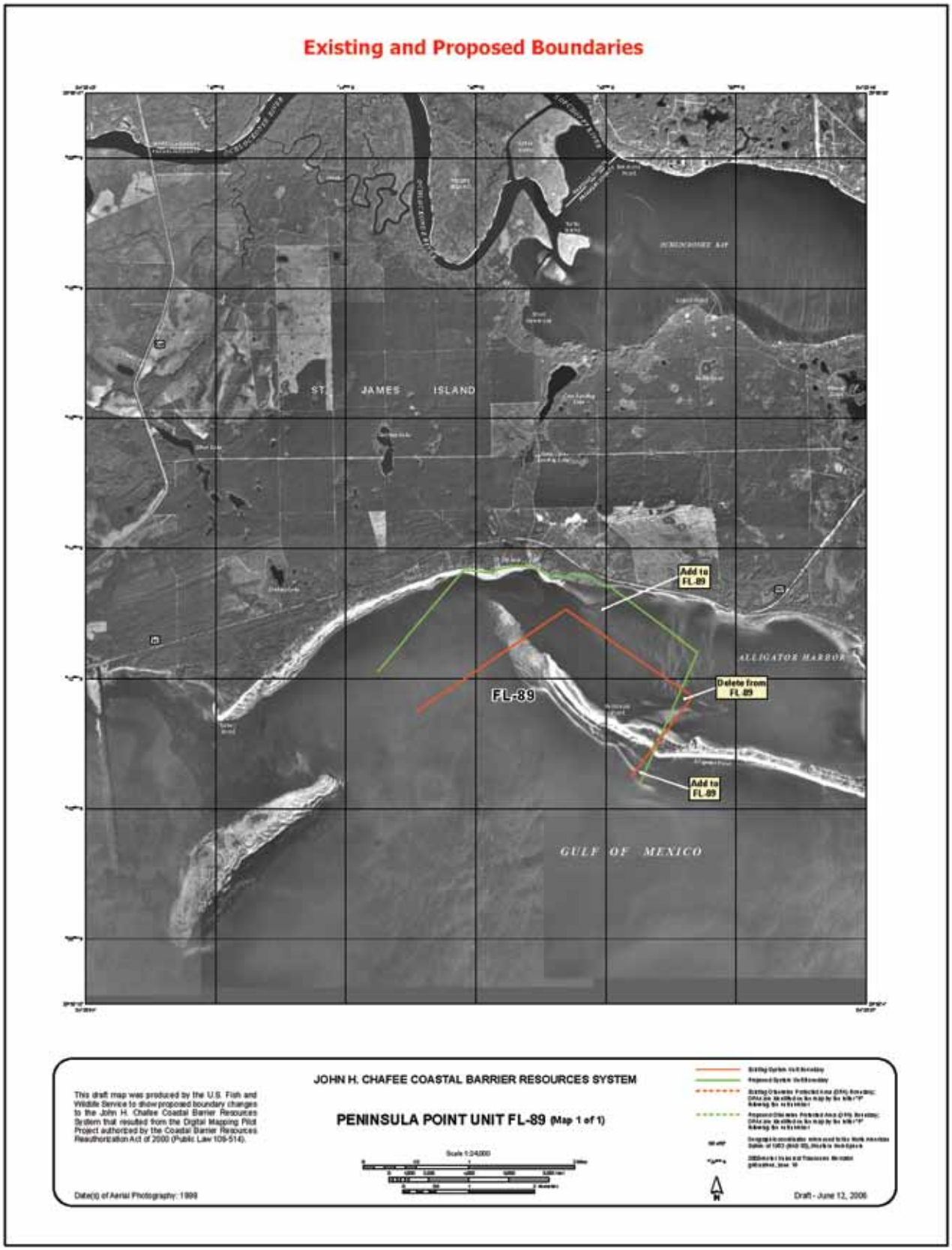
Type of Unit: System unit
Location of Unit: South of Tallahassee on the Gulf Coast, in Franklin County
Congressional District: 2
Establishment of Unit: Coastal Barrier Improvement Act, or CBIA (P.L. 101-591), enacted on 11/16/1990
Historical Changes to Unit: 2/24/1997: Unit FL-89 boundaries expanded northward and westward to include areas of accretion in the unit in accordance with Section 4(c) of P.L. 101-591, which states that System unit boundaries are to be reviewed every five years and modified to reflect changes caused by natural forces.
Existing Boundary Description: The eastern boundary of Unit FL-89 cuts across Peninsula Point. The landward boundary lies entirely within open water in Alligator Harbor. The western boundary passes through open water to the west of Peninsula Point.
Proposed Changes to Boundary: The eastern boundary of Unit FL-89 is adjusted to exclude a structure that was on-the-ground in 1990 when Unit FL-89 was established. The landward and western boundaries are adjusted to account for the northward accretion of Alligator Point, and follow the wetland/fastland interface along the mainland.
Additional Comments: Most of the land on Alligator Point within Unit FL-89 was owned by The Nature Conservancy prior to the designation of Unit FL-89 in 1990. The Department of the Interior's 1988 Report to Congress: Coastal Barrier Resources System, Recommendations for Additions to or Deletions from the Coastal Barrier Resources System included comments from the State of Florida that supported the designation of privately owned land held for conservation purposes as System units and not as otherwise protected areas in order to prohibit the availability of Federal funds should the land ever be sold by private owners for development. Congress then enacted the CBIA that established the area as System Unit FL-89.



Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	639.8	34.2	605.6	1.7	
Added to the CBRS	671.6	0.3	671.3		0
Removed from the CBRS	22.5	0.3	22.2		1
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	1,288.9	34.2	1,254.7	2.6	
Net Change	649.1	0.0	649.1	0.9	(1)

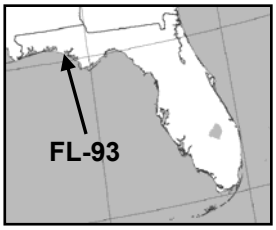
[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1999 and 2004 aerial photography, and 2005 Franklin County property parcel information



This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit FL-93, Phillips Inlet, Florida

Type of Unit: Proposed new System unit
Location of Unit: Northwest of Panama City on the Gulf Coast, in Bay County
Congressional District: 2
Current CBRS Status: Most of the proposed new Unit FL-93 is currently within the boundaries of otherwise protected area (OPA) Unit FL-93P.
System Unit Criteria: Areas of proposed new Unit FL-93 that are currently within Unit FL-93P met the Coastal Barrier Resources Act (CBRA) definition and criteria of an undeveloped coastal barrier at the time they were first included within the John H. Chafee Coastal Barrier Resources System (CBRS) in 1990. Areas of proposed new Unit FL-93 that are currently not within the CBRS currently meet the CBRA definition and criteria of an undeveloped coastal barrier. The U.S. Fish and Wildlife Service is not aware of the existence of a full complement of infrastructure in this area at the time the area was first included within the CBRS.
Proposed Boundaries: The eastern boundary of the proposed new unit is aligned to digital property parcel data. The northern boundary precisely follows the southern edge of the highway. The western boundary is aligned to the boundaries of Camp Helen State Park. This boundary is coincident with the proposed eastern boundary of adjacent OPA Unit FL-93P.
Additional Comments: The portions of proposed new Unit FL-93 currently within FL-93P are proposed for reclassification because they are not held for conservation or recreation, are not inholdings, and met the CBRA definition of



and criteria for an undeveloped coastal barrier at the time they were established within the OPA.

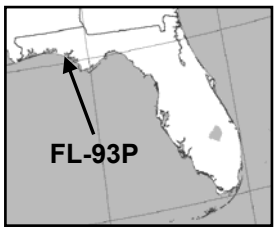
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	0.0	0.0	0.0	0.0	
Added to the CBRS	4.0	1.9	2.1		0
Removed from the CBRS	0.0	0.0	0.0		0
Reclassified Area	126.7	35.7	91.0	0.2	
Proposed Unit	130.7	37.6	93.1	0.2	
Net Change	130.7	37.6	93.1	0.2	0

[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1999 and 2004 aerial photography, and 2003 Bay County property parcel information

John H. Chafee Coastal Barrier Resources System Unit FL-93P, Phillips Inlet, Florida

Type of Unit: Otherwise protected area (OPA)
Location of Unit: Northwest of Panama City on the Gulf Coast, in Bay County
Congressional District: 2
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to the boundaries of Unit FL-93P since its designation in 1990.
Underlying Conservation/Recreation Area(s) in OPA: Camp Helen State Park, acquired by the Florida Department of Environmental Protection in 1996.
Existing Boundary Description: It is not clear what the existing boundaries of Unit FL-93P follow. Volume 15 of the Department of the Interior's 1988 Report to Congress shows the boundaries on an outdated U.S. Geological Survey topographic base map. The western boundary follows the Bay County boundary for a short distance inland from the shoreline. It intermittently follows U.S. Highway 98 and what may be contour lines around an area shown on the base map as wetlands, excluding an area of development, then follows the U.S. Highway 98 bridge across the inlet. At the southeast corner of the unit, the boundary takes an irregular path back to the Gulf of Mexico.
Proposed Changes to Boundary: The western and eastern boundaries of Unit FL-93P are adjusted to align with the boundaries of Camp Helen State Park, including significant areas not currently within the OPA, and removing privately owned land that is not held for conservation or recreation and is not an inholding of Camp Helen State Park. The landward boundary is adjusted to follow the center of Powell Lake.
Additional Comments: There are no known private inholdings within Unit FL-93P. A corporate retreat called Camp Helen, owned by Avondale Textile Mills, had been in this area since 1945. It was sold in 1987 to private interests. The State of Florida purchased the land and established Camp Helen State Park in 1996. The base map used to delineate the boundaries in the 1988 Report to Congress: Coastal Barrier Resources System, Recommendations for Additions to or Deletions from the Coastal Barrier Resources System was outdated and does not show significant condominium

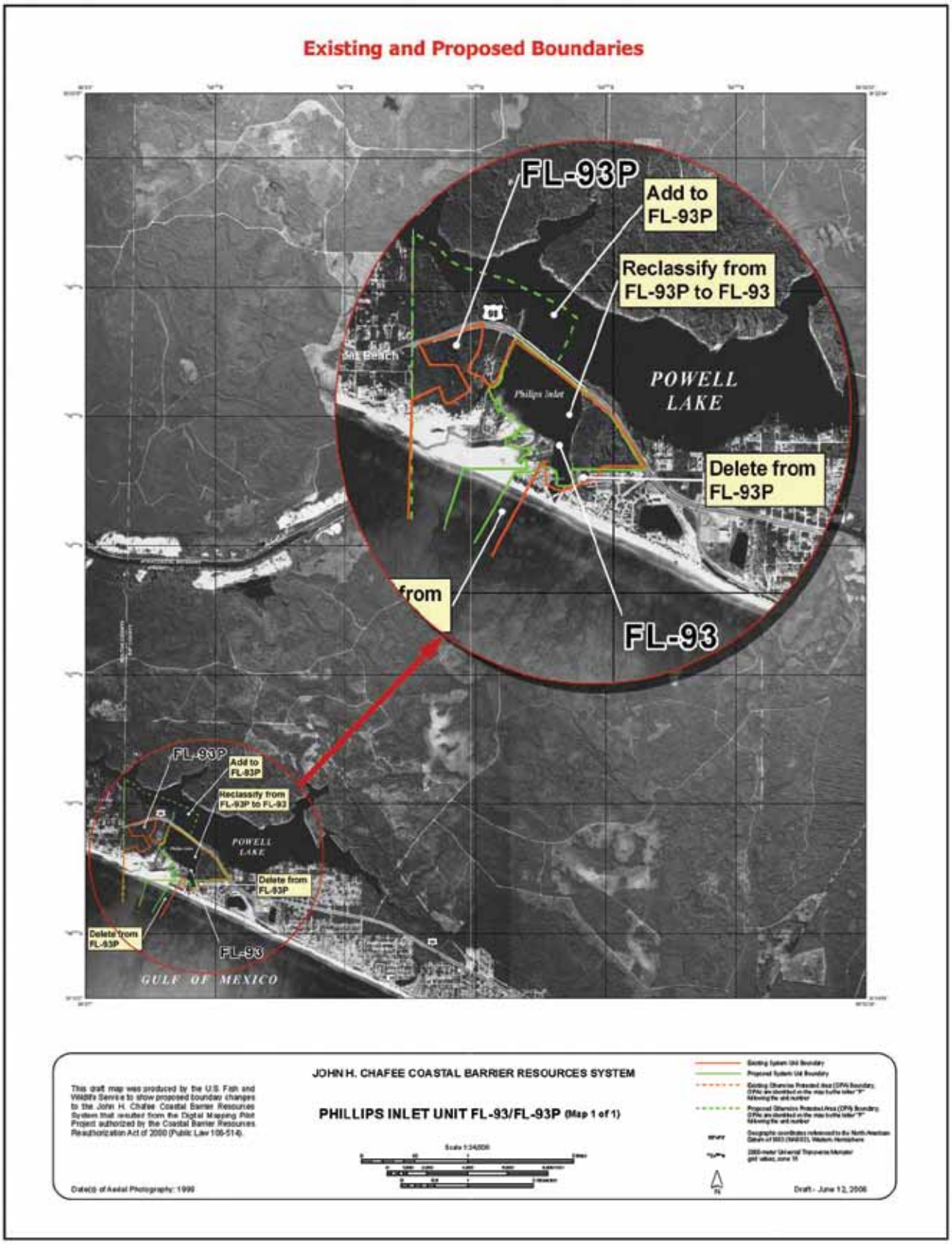


development in the southeast corner of the unit that existed when the area was established within the OPA. Currently, the OPA includes an area of privately held associated aquatic habitat and fastland that are outside the Camp Helen State Park boundary and not held for conservation or recreation purposes. The area is not an inholding and met the CBRA definition of and criteria for an undeveloped coastal barrier at the time it was established within the OPA. Therefore this area is proposed for reclassification from OPA Unit FL-93P to System Unit FL-93.

Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	241.9	82.9	159.0	0.6	
Added to the CBRS	157.1	94.8	62.3		0
Removed from the CBRS	13.4	12.0	1.4		6
Reclassified Area	(126.7)	(35.7)	(91.0)	(0.2)	
Proposed Unit	258.9	130.0	128.9	0.3	
Net Change	17.0	47.1	(30.1)	(0.3)	(6)

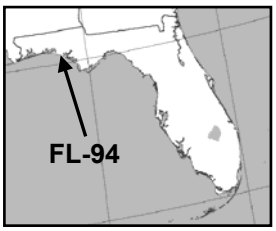
[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count derived from 1999 and 2004 aerial photography, and 2003 Bay County property parcel information



This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit FL-94, Deer Lake Complex, Florida

Type of Unit: System unit
Location of Unit: North of Panama City on the Gulf Coast, in Walton County
Congressional District: 2
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to the boundaries of Unit FL-94 since its designation in 1990.
Existing Boundary Description: The eastern boundary of Unit FL-94 generally follows the shoreline of Camp Creek Lake and the southern edge of State Highway 30A. The northern boundary follows the break between the sand and vegetated areas. The western boundary generally follows the western edge of an unnamed lake on the west side of Deer Lake, and extends straight out into the Gulf of Mexico once it reaches the southern edge of the lake.
Proposed Changes to Boundary: The eastern boundary of Unit FL-94 is aligned with digital property parcel data and is adjusted to follow more precisely the Camp Creek Lake shoreline. The northern boundary is aligned with the southern side of the State Highway 30A bridge over Camp Creek Lake and is adjusted to follow more precisely the break between the sand and vegetated areas and the shorelines of Camp Creek Lake and the unnamed lake on the west side of Deer Lake. The western boundary is adjusted to follow more precisely the shoreline of the unnamed lake on the west side of Deer Lake and is aligned with digital property parcel data to exclude development that was on-the-ground in 1990 when Unit FL-94 was established.

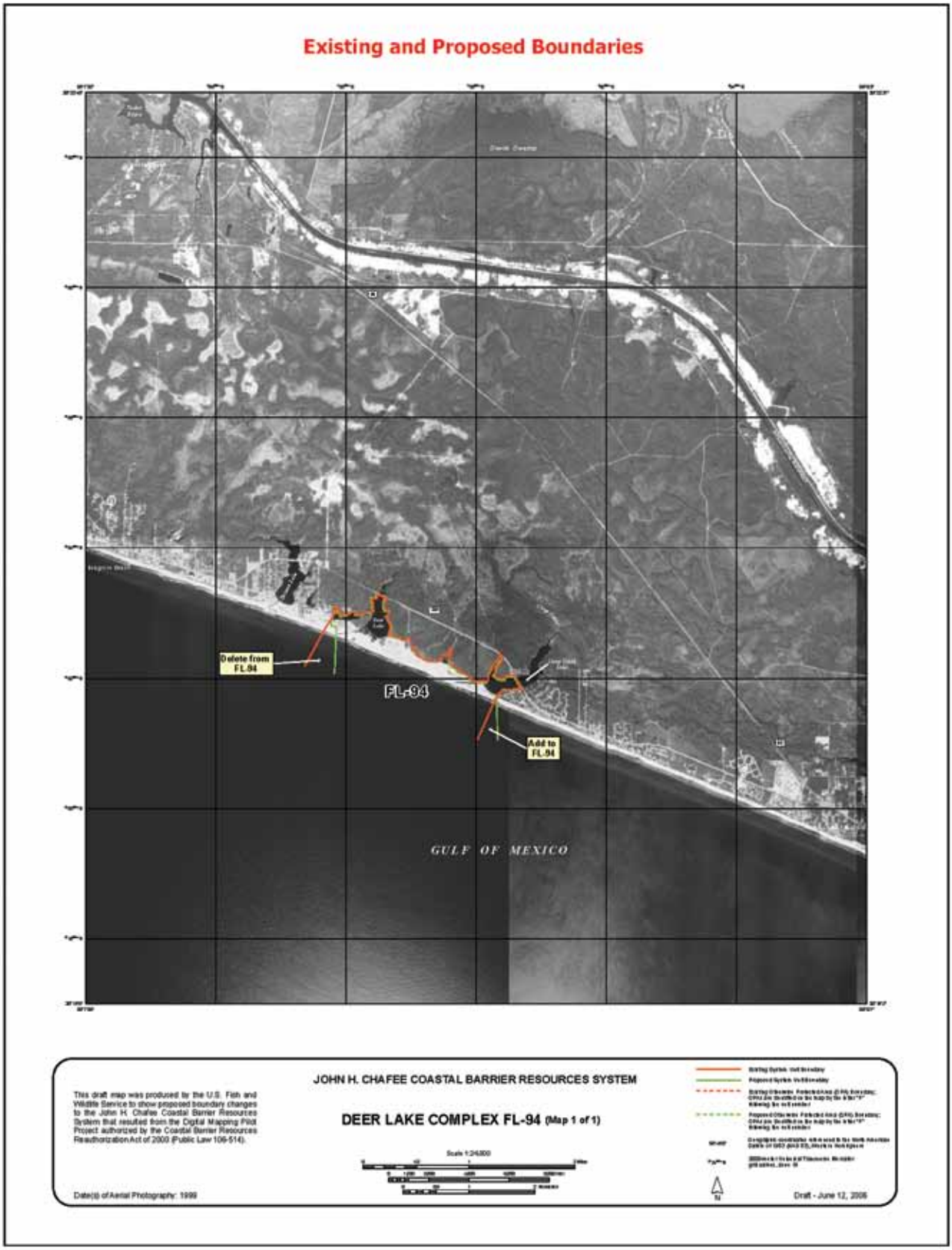


Additional Comments: Deer Lake State Park is located partially within Unit FL-94, but is not proposed for reclassification as an otherwise protected area because the park was acquired on February 6, 1996, after the designation of Unit FL-94.

Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	265.7	89.2	176.5	1.8	
Added to the CBRS	3.2	1.4	1.8		0
Removed from the CBRS	17.2	12.0	5.2		11
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	251.7	78.6	173.1	1.7	
Net Change	(14.0)	(10.6)	(3.4)	(0.1)	(11)

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count derived from 1999 and 2004 aerial photography, and 2004 Walton County property parcel information

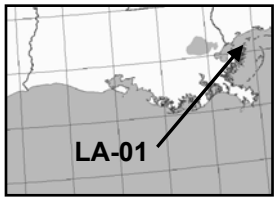


This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit LA-01, Isle au Pitre, Louisiana

Type of Unit: System unit
Location of Unit: East of New Orleans, in St. Bernard Parish
Congressional District: 3
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to Unit LA-01 since its designation in 1990.

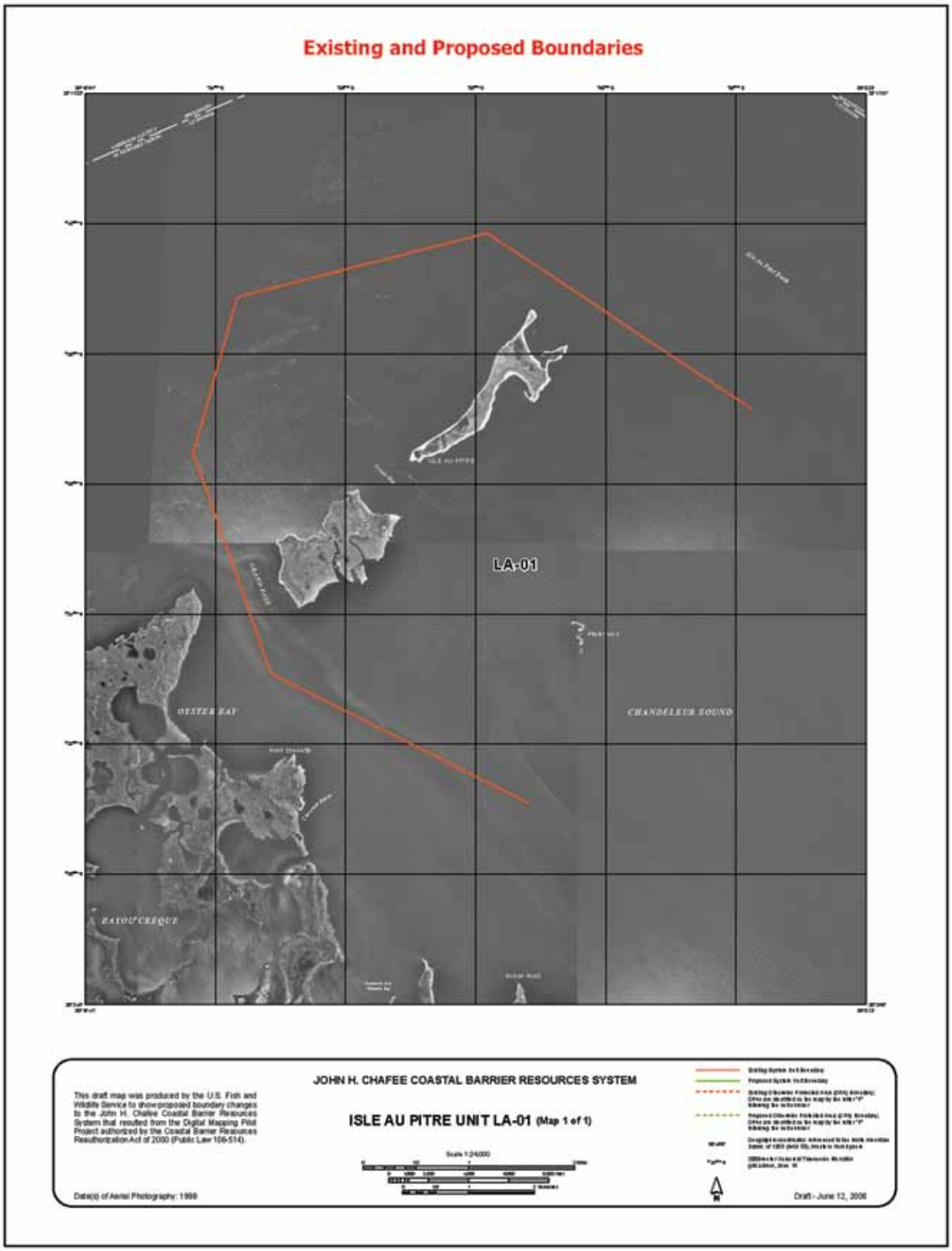
Existing Boundary Description: The boundary of Unit LA-01 falls entirely in open water around the three islands making up the unit.
Proposed Changes to Boundary: There are no proposed changes to the boundary of Unit LA-01.



Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	5,029.6	12.8	5,016.8	6.1	
Added to the CBRS	0.0	0.0	0.0		N/A
Removed from the CBRS	0.0	0.0	0.0		N/A
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	5,029.6	12.8	5,016.8	6.1	
Net Change	0.0	0.0	0.0	0.0	N/A

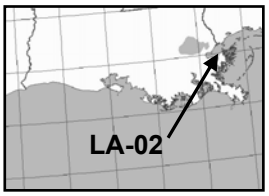
1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count not conducted; no fastland added or removed



This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit LA-02, Grand Island, Louisiana

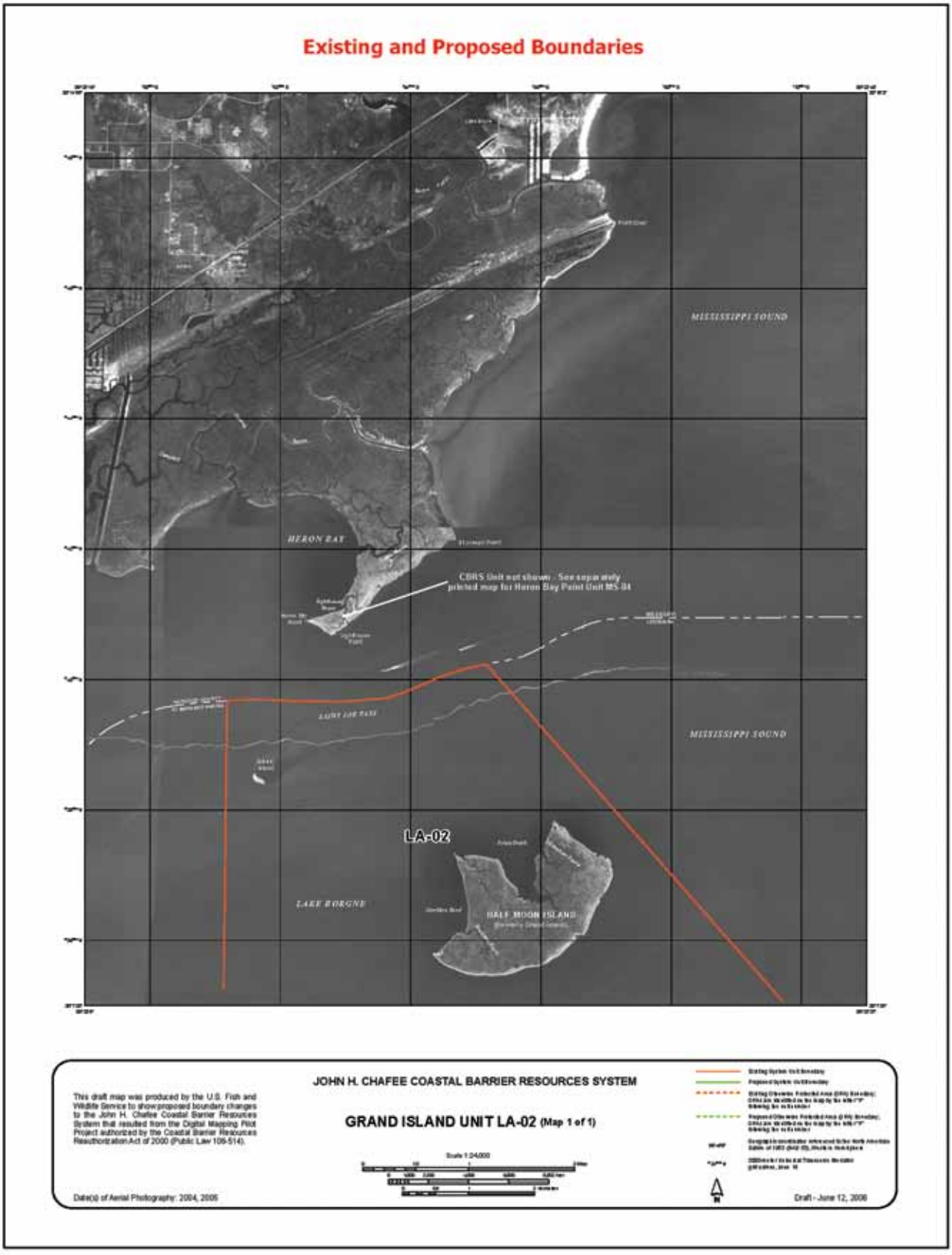
Type of Unit: System unit
Location of Unit: East of New Orleans, in St. Bernard Parish
Congressional District: 3
Establishment of Unit: Coastal Barrier Improvement Act (P.L. 101-591) enacted on 11/16/1990
Historical Changes to Unit: There have been no changes to Unit LA-02 since its designation in 1990.
Existing Boundary Description: The boundary of Unit LA-02 falls entirely in open water around the two islands making up the unit. The northern boundary follows the State boundary between Mississippi and Louisiana.
Proposed Changes to Boundary: There are no proposed changes to the boundaries of Unit LA-02.
Additional Comments: According to the 1994 U. S. Geological Survey topographic map titled Saint Joe Pass, the name of the large island within Unit LA-02 has changed from Grand Island to Half Moon Island.



Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	6,013.6	0.0	6,013.6	2.4	
Added to the CBRS	0.0	0.0	0.0		N/A
Removed from the CBRS	0.0	0.0	0.0		N/A
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	6,013.6	0.0	6,013.6	2.4	
Net Change	0.0	0.0	0.0	0.0	N/A

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count not conducted; no fastland added or removed



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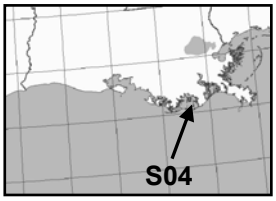
John H. Chafee Coastal Barrier Resources System Unit S04, Timbalier Bay, Louisiana

Type of Unit: System unit
Location of Unit: South of New Orleans, in Lafourche Parish
Congressional District: 3
Establishment of Unit: Coastal Barrier Resources Act (P.L. 97-348) enacted on 10/18/1982
Historical Changes to Unit: 11/16/1990: P.L. 101-591 modified Unit S04 to add associated aquatic habitat. In addition, the eastern portion of Unit S04 was added to Unit S03.
Existing Boundary Description: The eastern boundary of Unit S04 generally follows the center of Belle Pass, and the western side of Bayou Lafourche, switching to the eastern side of Bayou Lafourche after the point where it meets a flotation canal. The northern boundary roughly follows the center of Havoline Canal and a small stream that connects Havoline Canal and Devils Bay, and then the boundary passes through Devils Bay. The western boundary crosses through Timbalier Bay. A portion of the western boundary once passed through East Timbalier Island. The island has eroded, and the boundary now lies in open water with all of East Timbalier Island to the west. Also, a portion of the western boundary is contiguous with the eastern boundary of adjacent Unit S05.
Proposed Changes to Boundary: The eastern portion of the Unit S04 boundary that follows Belle Pass is adjusted to include the entire Belle Pass channel. The eastern portion of the boundary that follows Bayou Lafourche north of the flotation canal is adjusted to align with the eastern shoreline of Bayou Lafourche. The northern portion of the boundary that follows Havoline Canal is adjusted to include the entire Havoline Canal channel. The northern portion of the boundary following the small stream that connects Havoline Canal and Devils Bay is adjusted to align with the northern shoreline of that stream.



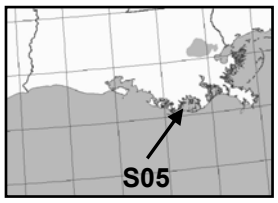
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	10,425.5	32.8	10,392.7	3.5	
Added to the CBRS	170.6	0.0	170.6		N/A
Removed from the CBRS	0.1	0.0	0.1		N/A
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	10,596.0	32.8	10,563.2	3.6	
Net Change	170.5	0.0	170.5	0.1	N/A

[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count not conducted; no fastland added or removed

John H. Chafee Coastal Barrier Resources System Unit S05, Timbalier Islands, Louisiana

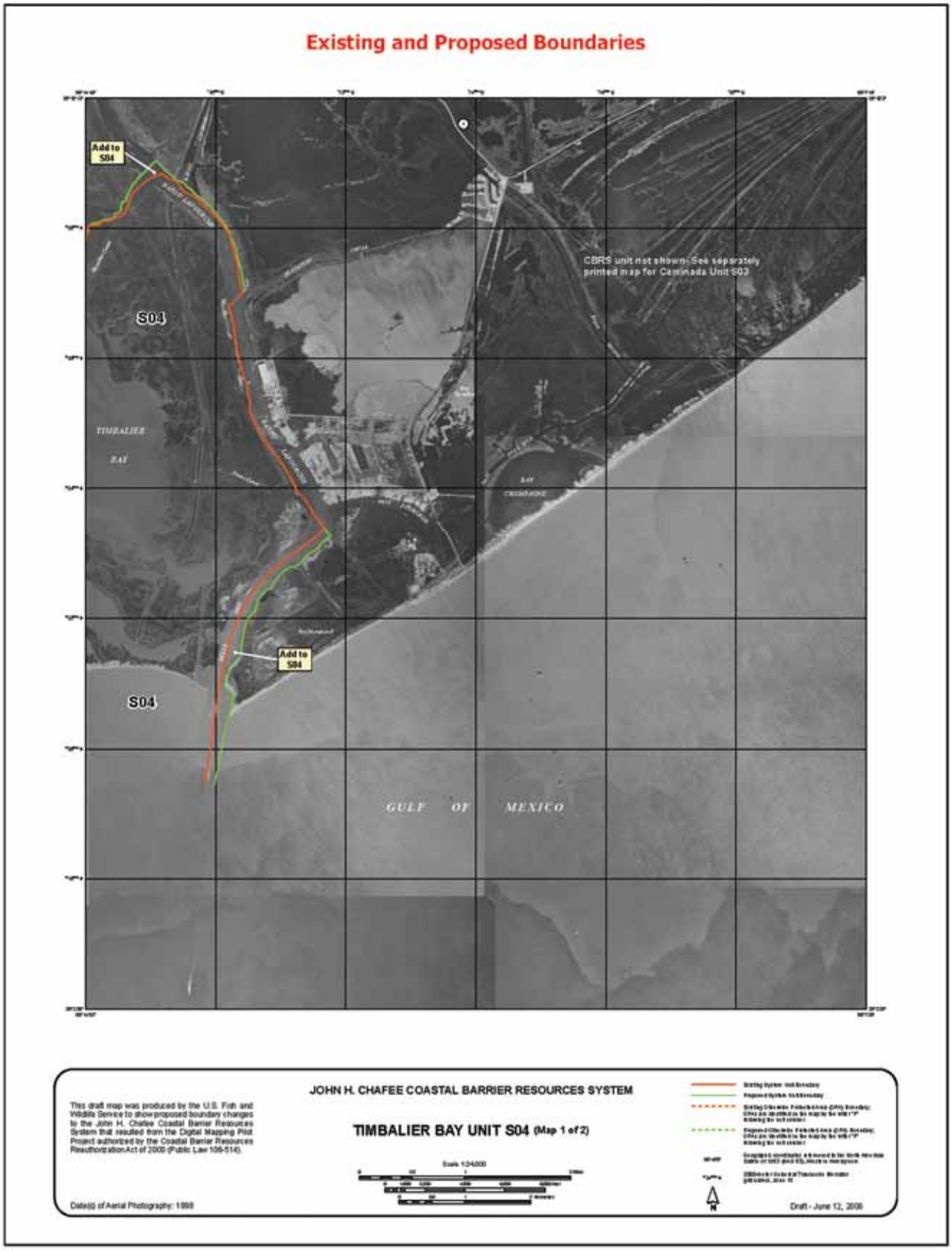
Type of Unit: System unit
Location of Unit: South of New Orleans, in Terrebonne and Lafourche Parishes
Congressional District: 3
Establishment of Unit: Coastal Barrier Resources Act (P.L. 97-348) enacted on 10/18/1982
Historical Changes to Unit: 11/16/1990: P.L. 101-591 added associated aquatic habitat and East Timbalier Island to Unit S05.
Existing Boundary Description: The boundary of Unit S05 falls mostly in open water. The eastern boundary once passed through East Timbalier Island. The island has eroded, and the boundary now lies in open water with all of East Timbalier Island to the west. Also, the eastern boundary is contiguous with a portion of the western boundary of adjacent System Unit S04. The northern boundary runs through Timbalier and Terrebonne Bays, leaving about one mile of open water behind Timbalier and East Timbalier Islands. The western boundary once ran through open water; however, Timbalier Island has accreted westward so that the boundary now cuts across the tip of the island.
Proposed Changes to Boundary: The northern boundary of Unit S05 is adjusted to account for the northward accretion of a small island within the unit. The western boundary is adjusted to account for the westward accretion of Timbalier Island.
Additional Comments: The proposed changes to the northern boundary will add an oil platform to Unit S05. Section 6(a)(1) of P.L. 101-591 allows the use of Federal expenditures and financial assistance for "[a]ny use or facility necessary for the exploration, extraction, or transportation of energy resources which can be carried out only on, in, or adjacent to a coastal water area because the use or facility requires access to the coastal water body."



Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	17,723.3	355.7	17,367.6	17.8	
Added to the CBRS	732.5	0.0	732.5		N/A
Removed from the CBRS	0.0	0.0	0.0		N/A
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	18,455.8	355.7	18,100.1	18.4	
Net Change	732.5	0.0	732.5	0.6	N/A

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count not conducted; no fastland added or removed



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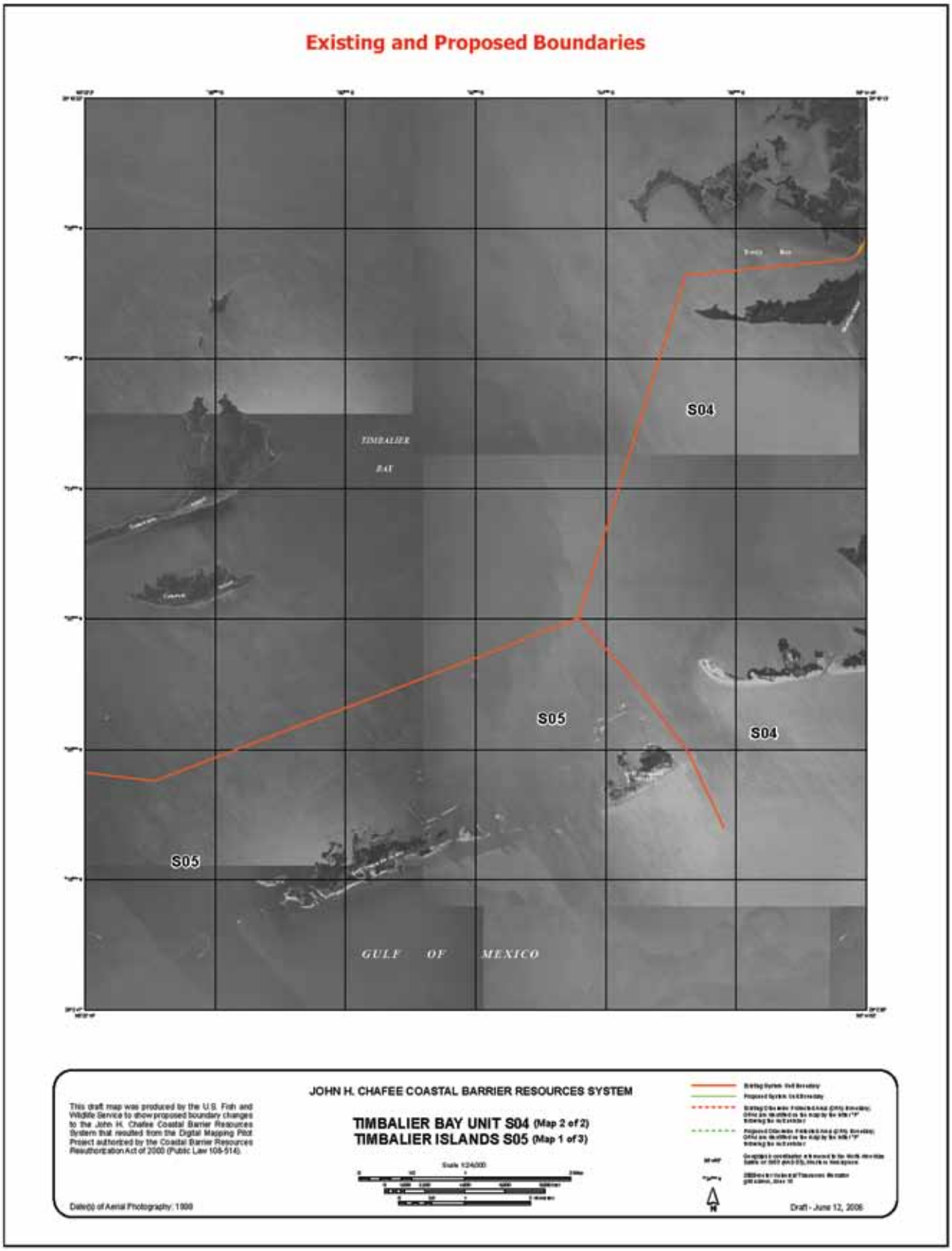

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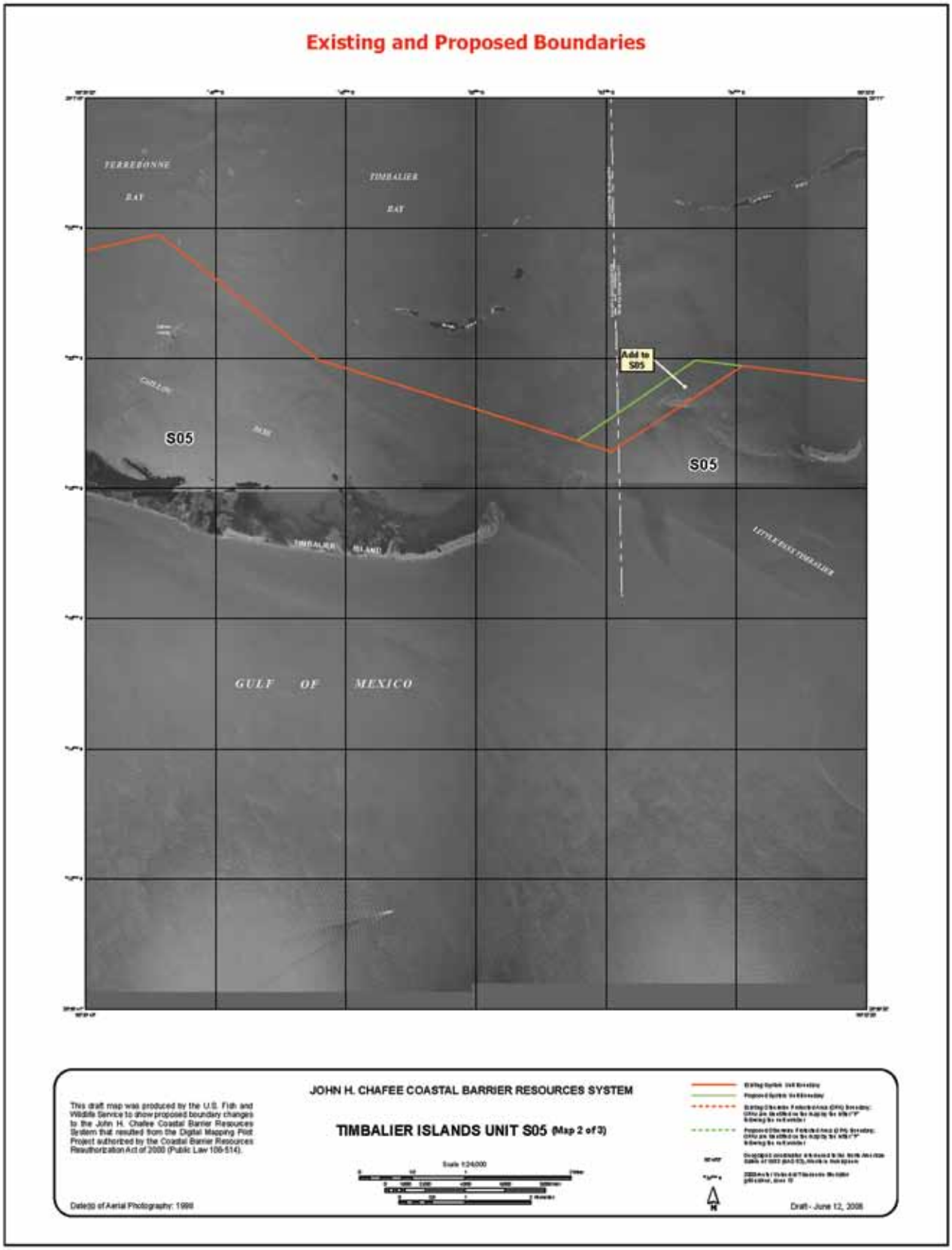

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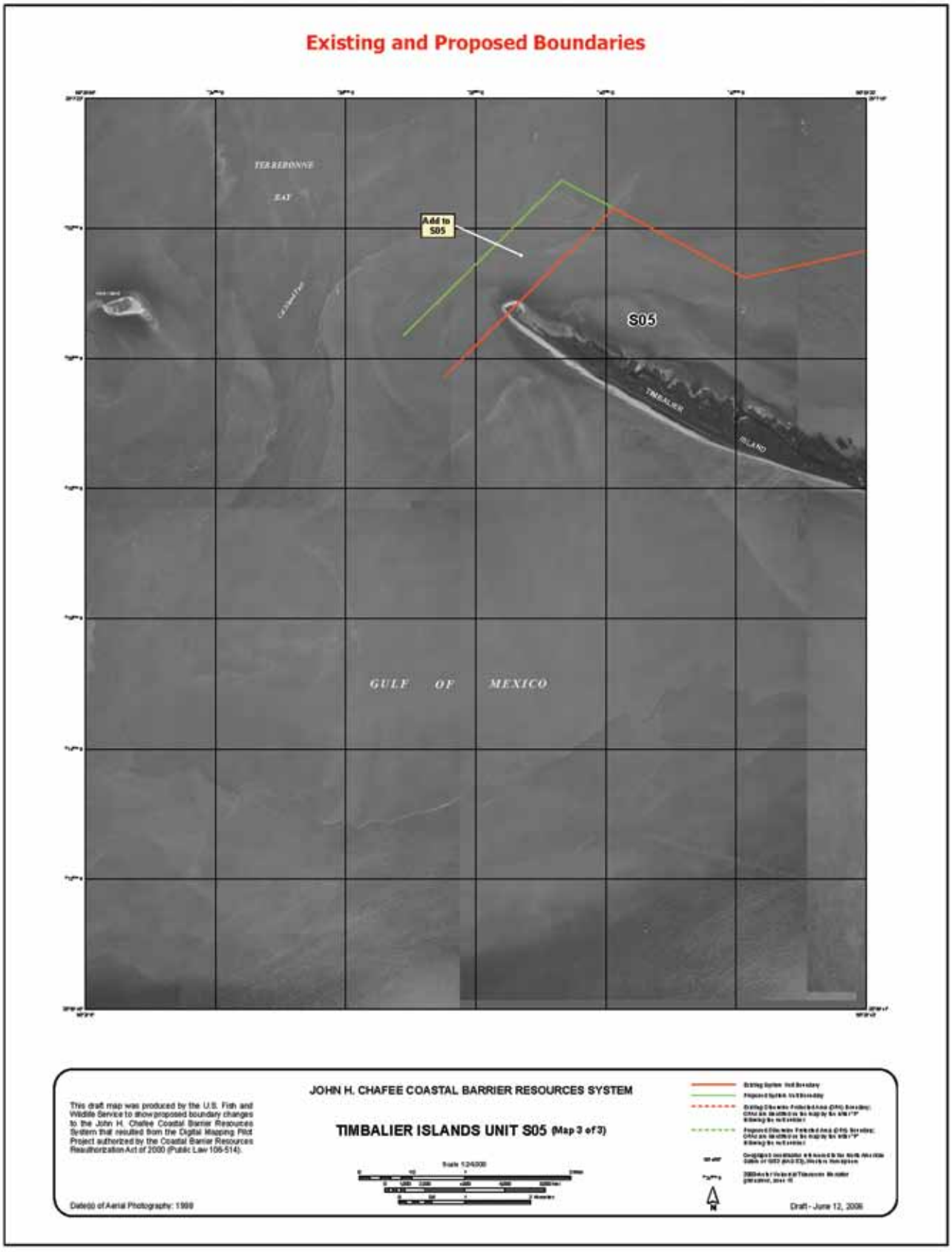
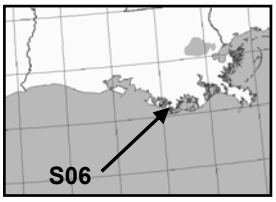


This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit S06, Isles Dernieres, Louisiana

Type of Unit: System unit
Location of Unit: South of New Orleans, in Terrebonne Parish
Congressional District: 3
Establishment of Unit: Coastal Barrier Resources Act (P.L. 97-348) enacted on 10/18/1982
Historical Changes to Unit: 11/16/1990: P. L. 101-591 added associated aquatic habitat to Unit S06.
Existing Boundary Description: The eastern boundary of Unit S06 generally follows Wine Island Pass. The northern boundary crosses through Lake Pelto about one mile north of Isles Dernieres, turns north at Whiskey Pass, follows channels for the most part through the wetlands, and heads south through Caillou Bay until the boundary is about one mile north of Raccoon Island where it turns west. The western boundary lies in open water west of Raccoon Island.
Proposed Changes to Boundary: The northern boundary of Unit S06 from near the point where it turns north at Whiskey Pass through the wetlands is adjusted to include the entire channel. The western portion of Raccoon Island has migrated northward. Therefore, the boundary north of Raccoon Island is adjusted to be approximately one mile from the farthest landward extent of the island.

