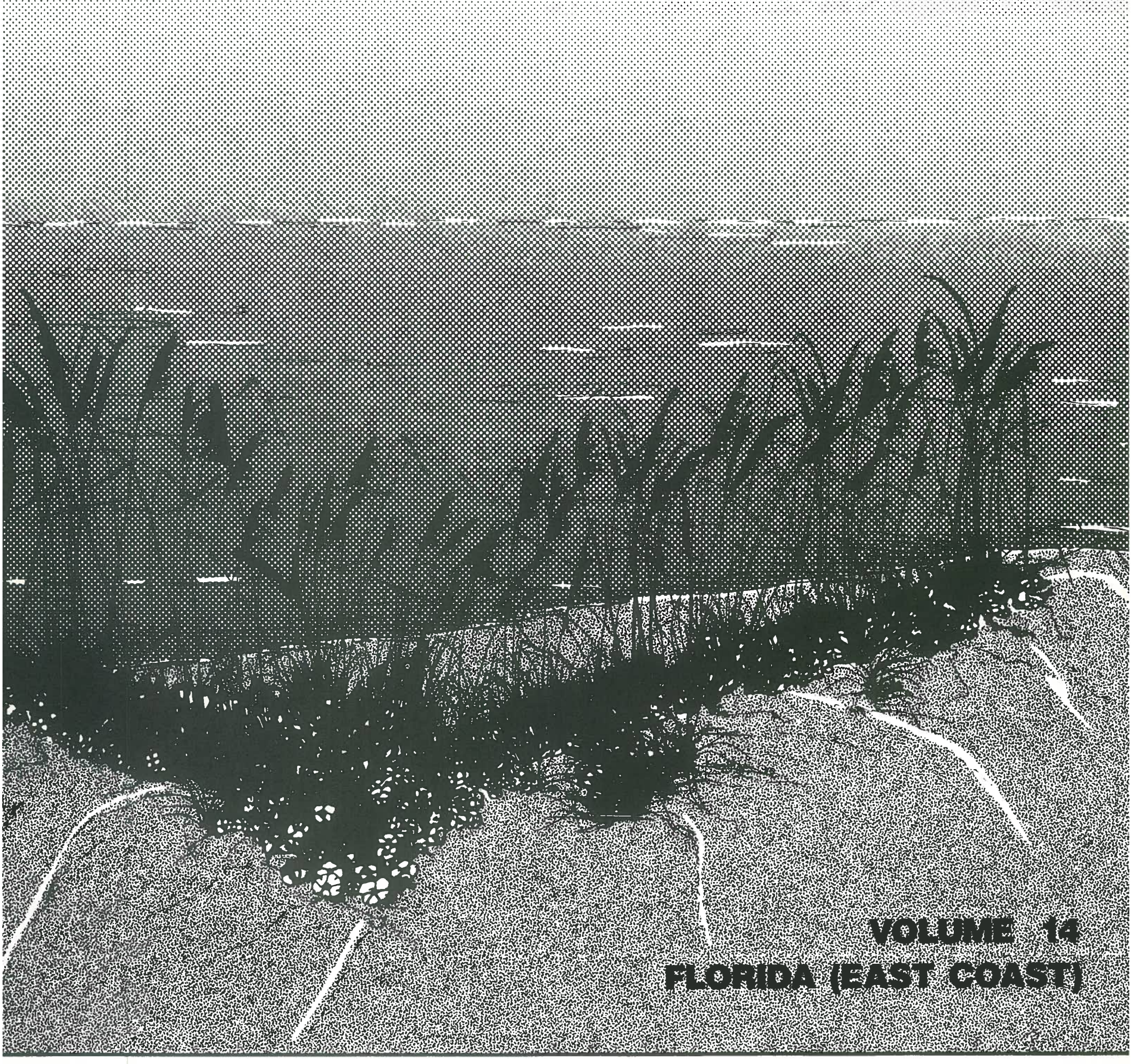
REPORT TO CONGRESS: COASTAL BARRIER RESOURCES SYSTEM

Proposed Recommendations for Additions to or Deletions from the Coastal Barrier Resources System



VOLUME 14
FLORIDA (EAST COAST)

U.S. Department of the Interior

February 1987

REPORT TO CONGRESS: COASTAL BARRIER RESOURCES SYSTEM

VOLUME 14

Proposed Recommendations for Additions to or Deletions from the Coastal Barrier Resources System

FLORIDA (EAST COAST)

Mapped, edited, and published by the Coastal Barriers Study Group

United States Department of the Interior
William P. Horn, Assistant Secretary for Fish and Wildlife and Parks

February 1987

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FLORIDA (EAST COAST)

INTRODUCTION

The Coastal Barrier Resources Act (CBRA) of 1982 (Public Law 97-348) established the Coastal Barrier Resources System (CBRS), a system of undeveloped coastal barriers along the Atlantic and Gulf of Mexico coasts. This atlas of coastal barriers in east Florida has been prepared in accordance with Section 10 of CBRA (16 U.S.C. 3509), which states:

> Sec. 10. Reports to Congress.
>
> (a) In General.--Before the close of the 3-year period beginning on the date of the enactment of this Act, the Secretary shall prepare and submit to the Committees a report regarding the System.
> (b) Consultation in Preparing Report.--The Secretary shall prepare the report required under subsection (a) in consultation with the Governors of the States in which System units are located and with the coastal zone management agencies of the States in which System units are located and after providing opportunity for, and considering, public comment.
> (c) Report Content.--The report required under subsection (a) shall contain--
>
> (1) recommendations for the conservation of fish, wildlife, and other natural resources of the System based on an evaluation and comparison of all management alternatives, and combinations thereof, such as State and local actions (including management plans approved under the Coastal Zone Management Act of 1972 (16 U.S.C. 1451 et seq.)), Federal actions (including acquisition for administration as part of the National Wildlife Refuge System), and initiatives by private organizations and individuals;
>
> (2) recommendations for additions to, or deletions from, the Coastal Barrier Resources System, and for modifications to the boundaries of System units;
>
> (3) a summary of the comments received from the Governors of the States, State coastal zone management agencies, other government officials, and the public regarding the System; and
>
> (4) an analysis of the effects, if any, that general revenue sharing grants made under section 102 of the State and Local Fiscal Assistance Amendments of 1972 (31 U.S.C. 1221) have had on undeveloped coastal barriers.

This atlas of the east coast of Florida includes delineations of the CBRS units designated by Congress in 1982 and delineations of proposed recommendations for additions and modifications to the CBRS that will be provided to Congress by the Department of the Interior following public review and comment.

Under the direction of the Assistant Secretary for Fish and Wildlife and Parks, this report has been prepared by the Coastal Barriers Study Group, a task force of professionals representing the National Park Service, U.S. Fish and Wildlife Service, U.S. Geological Survey, and other Departmental offices.

BACKGROUND

Florida is one of the rapidly growing States of the sunbelt. Its population currently exceeds 10 million and its rate of population growth ranks among the highest in the Nation. Most forecasters predict that Florida will rank among the top four States in both population and economic base by the turn of the century.

Although marked growth in Florida's population took place during the first few decades of the 20th century, it was not until the post-World War II era that major growth began. Growth may have peaked with an overall increase of 43 percent between 1970 and 1980. During this period coastal counties accounted for 72 percent of the increase (State of Florida 1981). This growth has been accompanied by a significant diversification in the State's economic base.

Until the 1960's, the bulk of Florida's economic base was in agriculture and tourism. Agriculture is primarily citrus, cattle and vegetables. Tourism was concentrated on the coasts, with the east coast dominating, but the economy has spread and diversified with the greatest increase in the central Florida area near Orlando.

Great industrial diversification began in the early 1960's. Much of the impetus for this was the development of the National

Aeronautics and Space Administration's Kennedy Space Center and related high-tech activities near Cape Canaveral. This growth has been accompanied by similar expansion across the central Florida strip from the area of the Kennedy Space Center through the Orlando area to Tampa Bay and the numerous surrounding cities.

Florida's four major metropolitan regions--Miami-Fort Lauderdale, Tampa Bay, Orlando/Orange County, and Jacksonville--are also growing commerce centers. The Miami area, long known as a major tourist attraction, has become a center for international trade as many Latin American corporations relocate or expand into the central Florida area. The Tampa Bay area includes nearly 2 million people. Tampa, St. Petersburg, Clearwater, and Sarasota are the largest of the many Tampa Bay area municipalities. Although this was originally a retirement area, it too has greatly diversified during the past two decades. Tampa has become a high-tech electronics and financial center. Jacksonville is more of a seasonal tourist area than the other metropolitan regions and has long had a diversified economy. It has a large port and numerous military bases and is the insurance center of Florida.

In addition to the four major metropolitan areas, three of which are in the coastal zone, there are numerous midsize cities along the coast. These are located along the east coast (including the Florida Keys), on the west-central coast, and on the coast of the Florida panhandle. The only relatively unpopulated coastal areas of the State are between Cape Sable and Cape Romano on the southwestern peninsular coast and between Pasco County and the Apalachicola Delta in the Big Bend area. These are also the only coasts of Florida where beaches and barriers are generally absent.

Florida's most valuable resource is its beaches, and its most valuable real estate is found on coastal barriers. Tourism is certainly the State's largest coastal industry: nearly 40 million out-of-state guests visit the beaches each year. The coastal tourism industry includes such activities as sailing, power boating, fishing, boat-building, and numerous amusement and other tourist attractions.

Florida also has petroleum and minerals mining and related industries, but their impact on the State's economy falls far below that of the beaches and climate. The State ranks among the world's leaders in phosphate production, although recent years have seen the rapid expansion of some foreign producers. Limestone and silica sand are also significant mineral products in the State. Although Florida is not presently among the U.S. leaders in petroleum production, there is optimism about expansion in the future, especially in the offshore Gulf of Mexico. Presently, only two major fields are producing in the State: the Jay Field near the Georgia border in the panhandle and the Sunniland Field in the Big Cypress Swamp area of south Florida.

Florida also has industries based on its extensive renewable natural resources, such as the timber and fishing industries. Throughout the panhandle and northern peninsula, there are softwood forests that are used primarily for paper pulp and particle board. The entire coastal area supports an extensive fin and shellfishing industry.

Much of the State's industry is located on the coast, largely because the majority (about 75 percent) of the population lives in the coastal counties. Much of the new industry attracted to Florida has moved into coastal counties because employees prefer living on or near the coast. Some industries rely on the coast to support their activities. Phosphate products, for example, are almost all shipped out through the deepwater port at Tampa.

COASTAL RESOURCE MANAGEMENT

Florida Coastal Resource Management

In 1967, the Florida Legislature turned its attention to the general topic of resource management. In 1970, the first of many legislative bills aimed specifically at coastal management created the Coastal Coordinating Council. For a 5-year period, this body, comprising representatives from a wide range of local governments, developers, and interest groups, worked towards developing a coordinated coastal resource management program (State of Florida 1981). In 1975, the legislature abolished the council and transferred its duties to the Department of Natural Resources. In 1977, the legislature transferred the program to the Department of Environmental Regulation.

Florida Coastal Management Act. Passed in 1978, this Act did not include new regulations but simply called for better coordination and enforcement of existing ones. The Governor created the Interagency Management Committee in October 1979. This committee consists of the managers of many State agencies and is responsible for coordinating efforts in the State's coastal management programs. It took 3 years for the State to develop a coastal management program consistent with both the 1978 Florida Coastal Management Act and the Federal Coastal Zone Management Act of 1972 (Bernd-Cohen 1983). After extensive public hearings and interaction with the Federal Office of Coastal Zone Management, the Final Environmental Impact Statement was issued in August 1981. The State of Florida continues to emphasize the refinement and more effective coordination of existing regulations related to the coastal zone rather than the establishment of new regulations (State of Florida 1981).

Florida Coastal Management Program (CMP). The program is based on 25 statutes that are administered by 16 State agencies. However, the bulk of the program rests in three agencies: the Department of Environmental Regulation (DER), the Department of Natural Resources (DNR), and the Department of Community Affairs (DCA). The DCA contains the Office of Federal Coastal Programs.

The Florida CMP solicits input from the State's 5 water management districts and 11 regional planning councils. Eligibility for

funds through the CMP is limited to 35 coastal counties and 162 coastal municipalities (Bernd-Cohen 1983).

Florida is one of several coastal States to attempt to regulate new construction on and immediately adjacent to beaches and dunes. The Coastal Construction Setback Line (SBL) was formulated and adopted in 1974 (Purpura and Sensabaugh 1974). This line established a boundary in front of which no construction or excavation is allowed without a permit from the State. The SBL was established on a county basis in only those counties where beaches are well developed and widespread. Numerous exceptions to the SBL were granted and, in general, the Florida SBL was considered by some to be weak (Kennedy 1983).

Recently, a modification of the SBL, called the Coastal Construction Control Line (CCCL), has been developed by using new field data and the experience of the SBL. As of this time, this line has not been drawn for all coastal counties. In any instance of construction seaward of the SBL or the new CCCL, permits must be obtained from both the DER and the DNR.

Executive Order 81-105. On September 4, 1981, the Governor signed Executive Order 81-105 which directed executive agencies to (1) give high priority to acquisition of coastal barrier properties, (2) limit development subsidies in hazardous coastal barrier areas, and (3) cooperate with local governments in managing growth in these coastal barrier areas.

Implementation of the order will be based on the set of maps prepared by the DCA. Using these maps as guidelines, each agency will modify its program funding to the degree legally possible for compliance with the intent of the executive order. For purposes of implementation, all coastal barriers will be considered in two categories: (1) those which are traditionally called barrier islands, spits, or peninsulas, and (2) those which are exposed mainland beaches, marshes, or mangrove swamps with no other barriers seaward of them. This second group is affected landward only as far as the velocity zone on National Flood Insurance maps or the CCCL, whichever is further inland.

The degree of development includes three subcategories. Undeveloped barriers are those islands, spits, and peninsulas that are limited to watercraft or aircraft access, have sparse settlement, and have no publicly subsidized infrastructure. Also, all CBRS units are treated as undeveloped for purposes of this order. Mainland coastal barrier areas are considered to be undeveloped if they are not within corporate limits or are in a delimited urban area. Developed barrier areas are islands, spits, and peninsulas with at least 70 percent of their surface area developed as of the DCA inventory of 1983. Also included are appropriate mainland areas within corporate limits. All coastal barrier areas not classified in either of these groups are considered partially developed. State subsidies will be restricted to the greatest extent possible under existing authority for all undeveloped barriers. There will also be restrictions on subsidies for partially developed barriers. Exceptions may be granted if proper management is indicated and safe accommodation can be made; the head of the department that administers the funding will have the power to grant these exceptions. The order will apply to developed barriers only in postdisaster situations.

A draft rule for implementation of this executive order has been formulated by the Department of Community Affairs under authority of Chapter 252.35 of the Florida Statutes, which delegates responsibility for emergency preparedness functions. The rule is designed to provide State agencies with a common, readily interpretable, and functional basis for reviewing and making policy decisions regarding coastal barriers. This draft rule also addresses the delineation of maps and interpretations of the level of development (developed, partially developed, or undeveloped).

Local Government Comprehensive Planning and Land Development Regulation Act (85-55, Laws of Florida). This 1985 Act contains a new package of coastal protection statutes. The Act, which will be implemented over the next 3 years, establishes new procedures for determining the Coastal Construction Control Line. It fixes a new 30-year erosion line inside the CCCL, seaward of which, with few exceptions, no new structures will be allowed. The Act also established a new "Coastal Building Zone" for the entire coast. In this zone building requirements for major and minor structures must be met.

This Act requires that local comprehensive plans contain more stringent coastal elements. All plans must contain 11 mandatory components that include environmental, safety, and infrastructure considerations. The plans will be implemented by the adoption of appropriate local land development regulations. The final major new provision in the Act is the prohibition against using State funds to construct bridges or causeways to barrier islands not already accessible by bridge or causeway on October 1, 1985.

Taxes. Presently there are no State taxation policies that support or encourage development in Florida. There are some State taxation incentives that encourage nondevelopment of barrier properties. The best example is the conservation easement provision (704.06 F.S./193.50 F.S.), which allows a property owner to surrender development rights for a 10-year period. It is renewable at the option of the property owner. During this time no property taxes are levied on the land and it is categorized as a nature preserve. Because of the potential loss to the landowner of large amounts of revenue, this is not a widely used program.

Permitting. There are numerous State permitting regulations which apply to CBRS units. The permitting regulations are administered by several agencies, including the Department of Natural Resources (Division of Beaches and Shores), the Department of Environmental Regulation, the Department of Community Affairs, and the Department of Health and Rehabilitation Services. Unfortunately, when more than one agency is involved with the same project, disagreements may occur.

Probably the most common permitting situation includes the Coastal Construction Setback Line (SBL) (Purpura and Sensabaugh 1974), which is currently evolving into the CCCL. This is administered by the Division of Beaches and Shores in DNR.

Any Development of Regional Impact must be reviewed by regional planning councils and the Department of Community Affairs. The DER has permitting authority over any discharge of waste into surface or ground water. Both the DER and the individual water management districts have permitting authority for withdrawal, storage, diversion, and consumption of water. Regulation of the taking of living resources from waters within CBRS units falls under the jurisdiction of the DNR, Marine Fisheries Commission.

The DER also has jurisdiction over all permitting for dredge and fill activities in submerged lands and wetlands. In general, the DER's jurisdiction over dredge and fill activities is coincident with that of the U.S. Army Corps of Engineers, although in some cases the DER is more stringent (State of Florida 1981). In virtually all cases, the DER requires that a well-documented environmental impact study accompany any application for a dredge and fill permit. Marinas and boat docks are also permitted through the DER.

Beach nourishment and erosion-control projects can be undertaken through DNR in conjunction with local governments and the Federal Government (S.S. 161.141 through 161. 45 F.S.). There are several ways in which such projects can be implemented. However, Florida's support of the CBRS and Executive Order 81-105 tend to discourage such activities in CBRS units.

Financial assistance. One of the most comprehensive but also most expensive conservation management tools for any critical habitat is public acquisition. The State of Florida uses bonds, real estate taxes, and legislated appropriations to fund such acquisitions. The State of Florida passed the Outdoor Recreation and Conservation Act in 1963. This Act established a Land Acquisition Trust Fund administered by the Division of Recreation and Parks (DNR). This Act also provided for loans and grants to local governments for acquisition of public beach tracts (F.S. Chapter 375) (Bernd-Cohen 1983). The State may also acquire property for parks through a State Park Trust (F.S. Chapter 592). Honeymoon Island in Pinellas County was recently purchased under this program and is now developed as a major coastal park on a property where initial development had taken place.

The State offers financial assistance to local governments for the development and implementation of coastal conservation programs. Included are the Erosion Control Assistance Program (DNR), the Coastal Management Program (DER), the Recreation Development Assistance Program (DNR), and the Save Our Coast Program (through bonds). In all of these, State funds are made available to local governments if certain stipulations are met. For example, assistance is being provided for beach nourishment at Venice and Manasota Key. Funds are also available to assist local governmental units in developing beach management plans.

In some instances, the State has provided seed money to assist communities in getting large projects funded. Some of these pertain directly to beach or barrier properties. For example, a planning grant to the City of Naples for $31,000 resulted in successful local funding for eight public parking and access areas. In Martin County, a $34,000 grant led to a successful $5 million bond issue to purchase beach access properties. Grants have also been provided to Sarasota and Collier Counties to help implement their local coastal zone management plans.

Local Actions

Taxes. There appear to be no special taxation policies at local levels which benefit or promote the development of barriers relative to any other locations.

Permitting and zoning. Numerous local ordinances encourage the conservation of barrier island and related coastal zone properties. Tree ordinances are widespread, ranging from protection of mangroves to prohibition of cutting anything but punk trees or Brazilian pepper trees without a special permit.

Another common type of ordinance is the flood damage prevention ordinance (FDPO). These ordinances prohibit alteration of any physiographic or vegetative features that would result in an increased potential flood hazard. They only apply to communities participating in the National Flood Insurance Program, but the construction requirements of the local FDPO continue to apply in CBRS units even though Federal flood insurance is no longer available.

Some counties have established construction requirements that are stricter than those of the State. For example, Martin County has a variety of special requirements that pertain to Hutchinson Island. Included are mean high water line (MHWL) setbacks from the estuary shore, additional setbacks from the CCCL, and minimum roadway and building elevations. Indian River county has modified an ordinance as a result of the designation of CBRS units. That ordinance concerns stormwater management and flood protection (Ord. 82-28).

Financial assistance. As previously mentioned, financial assistance to the local government is available only for conservation of barriers, not for their development. The most direct method for local governments to protect barriers is by purchasing them. This is being done by Indian River County ($5,000,000) and Martin County ($5,000,000) among others.

Private Sector Initiatives

Numerous private organizations at all levels are actively involved in conservation related to coastal barriers. Most visible among these are the Nature Conservancy and the Trust for Public Lands, the former has by far the greatest coastal presence. The Conservancy has purchased numerous tracts either to keep or to resell to the State. The Trust for Public Lands acts more as an

intermediary rather than as a purchaser. Other national conservation organizations such as the National Wildlife Federation, the Audubon Society, and the Sierra Club have also supported coastal conservation and serve as forceful lobbyists at both the Federal and State levels.

A large number of local conservation groups also operate in the State, and many of these are quite effective. In some cases, these groups have actually purchased tracts of coastal land. For example, the Moonshine Island Trust, an ad hoc group in Pinellas County, purchased an island and deeded it to the State with the restriction that it remain as a natural preserve. Such a purchase provides for maintenance of the tract in its present state and also gives the trust members a tax advantage because of their purchase. The Lemon Bay Conservancy in Sarasota County (a local branch of The Nature Conservancy) provided seed money to develop Blind Pass Park on Manasota Key (CBRS unit P21A). The Sarasota Sea Turtle Association is monitoring turtle nesting on the same parcel. The Pelican Island Audubon Society in Indian River County developed a nature center educational facility at Wabasso Island. The Florida Oceanographic Society, Inc., a private group in Martin County, provided the coastal zone management grant project for Hutchinson Island from January to September 1982.

Some local groups act as "watchdogs" over development activities on barrier islands. Examples are the Vero Beach Civic Association, which monitors development projects on the barrier, and the Casey Key Protective Association, which discourages construction or hardening of the shoreline seaward of the CCCL.

EXISTING CBRS UNITS

The east or Atlantic Ocean coast of Florida contains 12 CBRS units from Talbot Island (P02) on the north to North Beach (P14A) on the south. This is a high energy coast with frequent storms, including hurricanes. Tidal range decreases from north (about 6 feet) to south (less than 3 feet). This coast is extensively developed, and erosion is both widespread and severe. Numerous structures, such as sea walls, groins, and jetties, are in evidence throughout much of the area.

The beaches here are typically narrow and steep, reflecting erosional conditions. Dunes may reach over 20 feet above sea level but typically are restricted to one row of foredunes except in the northernmost areas. Wetlands behind the barriers also are narrow, and open water areas are narrow or absent.

A brief description of each existing CBRS unit along Florida's east coast is provided below. Each unit is identified by its number, name, and the county in which it is located.

P02-Talbot Islands Complex (Duval). This is the northernmost unit on the east coast of the State. It consists of two parcels: a northern protected barrier (Talbot Island) flanked on three sides by saltwater marsh and on the fourth side by open water (Nassau Sound); and a southern sand spit between the mouths of two rivers with saltwater marsh to the landward side. A highway and a jetty are the only significant human-made features, and neither appears to have much impact on the unit. The surrounding areas are essentially all natural and include Little Talbot Island State Park to the east, Nassau Sound to the north, and saltwater marsh to the south and west. The south parcel faces the Atlantic Ocean and is surrounded by Fort George River to the north, St. Johns River to the south, and salt marsh to the west.

P04A-Usinas Beach (St. Johns). This unit is on a barrier island that contains a well-developed oceanfront beach and an extensive saltwater marsh on the landward side; the latter constitutes about two-thirds of the unit. The salt marsh is pristine. Highway A1A extends the length of the unit and a recent residential development occupies the high area near the center of the unit. Unit P04A faces the Atlantic Ocean to the east and the Tolomato River to the west. The barrier island continues to the north and south beyond the designated CBRS unit.

P05-Conch Island (St. Johns). This unit is a fairly recently formed barrier that is attached to the south to Anastasia Island. It has an extensive beach and a narrow fringe of salt marsh on the landward side. There is heavy recreational use of the beach. Several years ago, the island experienced significant human impact when the dredging of St. Augustine Inlet (the unit's northern border) resulted in the deposition of large spoil piles on the unit's northwest portion.

P05A-Matanzas River (St. Johns). This unit consists of about 2 miles of barrier beginning 0.5 mile south of Matanzas Inlet and continuing south to Marineland. There is a narrow, apparently erosional beach with no residential development. The wetlands in the unit consist of about 30 percent salt marsh and 70 percent mangrove swamp. A highway follows the coast and more or less bisects the wetlands. The unit is flanked by development to the north (Summer Haven) and the south (Marineland).

P07-Ormond-by-the-Sea (Volusia). This unit includes about 3 miles of barrier beginning about 0.5 mile south of Flagler Beach State Park. There is a well-developed beach and dune ridge complex with salt marsh on the landward side. Highway A1A runs throughout the length of the unit. There is evidence of planned development, but actual residences are few in number and scattered. The salt marsh has been altered by mosquito-control ditches, probably from the mid-1960's. The unit fronts the Atlantic Ocean and is bounded on the landward side by the Intracoastal Waterway (ICW). There is dense residential development at both the north and south ends of the unit.