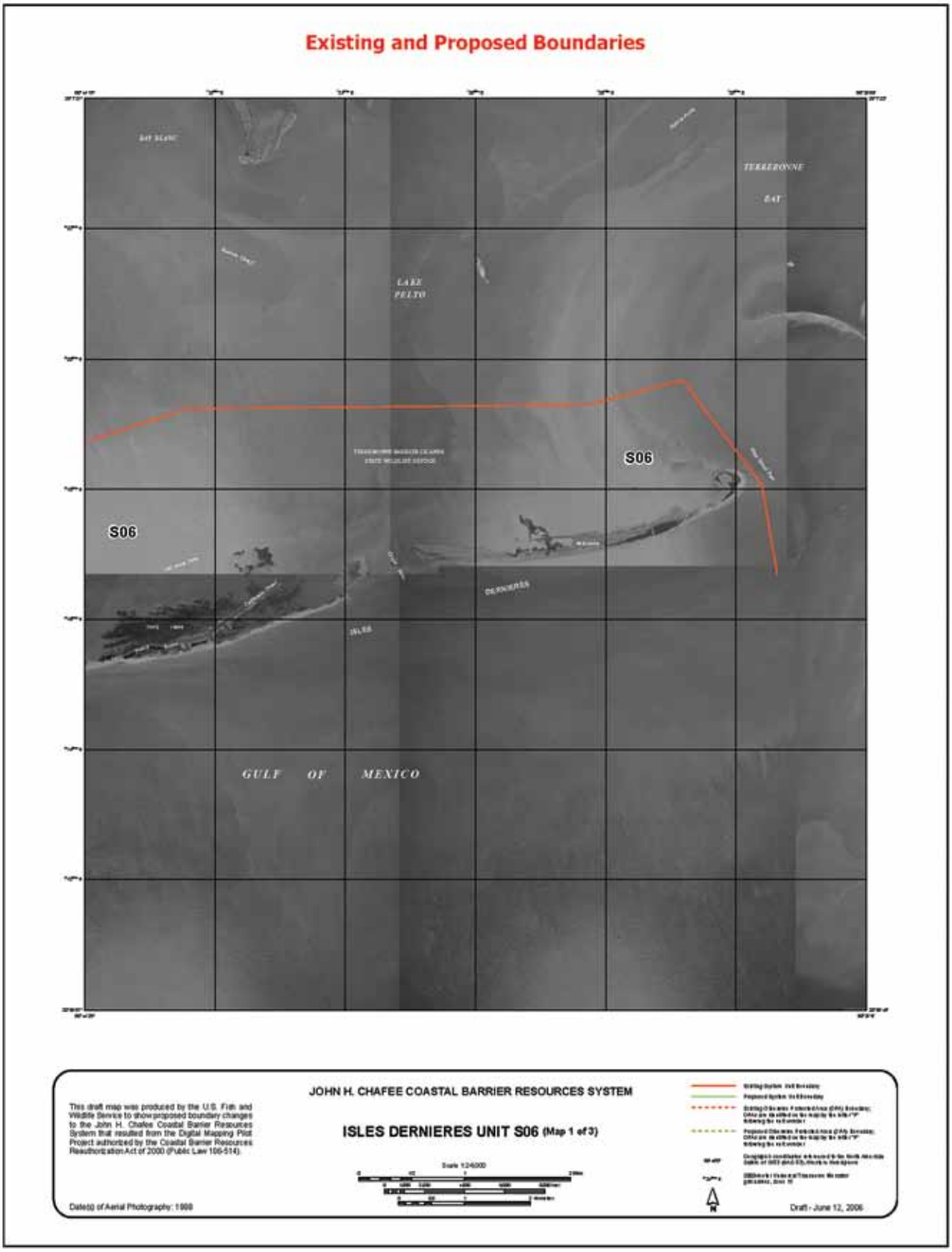


Additional Comments: Although Terrebonne Barrier Islands State Wildlife Refuge is within Unit S06, the refuge is not proposed for reclassification as an otherwise protected area because the refuge was not acquired by the State until 1992.

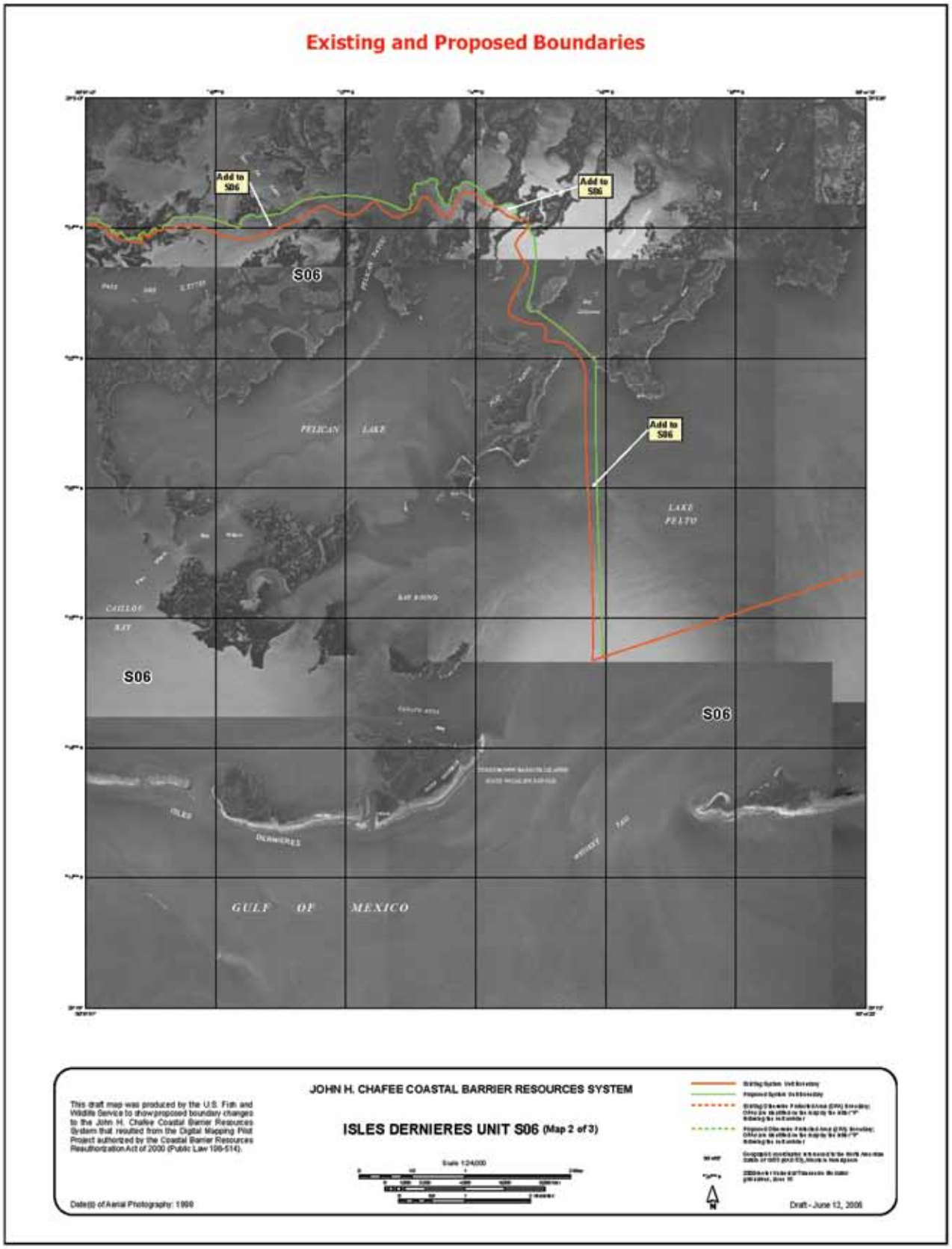
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	35,658.7	29.9	35,628.8	21.0	
Added to the CBRS	1,229.6	0.0	1,229.6		N/A
Removed from the CBRS	0.1	0.0	0.1		N/A
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	36,888.2	29.9	36,858.3	21.0	
Net Change	1,229.5	0.0	1,229.5	0.0	N/A

[1] Land above mean high tide
[2] Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
[3] Structure count not conducted; no fastland added or removed



This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.



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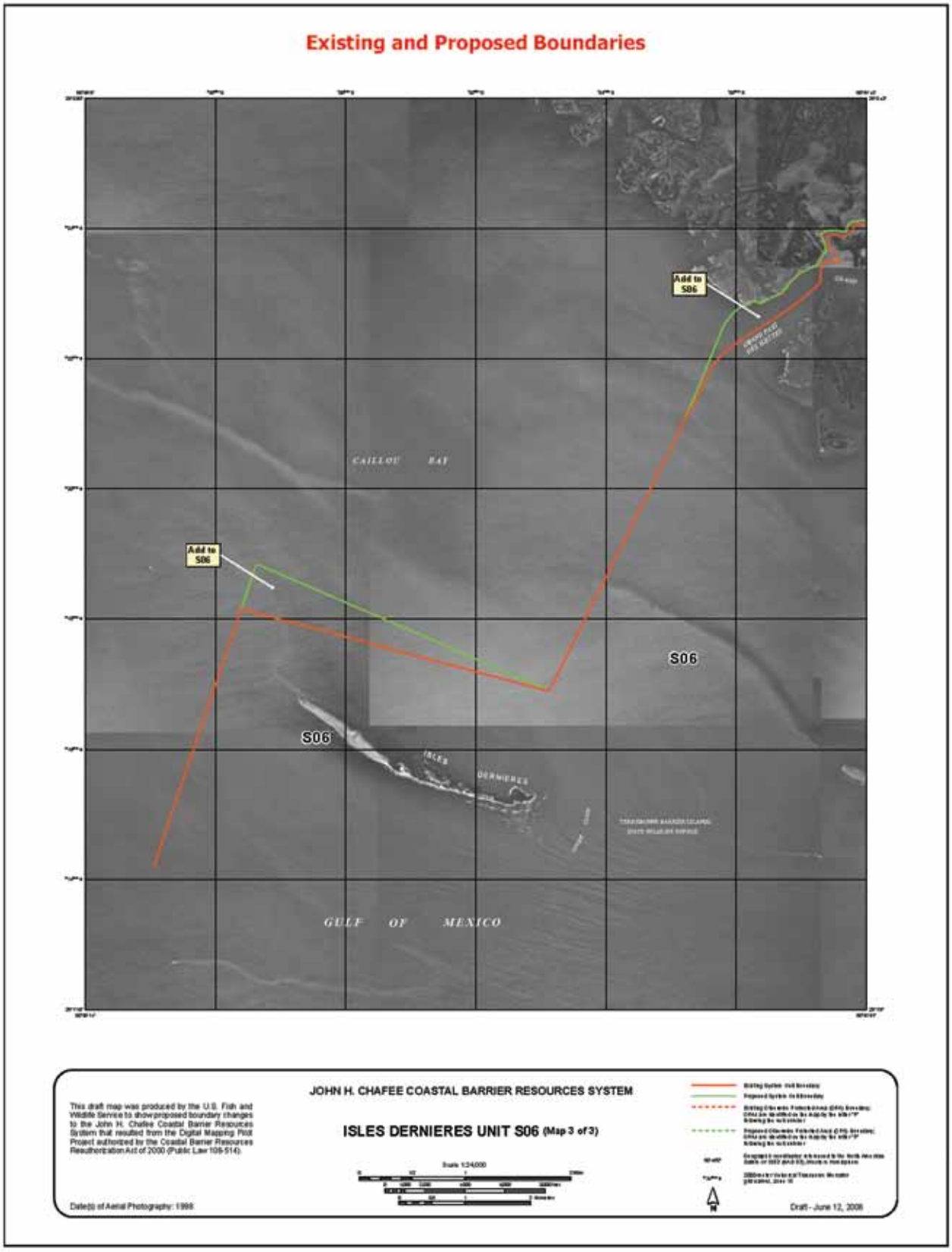
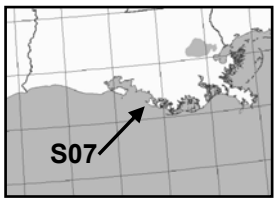