P08-Ponce Inlet (Volusia). This unit is mostly barrier beach and associated sand flats and shoals. There is essentially no vegetated wetland. Jetties are present on both sides of the inlet, and the only permanent buildings are those of the U.S. Coast Guard station. There is evidence of vehicle

CBRS UNITS IN FLORIDA (EAST COAST) ESTABLISHED BY CONGRESS, 1982

Unit Name	Unit ID Code	County	Shoreline Length (miles)	Area (acres)
Talbot Islands Complex	P02	Duval	4.2	6,794.3
Usinas Beach	P04A	St. Johns	0.4	279.4
Conch Island	P05	St. Johns	2.0	1,187.1
Matanzas River	P05A	St. Johns	1.9	165.3
Ormond-by-the-Sea	P07	Volusia	3.2	735.4
Ponce Inlet	P08	Volusia	1.3	871.4
Coconut Point	P09A	Brevard	1.8	769.5
Vero Beach	P10	Indian River	1.7	337.2
Blue Hole	P10A	Indian River		
		St. Lucie	3.2	3,074.4
Hutchinson Island	P11	St. Lucie	8.9	5,836.1
Hobe Sound	P12	Martin	1.1	25.6
North Beach	P14A	Broward	0.8	128.1
Totals:			30.5	20,203.8

trails throughout the unit. Residential development increases greatly to both the north and the south of the unit.

P09A-Coconut Point (Brevard). This unit consists of about 2 miles of barrier with a fairly well-developed beach and dune ridge. Highway A1A traverses the unit and there is sparse residential development. The habitat appears to be essentially unaltered. The unit is bounded by the Atlantic Ocean on the east and the Indian River on the west. Dense development lies to the north and south.

P10-Vero Beach (Indian River). This unit, comprising 1.7 miles of barrier, begins 2 miles south of Sebastian Inlet. It has a moderately broad beach with mangrove swamp on the landward side of the island. Highway AIA extends the length of the unit. The only apparent alteration of the habitat other than the highway is that of mosquito-control ditches throughout the southern half of the mangrove swamp. To the south of the unit are citrus groves and sparse residential development.

P10A-Blue Hole (Indian River and St. Lucie). This unit consists of 3.2 miles of barrier island. It has a fairly well-developed beach and dune ridge complex and an extensive wetland on the landward side of the island. The coast highway (A1A) traverses the unit and there is some sparse residential development. The wetland comprises about 80 percent salt marsh and 20 percent mangrove swamp. About two-thirds of the wetland has mosquito-control ditches. The barrier is bounded by extensive development to the north and south.

P11-Hutchinson Island (St. Lucie). This extensive and well-studied unit consists of about 10 miles of barrier island. There are also three excluded parcels totaling 1.7 miles on the island. The largest of these excluded parcels contains the Hutchinson Island nuclear power station. About 85 to 90 percent of the unit is mangrove swamp. The remainder is mostly beach and dune. There is a 1.5-mile reach of the island where wetlands are absent. The coast, highway and an unpaved trail parallel the coast and there is extensive mosquito-control ditching. The island continues to the north and south of the unit with extensive residential development.

P12-Hobe Sound (Martin). This unit consists of about 1 mile of beach and dune on Jupiter Island. The landward boundary is quite irregular because it runs along Hobe Sound National Wildlife Refuge. The unit has no marshlands and is accessible by road from the south only. There is adjacent mangrove wetland which is ditched and contains some spoil piles adjacent to the ICW.

The residential population density on the island decreases northward toward St. Lucie Inlet and increases southward where the island is accessible by automobile.

P14A-North Beach (Broward). This unit comprises two parcels about 0.25 mile apart; each is less than 0.5 mile in length. The coast highway traverses the unit, and the south parcel is connected to the mainland via a four-lane causeway. The unit has a moderately wide beach but no marshlands. There are a few buildings on the south parcel. The adjacent coastal lagoon is densely developed both to the north (Dania) and to the south (Hollywood).

PROPOSED ADDITIONS AND MODIFICATIONS

This section identifies proposed recommendations for additions to and deletions from the Coastal Barrier Resources System on the east coast of Florida. The Secretary of the Interior, as directed by Section 10 of the Coastal Barrier Resources Act, will make his final recommendations to the Congress after a 90-day public comment period. The following proposed recommendations have been developed in response to public, State and Federal agency, and Congressional comments on the Coastal Barrier Draft Inventory developed by the Study Group.

The inventory maps were available for public comment between March 4, 1985, and September 30, 1985. The process and criteria used in the inventory were described on March 4, 1985, in the Federal Register (Vol. 50, No. 42).

The State of Florida reviewed these documents and favors a substantial expansion of CBRS, including:

1. undeveloped parts of the Florida Keys,
2. all publicly owned land except intensively developed recreation and beach parking facilities,
3. "otherwise protected" private holdings, and
4. associated aquatic habitats including estuarine sanctuaries and aquatic preserves but excluding deepwater ports.

However, the State also requested exclusions of the following:

1. phased developments within State-approved developments of regional impact, and
2. State road right-of-ways not contiguous with State roads already in CBRS, including bridges and causeways not presently in the CBRS.

The Department received 770 comments (539 petition signatures) concerning the entire State of Florida. Approximately 600 of these (including all of the petitions) expressed opposition to including the Keys in CBRS. Of the remaining letters, a little more than half opposed the CBRS expansion in other areas of the coast.

The Department of the Interior proposes to recommend that all undeveloped, unprotected coastal barriers and associated aquatic habitats identified in the inventory be included in the Coastal Barrier Resources System.

During the CBRA deliberations in 1982, Congress requested the Department to review the geological composition of CBRS unit P09A, Coconut Point. Study Group geomorphologists have examined this unit and determined that it fully qualifies as a coastal barrier. Aerial photography was not available at the time this unit was originally recommended for inclusion in CBRS. However, subsequent photography and on-the-ground inspection have revealed a substantial undeveloped area to the south of this unit. The Department proposes that Coconut Point be retained in CBRS and that the undeveloped area to the south be added to this unit.

A large area to the south of CBRS unit P10, Vero Beach, was dropped from consideration for inclusion in CBRS by the Department in 1982 because extensive agricultural development (citrus groves) existed in the area. The rationale for exclusion was that the major capital investment for agriculture effectively committed the entire area to non-residential use. Aerial photography of Vero Beach was not available at that time. Subsequent photography and on-the-ground inspection have confirmed the existence of many citrus groves but no development in a substantial part of the area. County records indicate that this area is zoned for residential development and site visits in 1985 and 1986 revealed a number of "For Sale" signs along State Highway AIA. Given the skyrocketing value of coastal barrier property, it is very probable that this area will face intense development pressure in the near future, and in fact one small development is already underway. This area meets the definition of an undeveloped coastal barrier, therefore, the Department recommends that it be included in CBRS.

Review of aerial photography after the passage of CBRA and on-the-ground inspections led to recommendations for additions to and deletions from CBRS units P10A and P11. These recommended modifications include additional undeveloped segments and exclude segments that were developed prior to passage of CBRA in 1982.

A table presenting the Department's current position on each unit identified in the inventory follows this discussion.

Public comment on the proposed recommendations is solicited.

Comments should be directed to:

The Coastal Barriers Study Group
Department of the Interior
National Park Service
P.O. Box 37127
Washington, DC 20013-7127.

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SUMMARY OF PROPOSED RECOMMENDATIONS FOR COASTAL BARRIERS ALONG THE EAST COAST OF FLORIDA

Unit ID Code[a]	Unit Name[b]	County	Congress. Dist.[c]	Shoreline Length (miles)[d]	Area (acres)[e]	Proposed Recommendation[f]
FL-01	Fort Clinch	Nassau	3	—	—	State protected; no further consideration
FL-02	Nassau River	Nassau Duval	3	—	—	State protected; no further consideration
P02	Talbot Island Complex	Duval	3	3.5	23,872	Add Fort George Island and wetlands to existing CBRS unit. Delete Wards Bank segment of unit; State protected
FL-03	Mickler Landing	St. Johns	4	—	—	State protected; no further consideration
FL-04	Tolomato River	St. Johns	4	—	—	State protected; no further consideration
P04A	Usinas Beach	St. Johns	4	0.4	772	Add wetlands to existing CBRS unit
P05	Conch Island	St. Johns	4	2.0	1,833	Delete State/federally (NPS) protected area from inventory. Add wetlands and undeveloped barrier to existing CBRS unit
FL-05	Butler Beach	St. Johns	4	—	—	State protected; no further consideration
P05A	Matanzas River	St. Johns	4	1.9	3,015	Delete federally protected (NPS) area from inventory. Add wetlands to existing CBRS unit
FL-06	Washington Oaks	Flagler	4	—	—	State protected; no further consideration
P07	Ormond-by-the-Sea	Volusia	4	3.2	2,631	Delete State-protected area from inventory; add wetlands to existing CBRS unit
P08	Ponce Inlet	Volusia	4	1.3	4,343	Delete Coast Guard station from inventory; add wetlands to existing CBRS unit

(continued)

SUMMARY OF PROPOSED RECOMMENDATIONS FOR COASTAL BARRIERS ALONG THE EAST COAST OF FLORIDA (CONTINUED)

Unit ID Code[a]	Unit Name[b]	County	Congress. Dist.[c]	Shoreline Length (miles)[d]	Area (acres)[e]	Proposed Recommendation[f]
FL-07	Canaveral	Volusia Brevard	4 11	—	—	Locally, State, and federally (NPS, FWS) protected; also NASA and military installations. No further consideration
FL-08	Banana River	Brevard	11	—	—	Locally/State protected; no further consideration
FL-09	Newfound Harbor	Brevard	11	—	—	Locally protected; no further consideration
FL-10	Cocoa Beach	Brevard	11	—	—	Locally protected; no further consideration
FL-11	Pelican Beach	Brevard	11	—	—	Locally protected; no further consideration
FL-12	Paradise Beach	Brevard	11	—	—	Locally protected; no further consideration
FL-13	Spessard Holland Park	Brevard	11	—	—	Locally protected; no further consideration
P09A	Coconut Point	Brevard	11	2.8	1,390	Delete all of inventory area which is State/ locally protected. Add undeveloped area to existing CBRS unit.
P10	Vero Beach	Indian River	11	5.9	5,231	Delete State/ federally (FWS) protected area from inventory. Add undeveloped barrier and wetlands to existing CBRS unit
P10A	Blue Hole	Indian River St. Lucie	11 12	3.2	3,074	Delete all of inventory area which is locally/ State protected. Fort Pierce Harbor excluded from further consideration because it is fully developed
FL-14	Jaycee Park	St. Lucie	12	—	—	Locally protected; no further consideration

(continued)

SUMMARY OF PROPOSED RECOMMENDATIONS FOR COASTAL BARRIERS ALONG THE EAST COAST OF FLORIDA (CONTINUED)

Unit ID Code[a]	Unit Name[b]	County	Congress. Dist.[c]	Shoreline Length (miles)[d]	Area (acres)[e]	Proposed Recommendation[f]
P11	Hutchinson Island	St. Lucie Martin	12	10.4	6,580	Delete State protected area and developed areas from inventory. Add wetlands and undeveloped barrier to existing CBRS unit
P12	Hobe Sound	Martin	12	1.1	26	Delete all of inventory area which is State/ federally (FWS) protected. No change to existing CBRS unit
FL-15	Jupiter Sound	Martin	12	—	—	State/privately protected; no further consideration
FL-16	Dubois Park	Palm Beach	12	—	—	Locally protected; no further consideration
FL-17	Carlin Park	Palm Beach	12	—	—	Locally protected; no further consideration
FL-18	Juno Beach	Palm Beach	12	—	—	Locally protected; no further consideration
FL-19	Pegasus	Palm Beach	12	—	—	Locally protected; no further consideration
FL-20	MacArthur Beach	Palm Beach	12	—	—	State protected; no further consideration
FL-21	Palm Beach	Palm Beach	12	—	—	Locally protected; no further consideration
FL-22	Peanut Island	Palm Beach	12	—	—	Coast Guard station; no further consideration
FL-23	Mar-A-Lago	Palm Beach	12	—	—	Below minimum shoreline length; no further consideration
FL-24	Kreusler Park	Palm Beach	12	—	—	Developed; no further consideration
FL-25	Boynton Inlet	Palm Beach	12	—	—	Locally protected; no further consideration
FL-26	Oak Ridge Hammock	Palm Beach	12	—	—	Locally protected; no further consideration

(continued)

SUMMARY OF PROPOSED RECOMMENDATIONS FOR COASTAL BARRIERS ALONG THE EAST COAST OF FLORIDA (CONTINUED)

Unit ID Code[a]	Unit Name[b]	County	Congress. Dist.[c]	Shoreline Length (miles)[d]	Area (acres)[e]	Proposed Recommendation[f]
FL-27	Gulf Stream	Palm Beach	12	—	—	Locally protected; no further consideration
FL-28	Boca Raton	Palm Beach	12	—	—	Locally protected: no further consideration
FL-29	Hillsboro Inlet	Broward	16	—	—	Coast Guard station; no further consideration
FL-30	Hugh Taylor Birch	Broward	16	—	—	State protected; no further consideration
FL-31	Dania Sound	Broward	16	—	—	Military (Navy) and State protected; no further consideration
P14A	North Beach	Broward	16	0.8	637	Add wetlands to existing CBRS unit; no change from inventory
FL-32	Haulover Beach	Dade	19	—	—	Locally protected; no further consideration
FL-33	Miami Beach Parks	Dade	19	—	—	Locally protected; no further consideration
FL-34	Biscayne	Dade	19	—	—	Locally/State/ federally (NPS) protected; no further consideration
FL-35	Key Largo	Monroe	19	15.46	38,032	Delete State/ federally (FWS) protected area from inventory; add balance to CBRS
FL-36	Everglades	Monroe	19	—	—	Federally protected (NPS); no further consideration
FL-37	Rodriguez Key	Monroe	19	3.31	1,439	Add to CBRS; no change from inventory
FL-38	Long Point	Monroe	19	3.42	1,062	Add to CBRS; no change from inventory
FL-39	Tavernier Key	Monroe	19	1.64	1,993	Add to CBRS; no change from inventory

(continued)

SUMMARY OF PROPOSED RECOMMENDATIONS FOR COASTAL BARRIERS ALONG THE EAST COAST OF FLORIDA (CONTINUED)

Unit ID Code[a]	Unit Name[b]	County	Congress. Dist.[c]	Shoreline Length (miles)[d]	Area (acres)[e]	Proposed Recommendation[f]
FL-40	Plantation Key	Monroe	19	4.31	5,767	Add to CBRS; no change from inventory
FL-41	Lignumvitae Key	Monroe	19	—	—	State protected; no further consideration
FL-42	Long Key	Monroe	19	—	—	State protected; no further consideration
FL-43	Channel Key	Monroe	19	0.55	1,169	Add to CBRS; no change from inventory
FL-44	Toms Harbors Keys	Monroe	19	1.16	1,498	Add to CBRS; no change from inventory
FL-45	Crawl Key Complex	Monroe	19	0.69	3,312	Add to CBRS; no change from inventory
FL-46	Boot Key	Monroe	19	—	—	Locally protected; no further consideration
FL-47	Great White Heron	Monroe	19	—	—	Federally protected (FWS); no further consideration
FL-48	Key Deer	Monroe	19	—	—	Federally protected (FWS); no further consideration
FL-49	Bahia Honda	Monroe	19	—	—	State protected; no further consideration
FL-50	Coupon Bight	Monroe	19	3.60	5,755	Delete State protected area from inventory; add balance to CBRS
FL-51	Big Pine Key	Monroe	19	2.62	3,203	Add to CBRS; no change from inventory
FL-52	Ramrod Key	Monroe	19	6.74	876	Add to CBRS; no change from inventory
FL-53	Cudjoe Key	Monroe	19	0.29	1,030	Add to CBRS; no change from inventory
FL-54	Sugarloaf Key	Monroe	19	3.25	13,646	Add to CBRS; no change from inventory
FL-55	Saddlebunch Keys	Monroe	19	7.87	10,935	Add non-military lands from FL-56 to inventory unit; add to CBRS

(continued)

SUMMARY OF PROPOSED RECOMMENDATIONS FOR COASTAL BARRIERS ALONG THE EAST COAST OF FLORIDA (CONCLUDED)

Unit ID Code[a]	Unit Name[b]	County	Congress. Dist.[c]	Shoreline Length (miles)[d]	Area (acres)[e]	Proposed Recommendation[f]
FL-56	Boca Chica Key	Monroe	19	—	—	Military (Navy), except lands added to FL-55; no further consideration
FL-57	Cow Key	Monroe	19	0.47	1,994	Add to CBRS; no change from inventory
FL-58	Roosevelt	Monroe	19	—	—	Locally protected; no further consideration
FL-59	Fort Taylor	Monroe	19	—	—	Locally protected; no further consideration
FL-60	Key West	Monroe	19	—	—	Federally protected (FWS); no further consideration
FL-61	Tortugas	Monroe	19	—	—	Federally protected (NPS); no further consideration
	Total - CBRS as Recommended			91.88	145,115	
	Existing CBRS			30.5	20,204	
	Net Change in CBRS			+61.38	+124,911	

[a]UNIT ID CODE - State initials (FL) plus a number identify a proposed new unit. An existing unit is identified by the legal code letter (P) and number established by Congress in 1982.

[b]UNIT NAME - For proposed new units, this is a provisional name based on a prominent local feature. For existing CBRS units, this is the legal name.

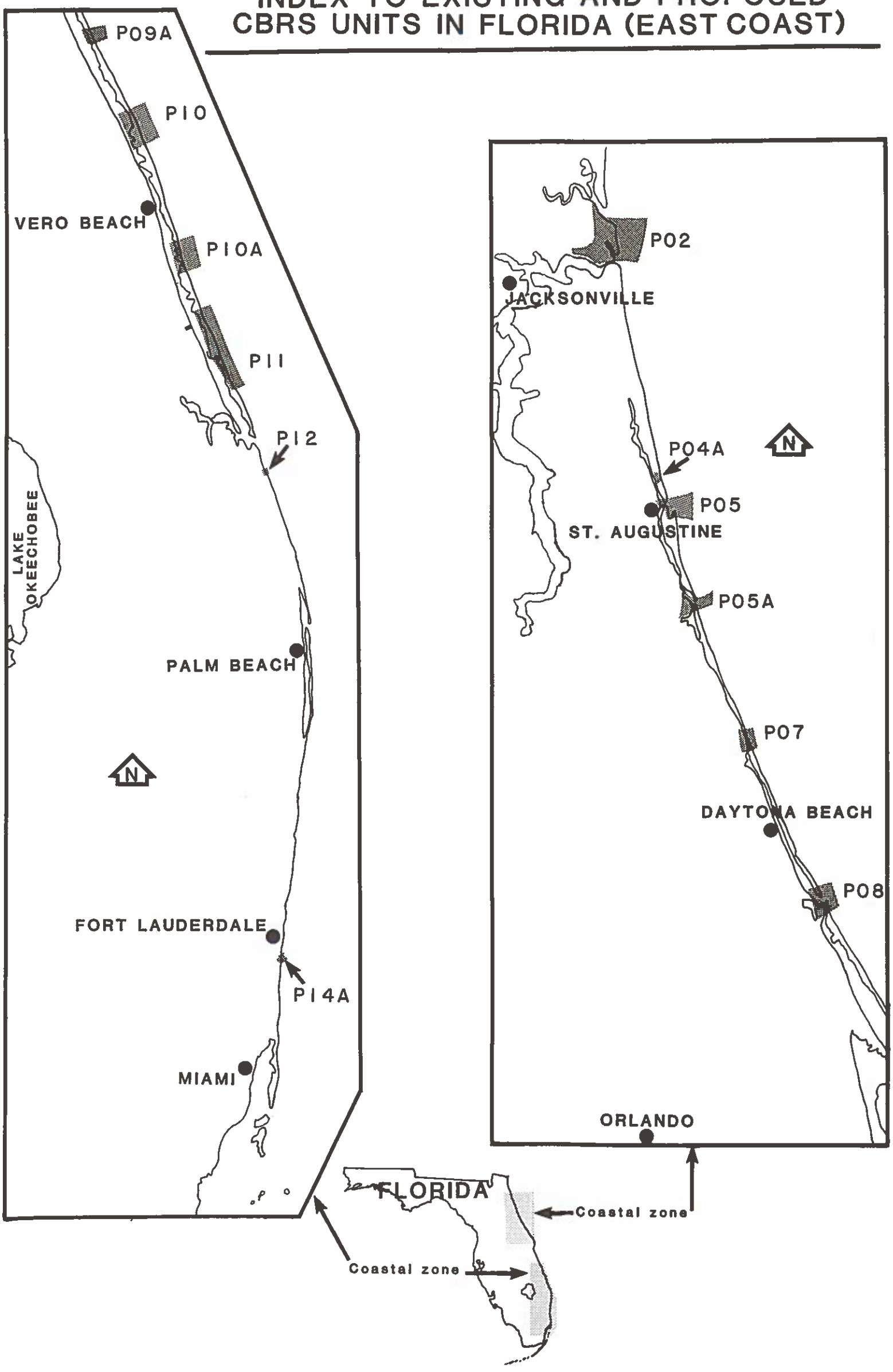
[c]CONGRESSIONAL DISTRICT - U.S. Congressional District in which unit is located.

[d]SHORELINE LENGTH - For existing units with additions or deletions, this length is for the entire unit, as modified.

[e]AREA - For existing units with additions or deletions, this area is for the entire unit, as modified.

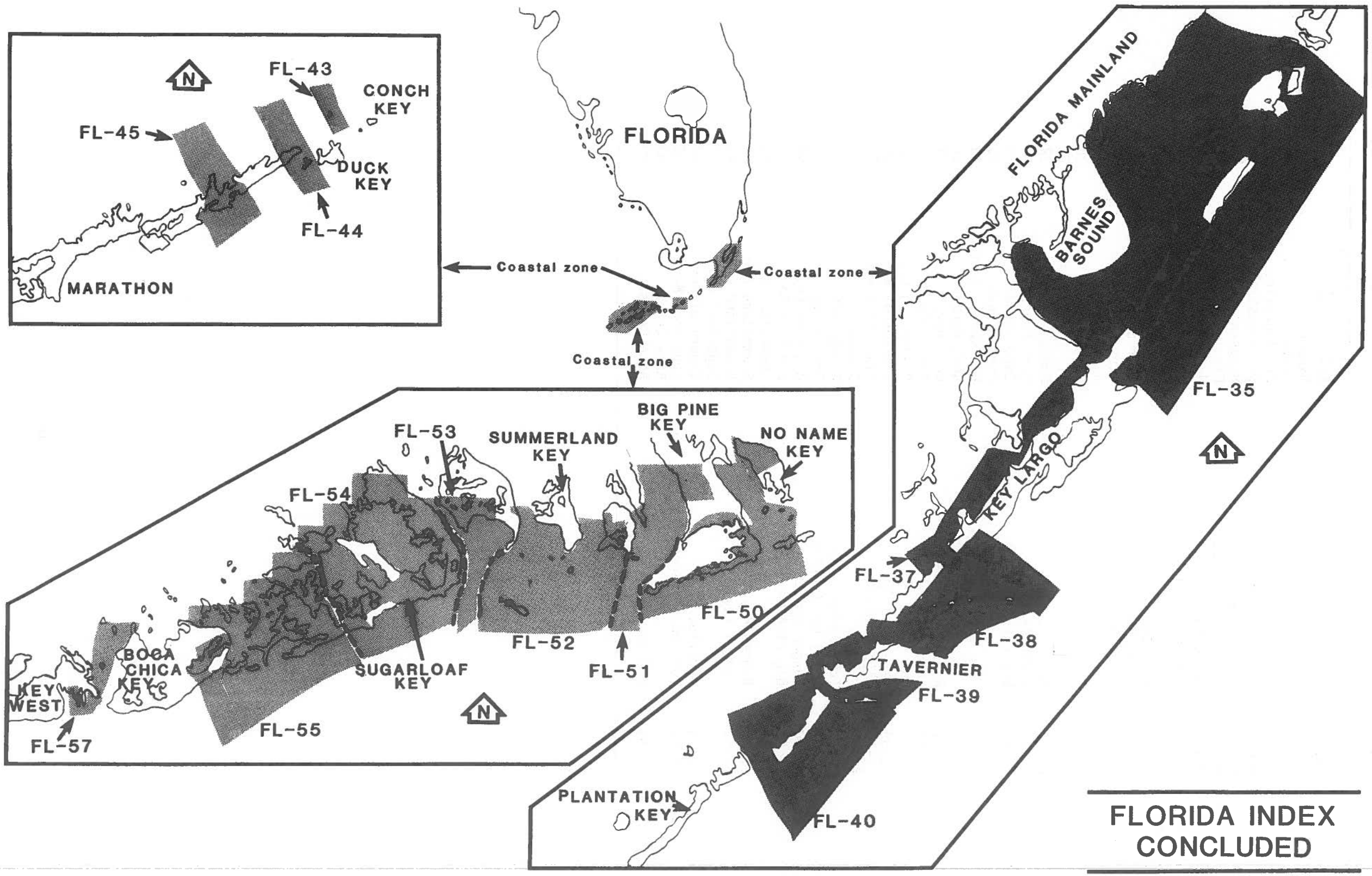
[f]PROPOSED RECOMMENDATION - A brief explanation of the differences between the 1985 inventory and the recommendations proposed in this revised inventory. For more detailed explanations, please contact the Study Group. Abbreviations: FWS = Fish and Wildlife Service, NPS = National Park Service, CBRS = Coastal Barrier Resources System. Barriers no longer under consideration are not mapped in this atlas.