This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

John H. Chafee Coastal Barrier Resources System Unit S07, Point au Fer, Louisiana

Type of Unit: System unit
Location of Unit: South of Baton Rouge, in Terrebonne and St. Mary Parishes
Congressional District: 3
Establishment of Unit: Coastal Barrier Resources Act (P.L. 97-348) enacted on 10/18/1982
Historical Changes to Unit: 11/16/1990: P.L. 101-591 added associated aquatic habitat to Unit S07 and removed that portion of the unit that was part of the State-protected Atchafalaya Delta Wildlife Management Area.
Existing Boundary Description: The eastern boundary of Unit S07 generally follows the center of Pelican Pass, Taylors Bayou, Cross Bayou, and a small stream cutting through Tony Lake. From this point, the boundary cuts across Bay Junop and follows the center of Buckskin Bayou to Blue Hammock Bayou. The northern boundary follows the center of Blue Hammock Bayou to the west where it joins Fourleague Bay, and heads north through Fourleague Bay about one mile east of Point au Fer Island. Near the location where Fourleague Bay joins Atchafalaya Bay, there is a gap in the boundary. The Unit S07 boundary in Volume 18 of the Department of the Interior's 1988 Report to Congress: Coastal Barrier Resources System, Recommendations for Additions to or Deletions from the Coastal Barrier Resources System, continued northward through open water on a separate map, ended at the Terrebonne and St. Mary Parishes boundary, and then turned southward through open water. This separate map, however, was not adopted by Congress with the enactment of the Coastal Barrier Improvement Act of 1990, thereby leaving a gap in the boundary. The western boundary once followed Point au Fer Island shoreline, but because the island has eroded, the existing Unit S07 boundary now lies slightly offshore. The western boundary turns south into the Gulf of Mexico after passing the tip of Point au Fer Island.

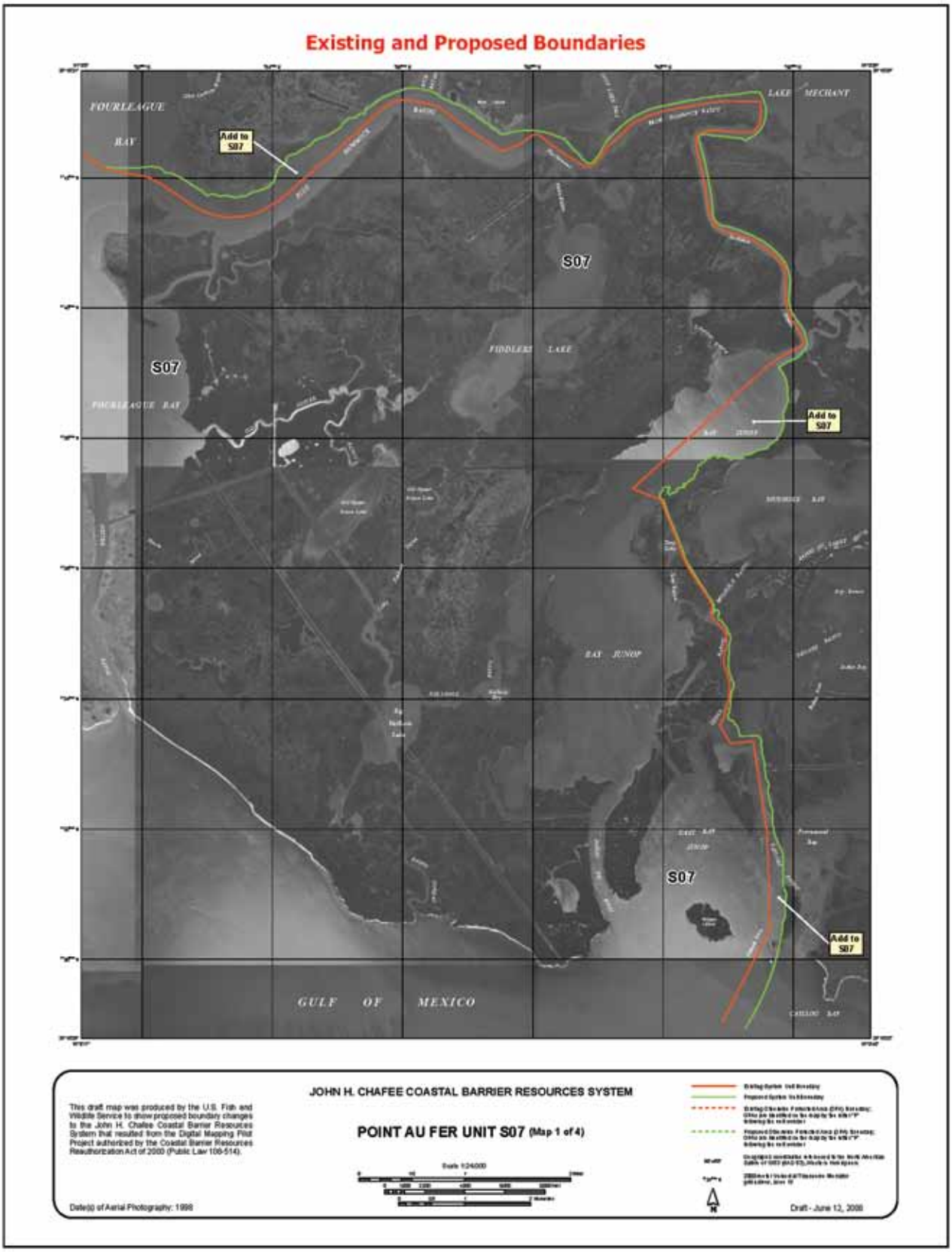


Proposed Changes to Boundary: The eastern and northeastern portions of the Unit S07 boundary are adjusted to include in the unit the entire channels of Pelican Pass, Taylors Bayou, Cross Bayou, the small stream cutting through Tony Lake, Bay Junop, Buckskin Bayou, and Blue Hammock Bayou. The northern boundary is adjusted to connect the gap in the boundary, described above. The implied boundary on the current map for this area is the edge of the map, and therefore, the proposed boundary follows this line. The western boundary is adjusted to follow the Point au Fer Island shoreline.

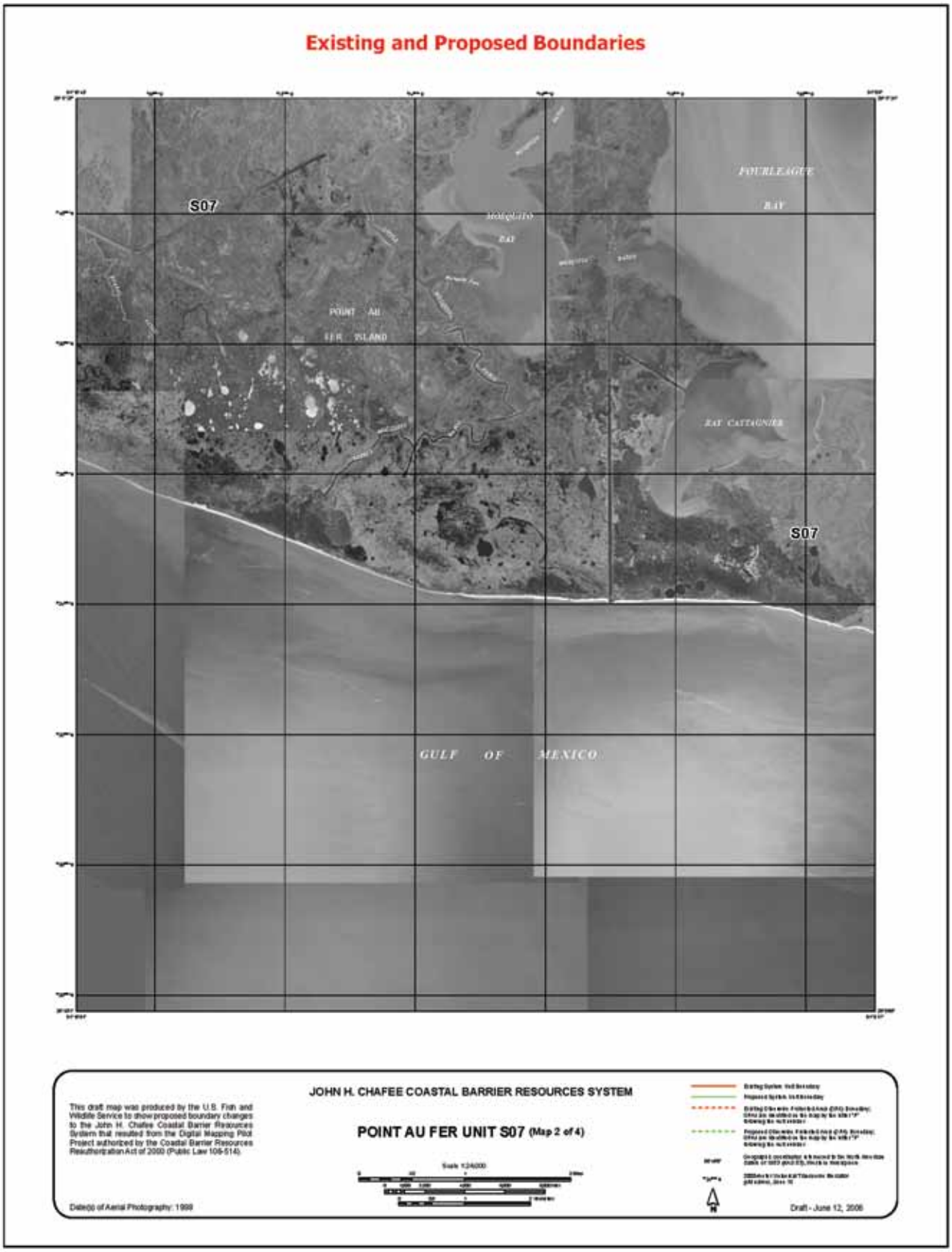
Acreage, Shoreline, and Structures:

	Total Acres	*Fastland Acres*[1]	*Associated Aquatic Habitat Acres*[2]	*Shoreline (Miles)*	*Structures*[3]
Existing Unit	78,027.4	0.0	78,027.4	24.2	
Added to the CBRS	1,282.2	0.0	1,282.2		N/A
Removed from the CBRS	331.7	0.0	331.7		N/A
Reclassified Area	0.0	0.0	0.0	0.0	
Proposed Unit	78,977.9	0.0	78,977.9	24.3	
Net Change	950.5	0.0	950.5	0.1	N/A

1 Land above mean high tide
2 Includes adjacent wetlands, marshes, estuaries, inlets, and nearshore waters
3 Structure count not conducted; no fastland added or removed



This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.