INDEX TO EXISTING AND PROPOSED CBRS UNITS IN FLORIDA (EAST COAST)



(Florida Index continued on next page)

USER NOTE: To locate the map(s) of each existing and proposed CBRS unit in this volume, consult the table on the following page.



FLORIDA INDEX CONCLUDED

EXISTING AND PROPOSED CBRS UNITS AND THEIR LOCATION IN THIS VOLUME

Unit ID Code	Unit Name	USGS Topographic Map or Map Composite	Page
P02	Talbot Island Complex	Amelia City	18
		Mayport	19
		Eastport	20
P04A	Usinas Beach	St. Augustine	21
P05	Conch Island	St. Augustine	21
P05A	Matanzas River	Matanzas Inlet	22
P07	Ormond-by-the-Sea	Flagler Beach East	23
P08	Ponce Inlet	New Smyrna Beach	24
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		Sebastian	26
P10	Vero Beach	Sebastian	26
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		Ankona	29
		Eden	30
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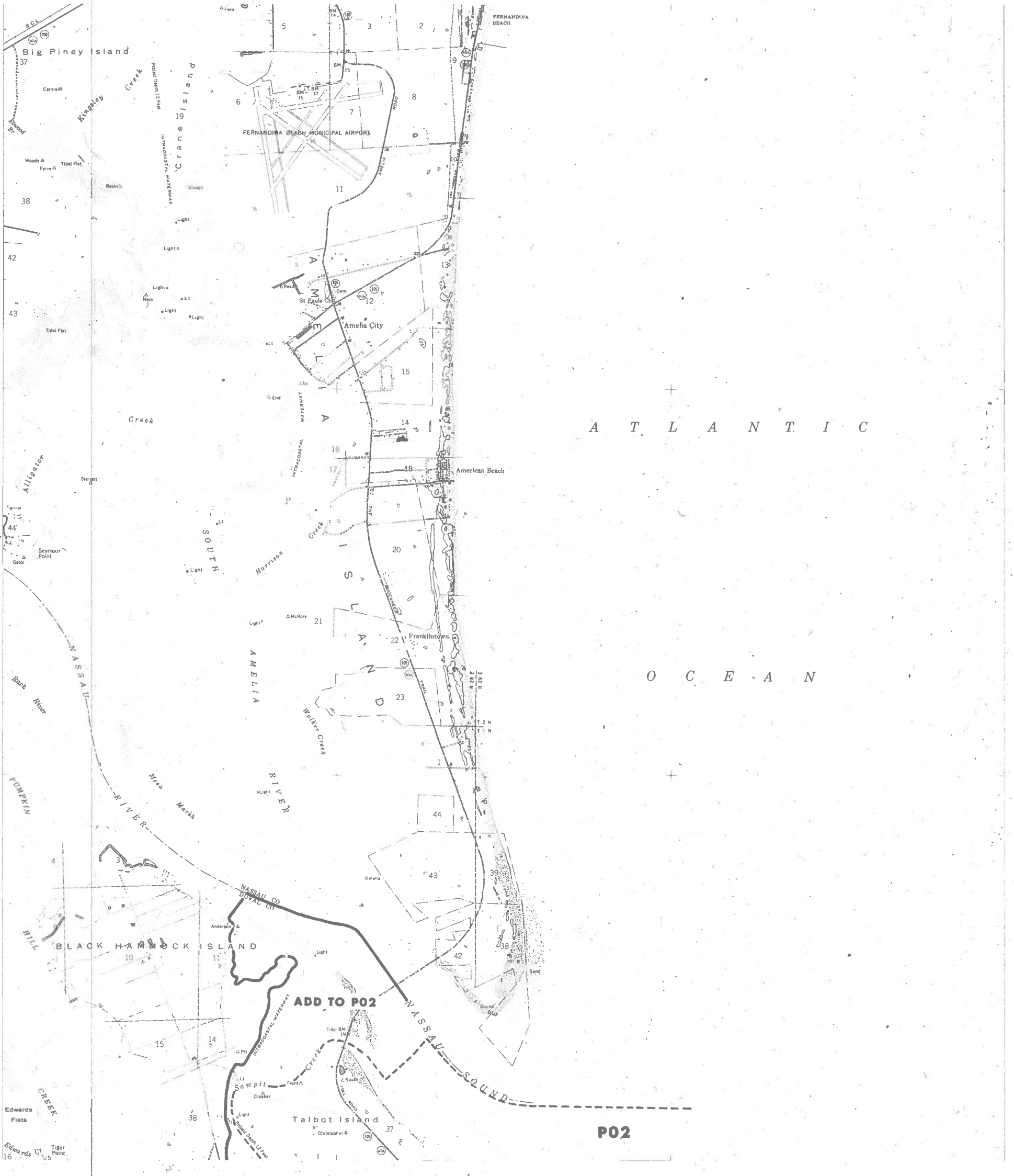
FL-35	Key Largo	Card Sound	34
		Garden Cove	35
		Blackwater Sound	36
		Rock Harbor	37
FL-37	Rodriguez Key	Rock Harbor	37
FL-38	Long Point	Rock Harbor	37
		Plantation Key	38
FL-39	Tavernier Key	Plantation Key	38
FL-40	Plantation Key	Plantation Key	38
FL-43	Channel Key	Grassy Key	39
FL-44	Toms Harbors Keys	Grassy Key	39
FL-45	Crawl Key Complex	Grassy Key	39
FL-50	Coupon Bight	Big Pine Key	40
FL-51	Big Pine Key	Big Pine Key	40
		Summerland Key	41
FL-52	Ramrod Key	Summerland Key	41
FL-53	Cudjoe Key	Summerland Key	41
		Sugarloaf Key	42
FL-54	Sugarloaf Key	Sugarloaf Key	42
FL-55	Saddlebunch Keys	Sugarloaf Key	42
		Boca Chica	43
FL-57	Cow Key	Boca Chica	43

MAP KEY

--------	Existing CBRS units
_____	Proposed additions to or deletions from CBRS
ADD	Area recommended for addition to a CBRS unit
DELETE	Area recommended for deletion from the CBRS
EXCLUDED	Area excluded from an existing or proposed CBRS unit because it is developed or it is otherwise protected



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18

QUADRANGLE

AMELIA CITY

FLORIDA

SCALE

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 5 0 1 KILOMETER

North

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P02

ADD TO P02

P02

DELETE FROM CBRS

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19

QUADRANGLE

MAYPORT

FLORIDA

SCALE

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20

QUADRANGLE
EASTPORT
FLORIDA

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QUADRANGLE
ST. AUGUSTINE
FLORIDA

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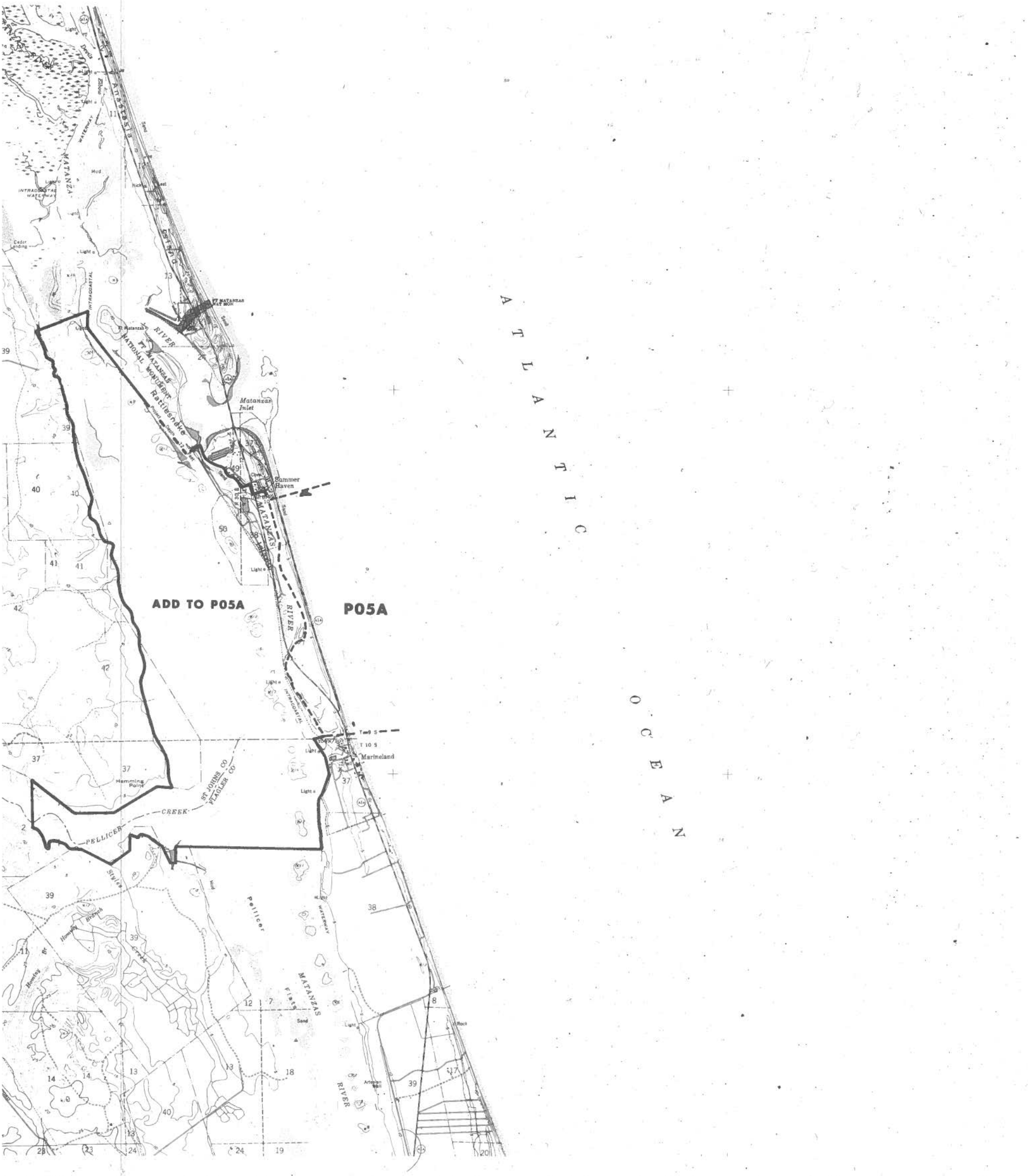

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22

QUADRANGLE

MATANZAS INLET

FLORIDA

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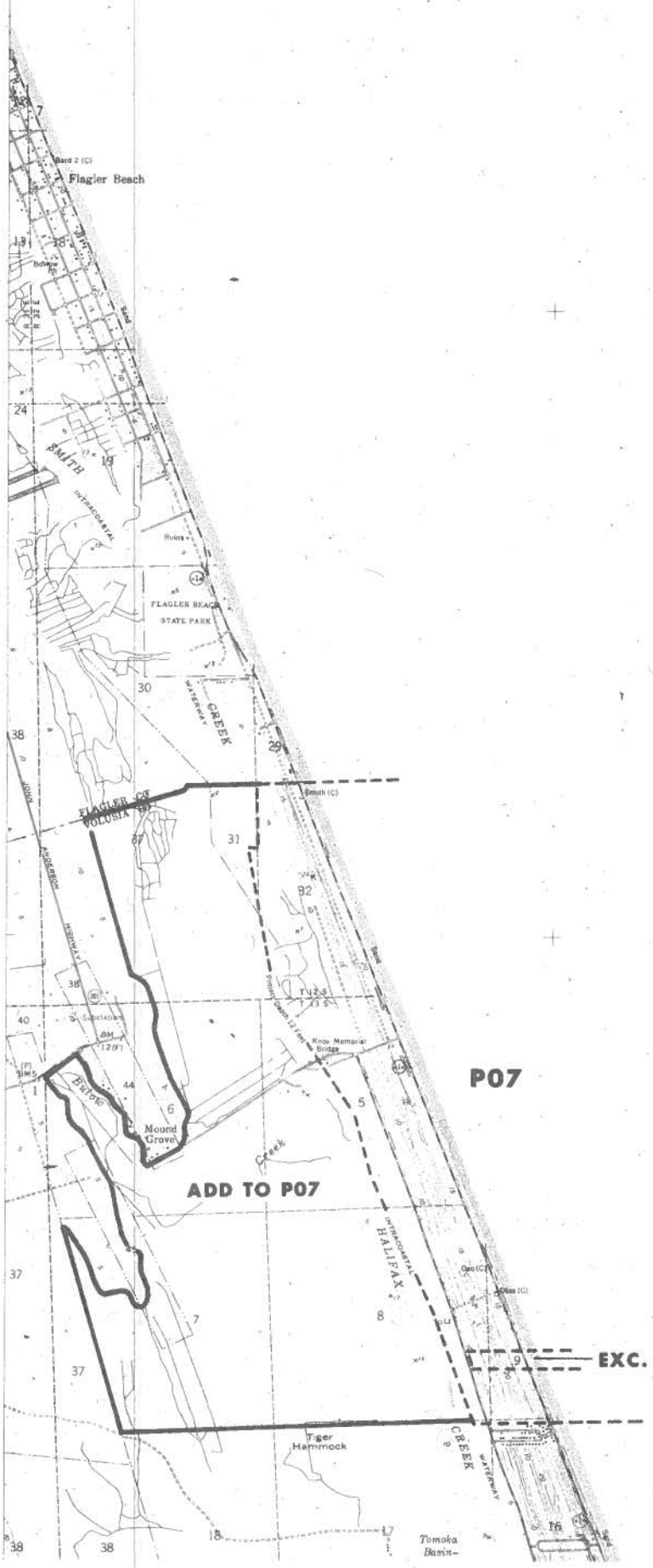

ATLANTIC OCEAN

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23

North

QUADRANGLE

FLAGLER BEACH EAST

FLORIDA

SCALE

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24

QUADRANGLE

NEW SMYRNA BEACH

FLORIDA

SCALE

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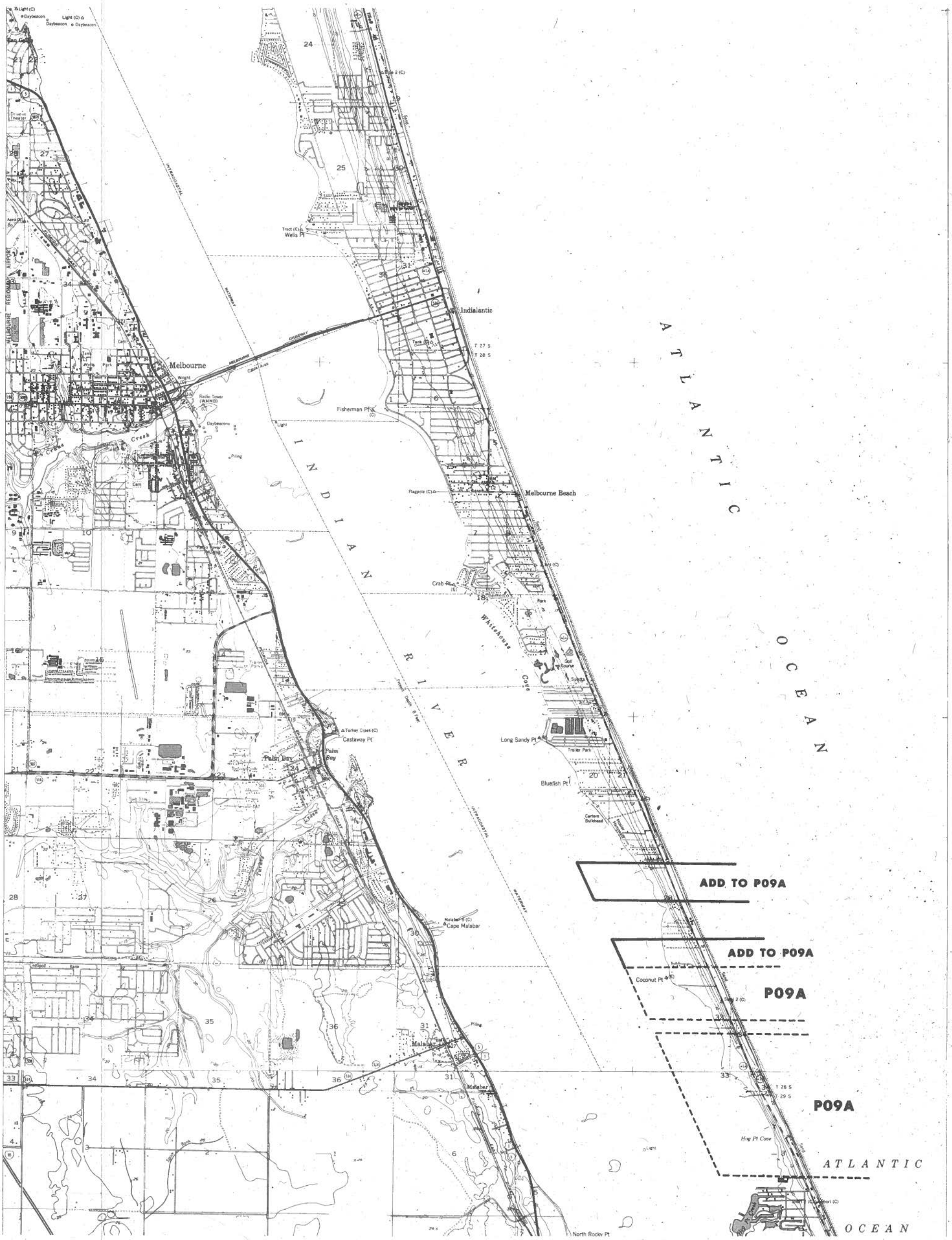

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25

QUADRANGLE

MELBOURNE EAST

FLORIDA

SCALE

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ADD TO P09A

P10

ADD TO P10

ADD TO P10

EXCLUDED

ADD TO P10

EXCLUDED

ADD TO P10

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26

QUADRANGLE

SEBASTIAN

FLORIDA

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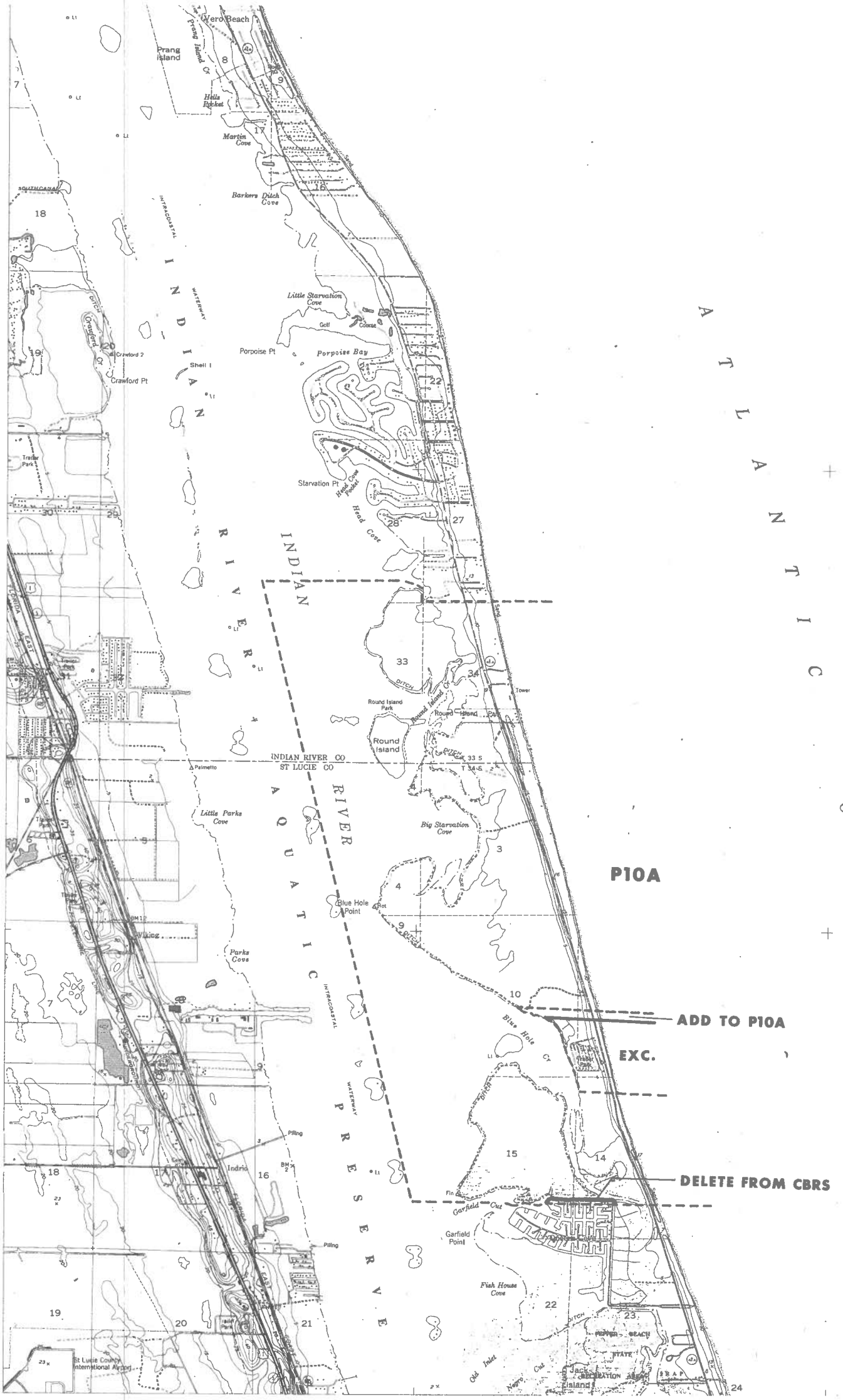

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27

North

QUADRANGLE
INDRIO
FLORIDA

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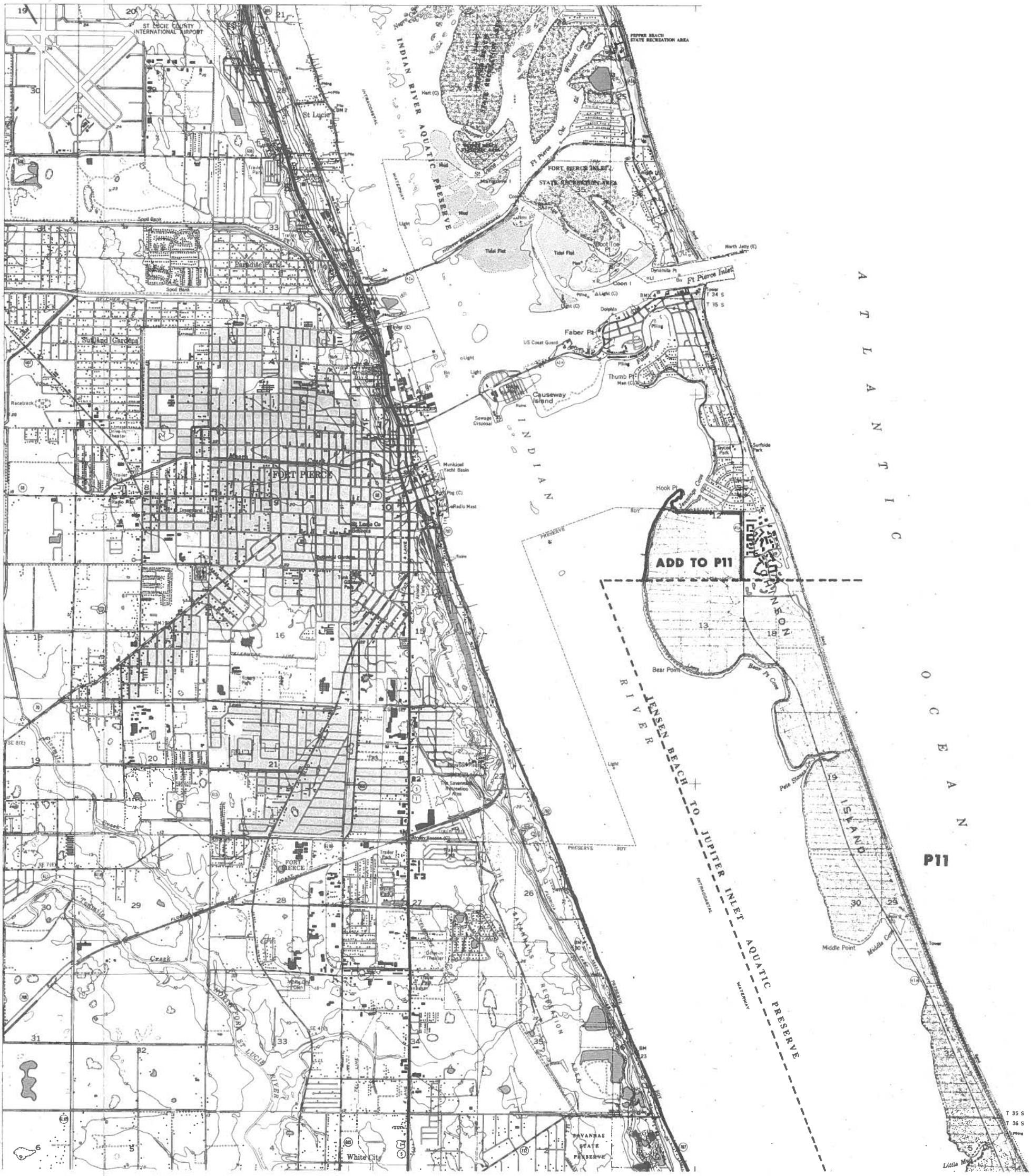

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28

QUADRANGLE

FORT PIERCE

FLORIDA

SCALE

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1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 5 0 1 KILOMETER