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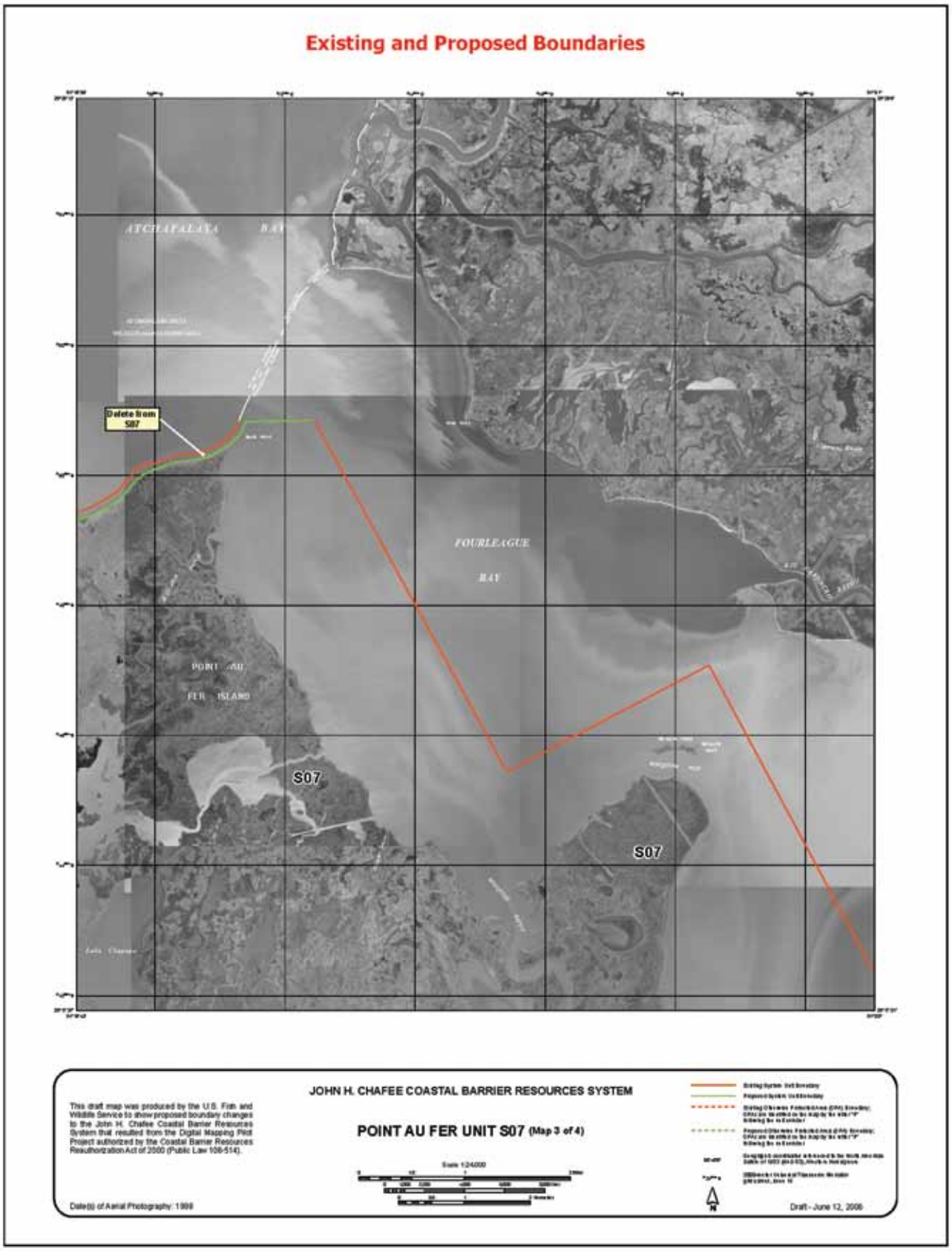

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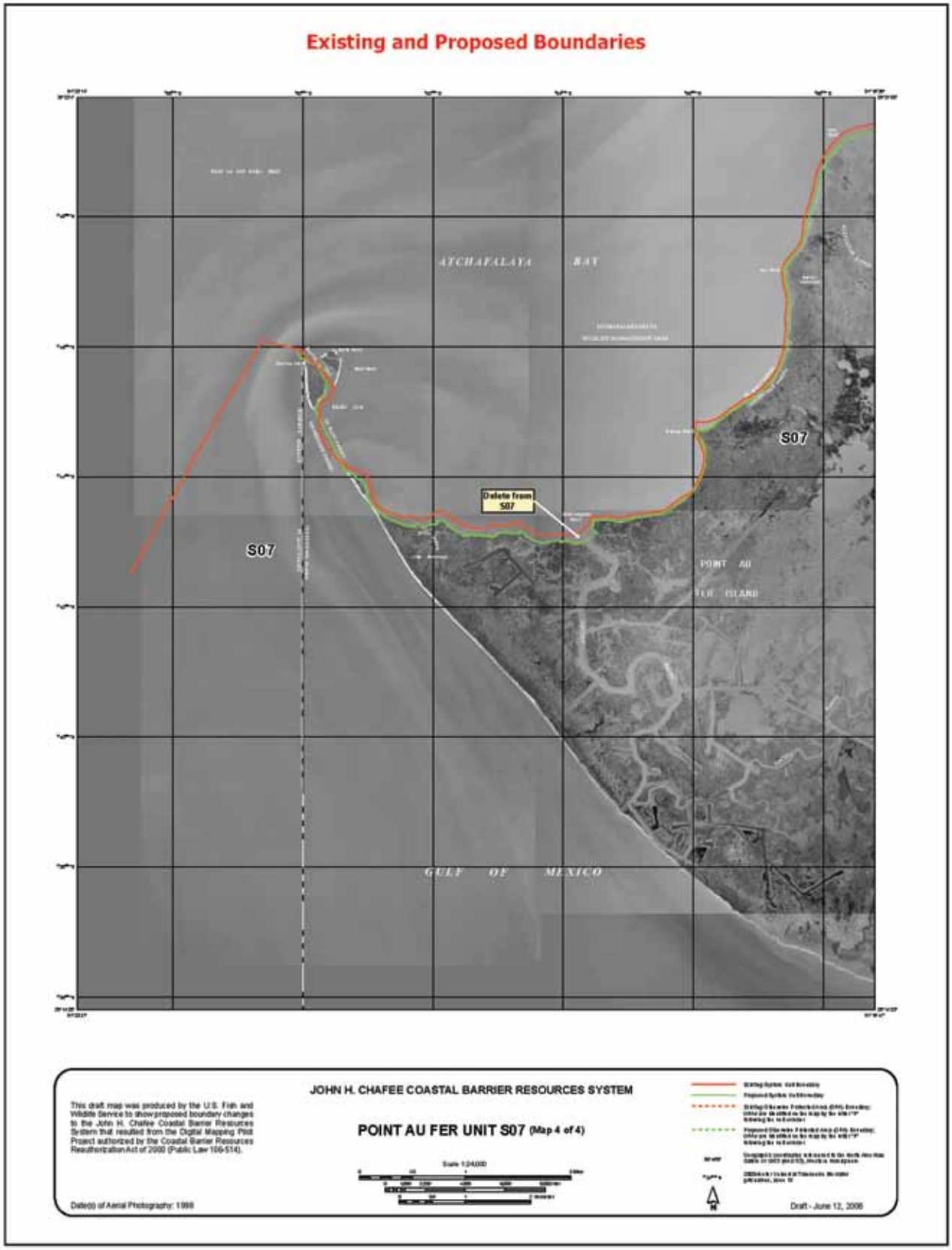

This draft map is available for download at the U.S. Fish and Wildlife Service website: http://www.fws.gov/habitatconservation/coastal_barrier.html.

APPENDIX E: PILOT PROJECT ACREAGE AND SHORELINE CHANGES

Unit	Total (acres)					Fastland (acres)					Associated Aquatic Habitat (acres)					Shoreline (miles)		
	Existing	*Proposed*	*Added to CBRS*	*Removed from CBRS*	*Change*	*Existing*	*Proposed*	*Added to CBRS*	*Removed from CBRS*	*Change*	*Existing*	*Proposed*	*Added to CBRS*	*Removed from CBRS*	*Change*	*Existing*	*Proposed*	*Change*
DE-07	0.0	5,380.2	197.1	0.0	5,380.2	0.0	100.0	0.0	0.0	100.0	0.0	5,280.2	197.1	0.0	5,280.2	0.0	0.5	0.5
DE-07P	7,360.3	2,826.2	703.4	54.4	(4,534.1)	894.5	1,174.8	400.4	20.1	280.3	6,465.8	1,651.4	303.0	34.3	(4,814.4)	6.8	6.3	(0.5)
H01	167.7	166.7	4.2	5.2	(1.0)	150.1	145.6	0.1	4.6	(4.5)	17.6	21.1	4.1	0.6	3.5	0.7	0.7	0.0
NC-01	7,174.4	7,188.7	21.7	7.4	14.3	432.9	444.6	18.9	7.2	11.7	6,741.5	6,744.1	2.8	0.2	2.6	0.4	0.4	0.0
NC-05P	297.2	945.6	650.3	1.9	648.4	173.0	185.4	13.7	1.3	12.4	124.2	760.2	636.6	0.6	636.0	0.0	0.0	0.0
NC-06	0.0	8,162.5	2,770.2	0.0	8,162.5	0.0	196.2	47.0	0.0	196.2	0.0	7,966.3	2,723.2	0.0	7,966.3	0.0	1.7	1.7
NC-06P	6,725.9	1,321.5	36.1	0.0	(5,404.4)	911.2	795.9	33.9	0.0	(115.3)	5,814.7	525.6	2.2	0.0	(5,289.1)	3.8	3.3	(0.5)
L05	3,045.6	6,441.6	3,299.2	0.0	3,396.0	729.2	873.7	144.5	0.0	144.5	2,316.4	5,567.9	3,154.7	0.0	3,251.5	10.3	10.4	0.1
L06	6,043.5	6,055.7	188.4	127.6	12.2	1,032.1	964.6	9.4	76.9	(67.5)	5,011.4	5,091.1	179.0	50.7	79.7	6.9	7.3	0.4
L07	5,989.8	7,277.8	1,323.0	35.0	1,288.0	103.1	185.0	81.9	0.0	81.9	5,886.7	7,092.8	1,241.1	35.0	1,206.1	5.5	5.8	0.3
L08	667.2	1,099.7	445.8	13.3	432.5	83.0	97.3	24.3	10.0	14.3	584.2	1,002.4	421.5	3.3	418.2	1.0	1.0	0.0
L09	6,587.7	6,750.6	213.4	50.5	162.9	526.3	490.7	0.0	35.6	(35.6)	6,061.4	6,259.9	213.4	14.9	198.5	9.9	10.0	0.1
M02	88.1	436.7	348.6	0.0	348.6	25.3	26.7	1.4	0.0	1.4	62.8	410.0	347.2	0.0	347.2	1.1	1.1	0.0
M03	187.2	223.9	47.6	10.9	36.7	49.1	42.2	2.5	9.4	(6.9)	138.1	181.7	45.1	1.5	43.6	0.6	0.6	0.0
FL-01	0.0	425.8	202.4	0.0	425.8	0.0	11.7	4.7	0.0	11.7	0.0	414.1	197.7	0.0	414.1	0.0	0.0	0.0
FL-01P	2,008.8	1,970.5	186.8	1.7	(38.3)	1,105.4	1,247.0	148.6	0.0	141.6	903.4	723.5	38.2	1.7	(179.9)	1.3	1.3	0.0
P04A	675.1	721.2	61.5	15.4	46.1	42.6	43.7	1.2	0.1	1.1	632.5	677.5	60.3	15.3	45.0	0.4	0.4	0.0
P05	1,955.2	1,825.0	253.4	13.0	(130.2)	617.6	402.7	0.1	3.7	(214.9)	1,337.6	1,422.3	253.3	9.3	84.7	2.6	1.6	(1.0)
P05P	601.5	972.5	1.9	1.5	371.0	438.7	650.5	1.9	1.4	211.8	162.8	322.0	0.0	0.1	159.2	1.5	2.6	1.1
P08	4,185.3	3,994.1	162.5	25.3	(191.2)	627.7	404.7	5.6	0.0	(223.0)	3,557.6	3,589.4	156.9	25.3	31.8	1.9	0.7	(1.2)
P08P	0.0	328.8	0.4	0.0	328.8	0.0	229.0	0.4	0.0	229.0	0.0	99.8	0.0	0.0	99.8	0.0	1.2	1.2
FL-13P	178.2	176.4	2.2	4.0	(1.8)	139.8	138.8	2.2	3.2	(1.0)	38.4	37.6	0.0	0.8	(0.8)	0.8	0.8	0.0
P09A	3,204.6	3,172.7	28.5	30.3	(31.9)	277.4	247.0	7.4	11.4	(30.4)	2,927.2	2,925.7	21.1	18.9	(1.5)	2.0	1.8	(0.2)
P09AP	0.0	89.9	59.8	0.0	89.9	0.0	77.6	51.2	0.0	77.6	0.0	12.3	8.6	0.0	12.3	0.0	0.7	0.7
P10A	5,569.8	8,914.4	2,163.5	23.9	3,344.6	751.5	784.2	9.7	10.3	32.7	4,818.3	8,130.2	2,153.8	13.6	3,311.9	3.4	3.6	0.2
FL-14P	2,578.0	1,570.6	215.3	17.7	(1,007.4)	231.6	205.1	15.7	8.9	(26.5)	2,346.4	1,365.5	199.6	8.8	(980.9)	0.7	0.7	0.0
P11	16,124.2	16,102.4	66.6	72.2	(21.8)	676.9	646.8	3.1	25.5	(30.1)	15,447.3	15,455.6	63.5	46.7	8.3	9.2	9.0	(0.2)
P11P	0.0	16.5	0.3	0.0	16.5	0.0	7.7	0.0	0.0	7.7	0.0	8.8	0.3	0.0	8.8	0.0	0.2	0.2
FL-15	218.4	208.6	6.8	16.6	(9.8)	84.2	84.0	1.7	1.9	(0.2)	134.2	124.6	5.1	14.7	(9.6)	1.0	1.0	0.0
FL-16P	55.0	69.6	14.9	0.3	14.6	27.8	33.8	6	0.0	6.0	27.2	35.8	8.9	0.3	8.6	0.4	0.4	0.0
FL-17P	106.7	123.9	19.1	1.9	17.2	91.5	106.7	17.1	1.9	15.2	15.2	17.2	2	0.0	2.0	0.5	0.6	0.1
FL-18P	853.7	851.7	2.0	4.0	(2.0)	295.0	292.5	0.8	3.3	(2.5)	558.7	559.2	1.2	0.7	0.5	1.6	1.6	0.0
FL-19	0.0	9.4	0.9	0.0	9.4	0.0	4.7	0.6	0.0	4.7	0.0	4.7	0.3	0.0	4.7	0.0	0.4	0.4