North

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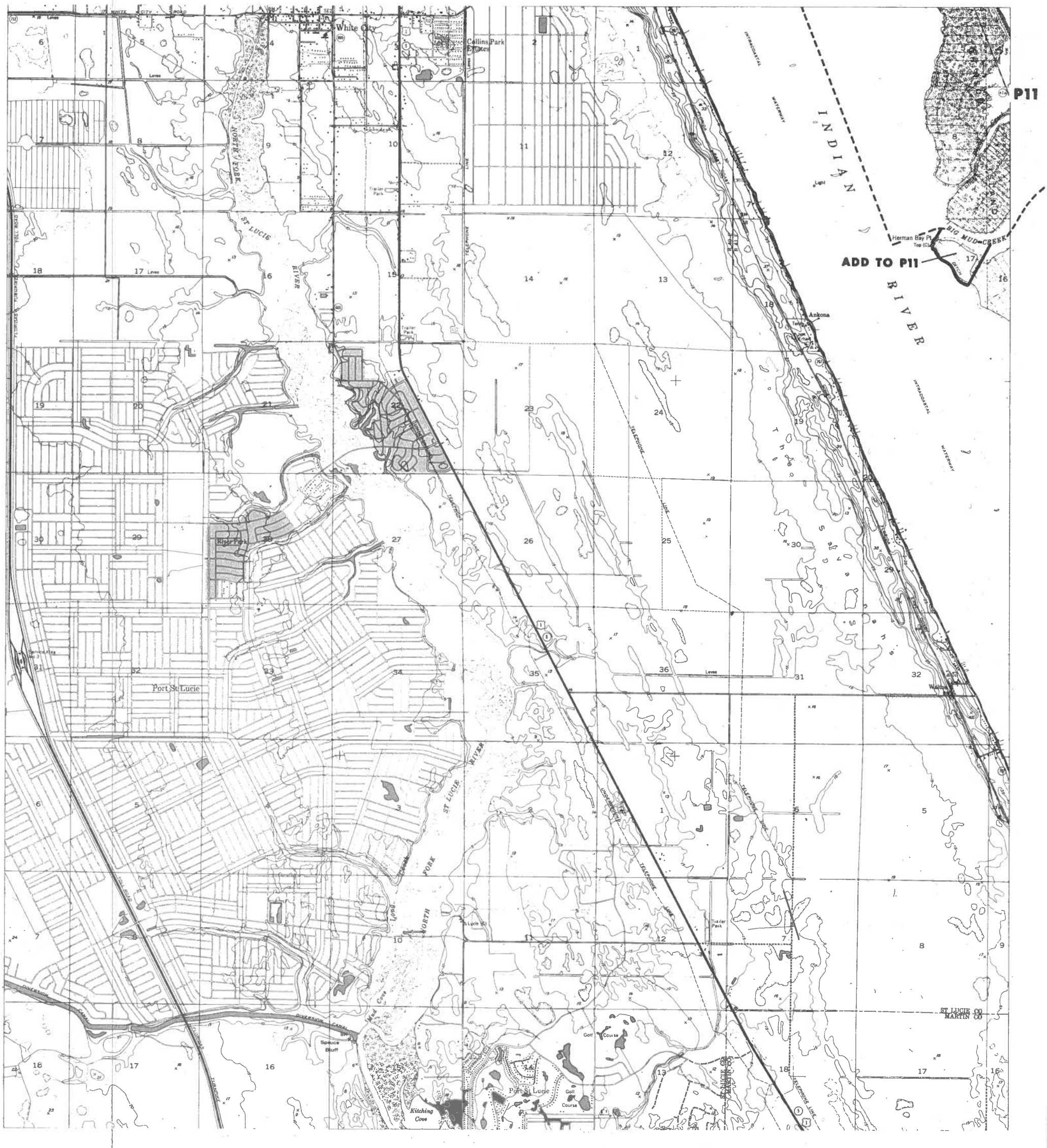

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29

QUADRANGLE

ANKONA

FLORIDA

SCALE

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 5 0 1 KILOMETER

North

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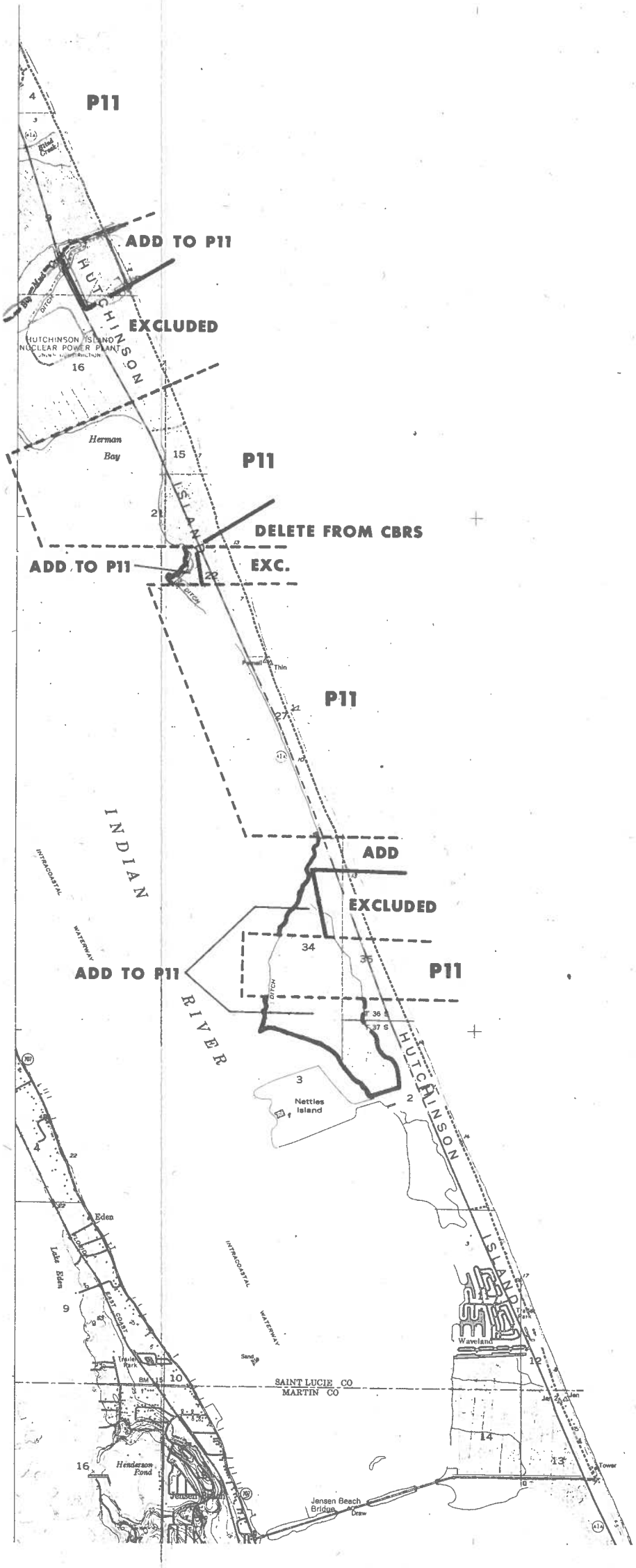

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30

North

QUADRANGLE

EDEN

FLORIDA

SCALE

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 5 0 1 KILOMETER

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ADD TO P11

ADD TO P11

Jensen Beach

Ocean Breeze Park

Races Point

Joes Point

Rio

Rio (E)

Rouge Cove

INDIAN

RIVER

INTRACOASTAL

WATERWAY

HUTCHINSON ISLAND

ATLANTIC OCEAN

Baker Point

Negro Cove

Refuge 2 (C)

Lookout Tower

Refuge Flagpole (C)

Bessie Cove

Seminole Shores

ST LUCIE RIVER

Beacon

Krueger

Snug Harbor

OK Woods Point

Sewall Point

Steele Point

STUART

Hooker Creek

Swinkos (E) Cove

WITHAM FIELD

Golf Course

Port Sewall

Hell Gate Point

Hell Gate

Sewall Point

Willoughby Ck

Golden Gate

Rocky Point Cove

Rocky Point

Manatee Pocket

Long Point

Horseshoe Pt

Great Pocket

The Narrows

LONG ISLAND

North Point

Jetty (C)

ST LUCIE INLET

South Point

Hole in the Wall

HANSON GRANT

Port Salerno

Coral Gardens

GOMEZ GRANT

Peck Lake

Jupiter Island

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North

QUADRANGLE

ST. LUCIE INLET

FLORIDA

SCALE

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 5 0 1 KILOMETER

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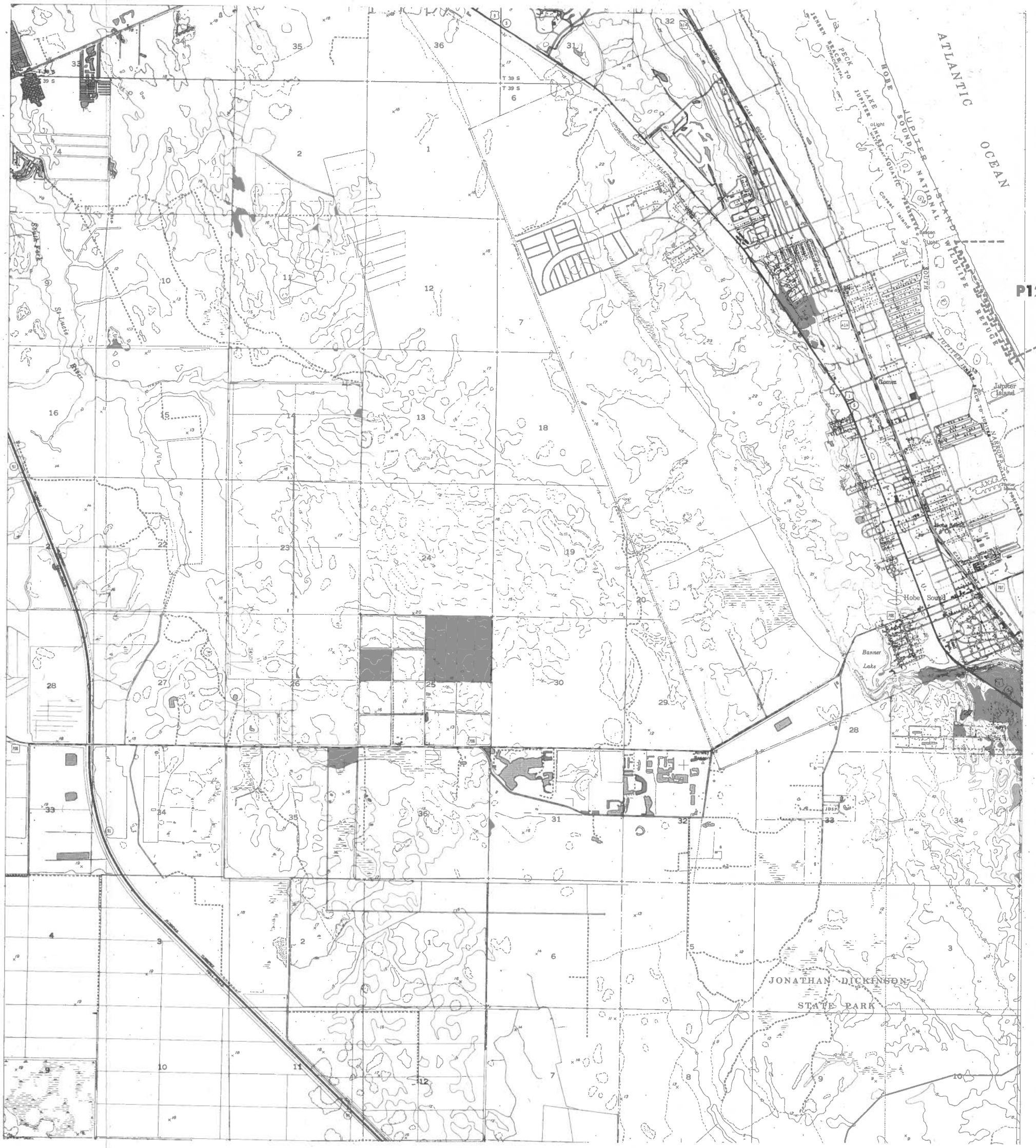