Unit	Total (acres)					Fastland (acres)					Associated Aquatic Habitat (acres)					Shoreline (miles)		
	Existing	*Proposed*	*Added to CBRS*	*Removed from CBRS*	*Change*	*Existing*	*Proposed*	*Added to CBRS*	*Removed from CBRS*	*Change*	*Existing*	*Proposed*	*Added to CBRS*	*Removed from CBRS*	*Change*	*Existing*	*Proposed*	*Change*
FL-19P	85.4	179.7	102.9	0.1	94.3	71.8	158.4	90.8	0.1	86.6	13.6	21.3	12.1	0.0	7.7	0.4	0.1	(0.3)
FL-20P	398.3	344.9	0.3	53.7	(53.4)	233.5	202.7	0.0	30.8	(30.8)	164.8	142.2	0.3	22.9	(22.6)	2.6	2.2	(0.4)
P14A	108.1	149.8	42.2	0.5	41.7	61.3	64.6	3.3	0.0	3.3	46.8	85.2	38.9	0.5	38.4	0.8	0.8	0.0
FL-39	1,196.6	1,291.3	101.5	6.8	94.7	57.9	58.2	1.7	1.4	0.3	1,138.7	1,233.1	99.8	5.4	94.4	1.4	1.4	0.0
FL-40	105.0	2,060.0	1,955.0	0.0	1,955.0	21.2	50.7	29.5	0.0	29.5	83.8	2,009.3	1,925.5	0.0	1,925.5	1.0	1.1	0.1
FL-43	1,187.0	1,187.0	0.0	0.0	0.0	14.5	14.5	0.0	0.0	0.0	1,172.5	1,172.5	0.0	0.0	0.0	0.2	0.2	0.0
FL-44	384.1	525.7	144.1	2.5	141.6	58.6	98.1	40.1	0.6	39.5	325.5	427.6	104.0	1.9	102.1	1.0	1.1	0.1
FL-45	1,443.3	1,977.6	543.3	9.0	534.3	388.8	529.6	140.9	0.1	140.8	1,054.5	1,448.0	402.4	8.9	393.5	1.0	1.8	0.8
FL-46	1,178.8	1,291.2	132.4	20.0	112.4	116.5	104.3	0.0	12.2	(12.2)	1,062.3	1,186.9	132.4	7.8	124.6	2.0	2.0	0.0
FL-64P	555.3	572.6	65.1	47.8	17.3	27.9	5.8	2.0	24.1	(22.1)	527.4	566.8	63.1	23.7	39.4	2.2	1.9	(0.3)
P17A	29.7	61.5	32.1	0.3	31.8	15.3	16.2	0.9	0.0	0.9	14.4	45.3	31.2	0.3	30.9	0.2	0.4	0.2
FL-67	3,070.7	3,375.6	329.2	24.3	304.9	122.5	137.8	16.6	1.3	15.3	2,948.2	3,237.8	312.6	23.0	289.6	4.6	4.6	0.0
FL-67P	0.0	170.5	170.5	0.0	170.5	0.0	19.5	19.5	0.0	19.5	0.0	151.0	151.0	0.0	151.0	0.0	0.0	0.0
P21	2,078.6	4,000.0	1,754.2	12.1	1,921.4	413.4	412.5	3.1	2.2	(0.9)	1,665.2	3,587.5	1,751.1	9.9	1,922.3	3.7	3.6	(0.1)
P21P	434.6	366.5	111.2	0.0	(68.1)	129.9	205.3	73.6	0.0	75.4	304.7	161.2	37.6	0.0	(143.5)	1.2	1.2	0.0
P22	618.7	645.4	31.3	4.6	26.7	89.7	90.5	0.8	0.0	0.8	529.0	554.9	30.5	4.6	25.9	0.8	0.8	0.0
FL-72P	344.1	345.5	3.4	2.0	1.4	135.6	136.7	2.8	1.7	1.1	208.5	208.8	0.6	0.3	0.3	0.3	0.3	0.0
FL-73P	162.1	38.0	13.7	0.0	(124.1)	21.6	34.5	12.9	0.0	12.9	140.5	3.5	0.8	0.0	(137.0)	0.6	0.7	0.1
FL-78	3,067.9	3,480.1	279.7	5.3	412.2	111.8	108.6	1.3	4.5	(3.2)	2,956.1	3,371.5	278.4	0.8	415.4	4.1	4.1	0.0
FL-78P	0.0	12.2	12.2	0.0	12.2	0.0	6.2	6.2	0.0	6.2	0.0	6.0	6.0	0.0	6.0	0.0	0.0	0.0
FL-82	1,719.7	1,725.7	32.1	26.1	6.0	89.3	73.2	0.0	16.1	(16.1)	1,630.4	1,652.5	32.1	10.0	22.1	5.1	5.1	0.0
FL-80P	655.2	737.6	82.4	0.0	82.4	3.2	3.2	0.0	0.0	0.0	652.0	734.4	82.4	0.0	82.4	1.6	1.8	0.2
FL-81	301.6	296.9	0.0	0.0	(4.7)	39.2	38.2	0.0	0.0	(1.0)	262.4	258.7	0.0	0.0	(3.7)	0.9	0.9	0.0
FL-81P	289.7	830.8	536.4	0.0	541.1	208.2	218.9	9.7	0.0	10.7	81.5	611.9	526.7	0.0	530.4	1.7	1.9	0.2
FL-83	3,292.5	3,330.8	54.5	16.2	38.3	88.0	93.3	12.0	6.7	5.3	3,204.5	3,237.5	42.5	9.5	33.0	5.6	5.6	0.0
FL-85P	528.2	539.3	11.1	0.0	11.1	97.9	100.5	2.6	0.0	2.6	430.3	438.8	8.5	0.0	8.5	0.8	0.8	0.0
P26	683.8	1,185.1	501.3	0.0	501.3	0.0	0.0	0.0	0.0	0.0	683.8	1,185.1	501.3	0.0	501.3	3.1	3.1	0.0
FL-89	639.8	1,288.9	671.6	22.5	649.1	34.2	34.2	0.3	0.3	0.0	605.6	1,254.7	671.3	22.2	649.1	1.7	2.6	0.9
FL-93	0.0	130.7	4.0	0.0	130.7	0.0	37.6	1.9	0.0	37.6	0.0	93.1	2.1	0.0	93.1	0.0	0.2	0.2
FL-93P	241.9	258.9	157.1	13.4	17.0	82.9	130.0	94.8	12.0	47.1	159.0	128.9	62.3	1.4	(30.1)	0.6	0.3	(0.3)
FL-94	265.7	251.7	3.2	17.2	(14.0)	89.2	78.6	1.4	12.0	(10.6)	176.5	173.1	1.8	5.2	(3.4)	1.8	1.7	(0.1)
LA-01	5,029.6	5,029.6	0.0	0.0	0.0	12.8	12.8	0.0	0.0	0.0	5,016.8	5,016.8	0.0	0.0	0.0	6.1	6.1	0.0
LA-02	6,013.6	6,013.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6,013.6	6,013.6	0.0	0.0	0.0	2.4	2.4	0.0

Unit	*Total (acres)*					*Fastland (acres)*					*Associated Aquatic Habitat (acres)*					*Shoreline (miles)*		
	Existing	*Proposed*	*Added to CBRS*	*Removed from CBRS*	*Change*	*Existing*	*Proposed*	*Added to CBRS*	*Removed from CBRS*	*Change*	*Existing*	*Proposed*	*Added to CBRS*	*Removed from CBRS*	*Change*	*Existing*	*Proposed*	*Change*
S04	10,425.5	10,596.0	170.6	0.1	170.5	32.8	32.8	0.0	0.0	0.0	10,392.7	10,563.2	170.6	0.1	170.5	3.5	3.6	0.1
S05	17,723.3	18,455.8	732.5	0.0	732.5	355.7	355.7	0.0	0.0	0.0	17,367.6	18,100.1	732.5	0.0	732.5	17.8	18.4	0.6
S06	35,658.7	36,888.2	1,229.6	0.1	1,229.5	29.9	29.9	0.0	0.0	0.0	35,628.8	36,858.3	1,229.6	0.1	1,229.5	21.0	21.0	0.0
S07	78,027.4	78,977.9	1,282.2	331.7	950.5	0.0	0.0	0.0	0.0	0.0	78,027.4	78,977.9	1,282.2	331.7	950.5	24.2	24.3	0.1
System Unit Subtotal	236,133.5	268,773.8	21,831.9	945.9	32,640.3	8,451.6	8,668.0	617.9	254.0	216.4	227,681.9	260,105.8	21,214.0	691.9	32,423.9	170.9	174.9	4.0
OPA Subtotal	24,460.1	15,660.2	3,158.8	204.4	(8,799.9)	5,321.0	6,366.5	1,006.8	108.8	1,045.5	19,139.1	9,293.7	2,152.0	95.6	(9,845.4)	29.4	30.9	1.5
CBRS Total	260,593.6	284,434.0	24,990.7	1,150.3	23,840.4	13,772..6	15,034.5	1,624.7	362.8	1,261.9	246,821.0	269,399.5	23,366.0	787.5	22,578.5	200.3	205.8	5.5

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Photo by U.S. Geological Survey
This photograph of Pine Beach, Alabama, was taken on September 17, 2004, following Hurricane Ivan. The hurricane breached the coastal barrier at a location with adjacent development. The undeveloped coastal habitat in the foreground is included within John H. Chafee Coastal Barrier Resources System Unit Q01P.