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QUADRANGLE

GOMEZ

FLORIDA

SCALE

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 5 0 1 KILOMETER

North

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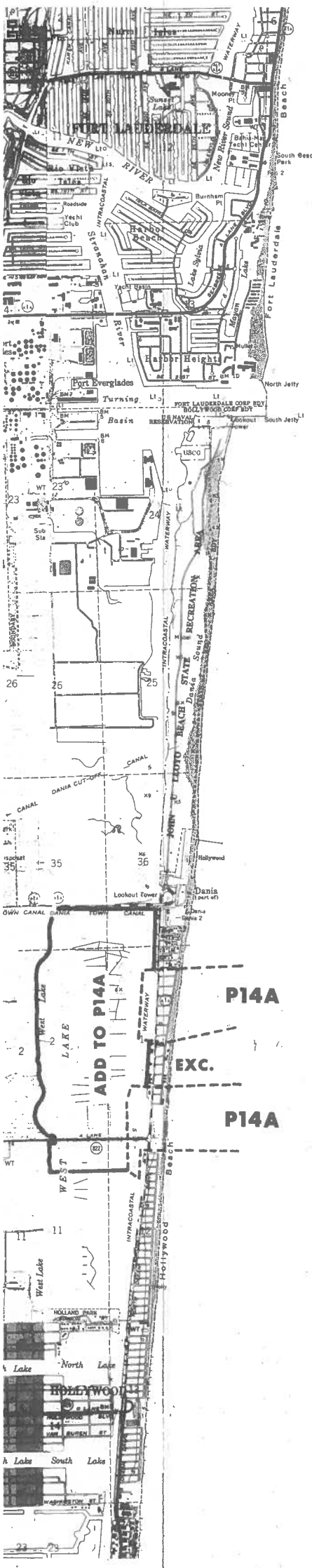

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QUADRANGLE

PORT EVERGLADES

FLORIDA

SCALE

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 5 0 1 KILOMETER

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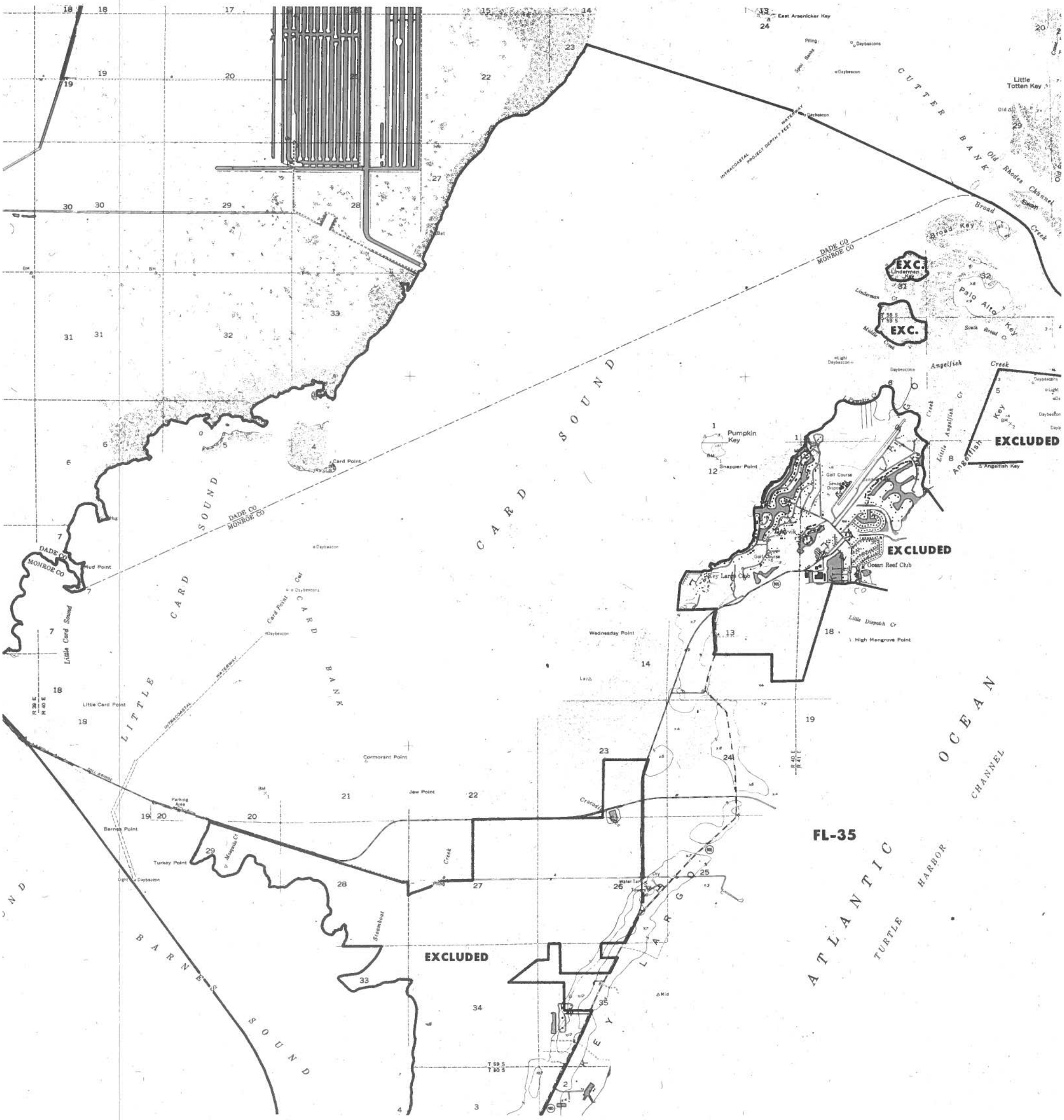

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QUADRANGLE
CARD SOUND
FLORIDA

SCALE
1 1/2 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 5 0 1 KILOMETER

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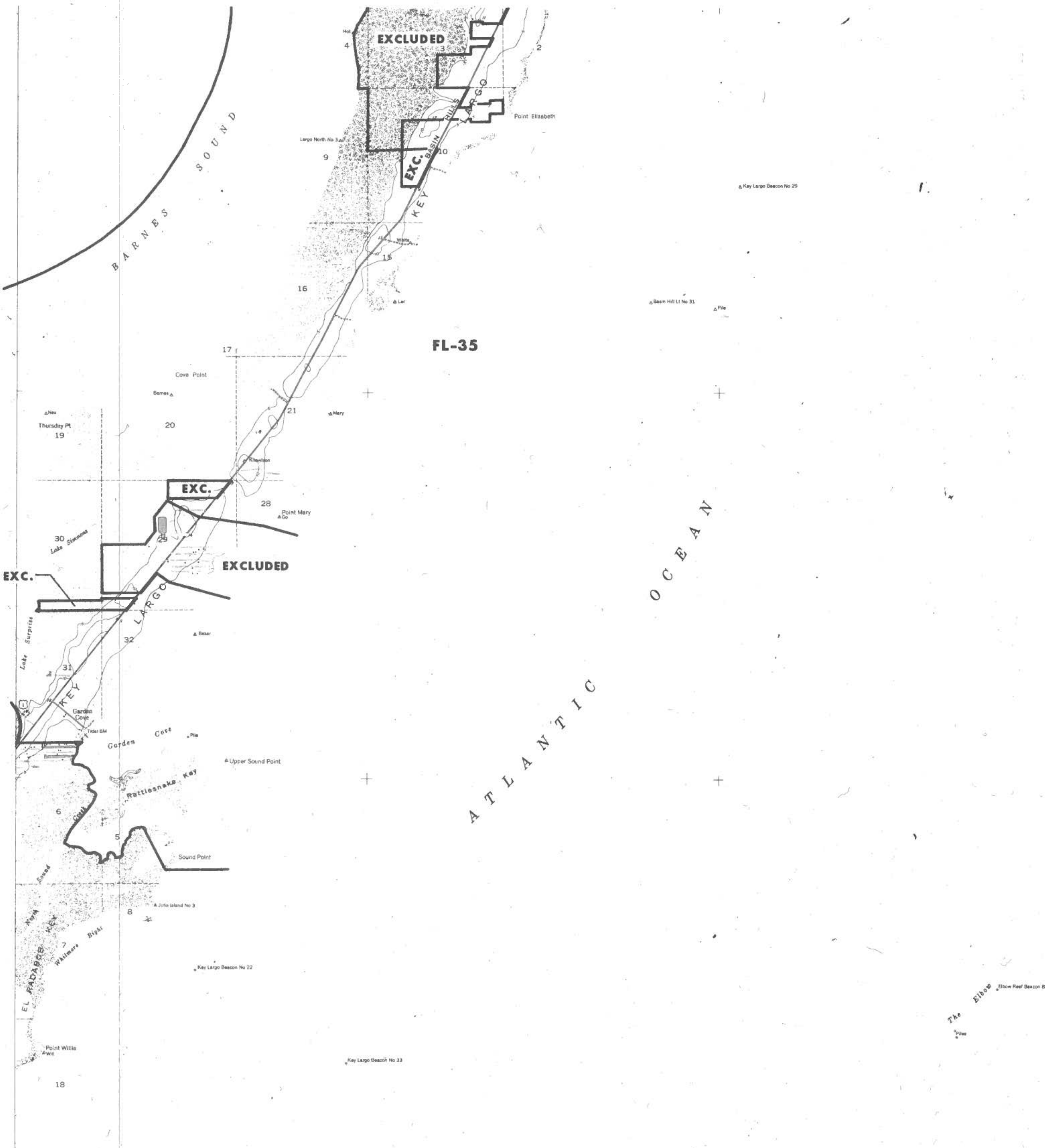

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QUADRANGLE
GARDEN COVE
FLORIDA

SCALE
1 1/2 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 5 0 1 KILOMETER

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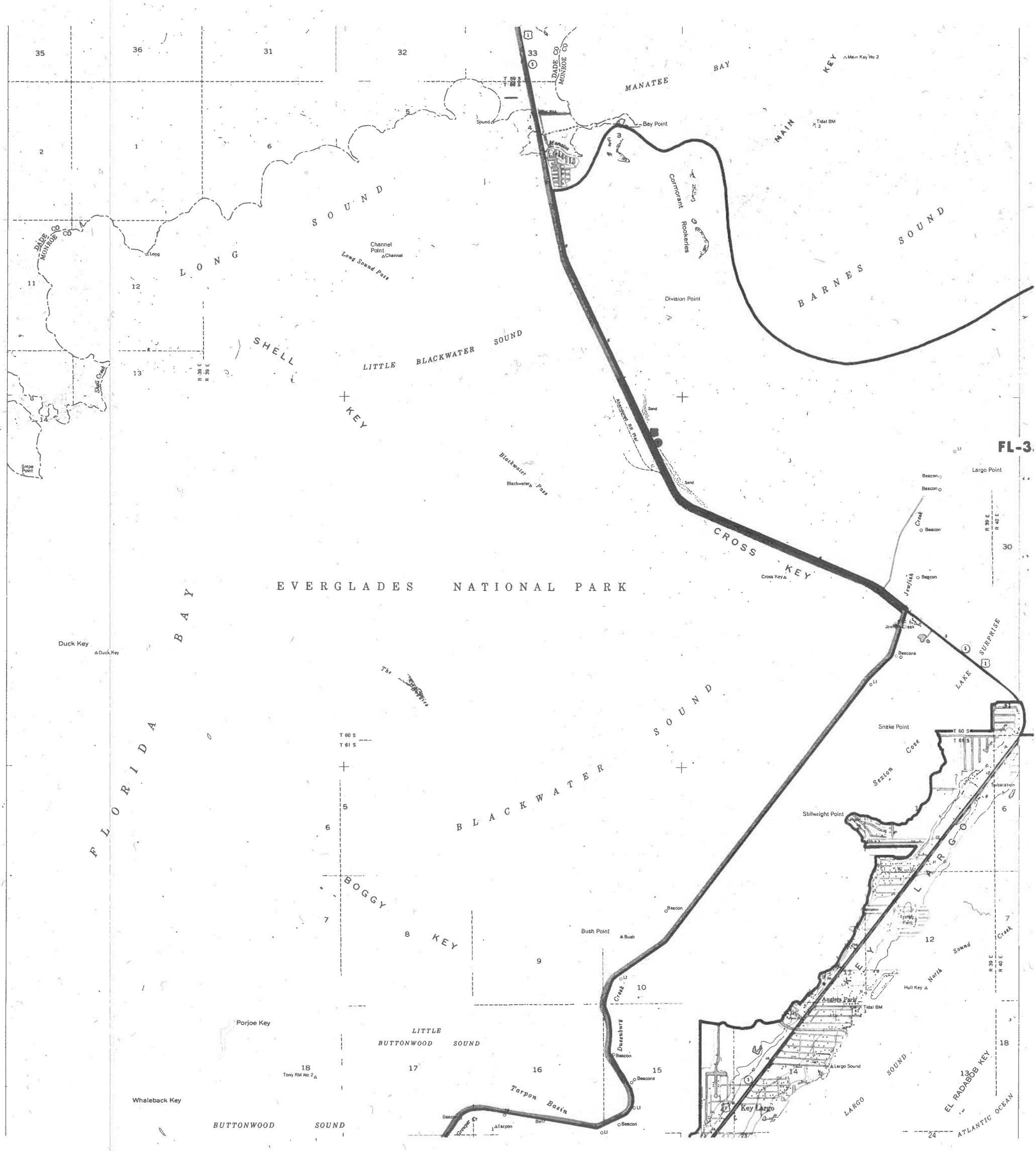

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FEBRUARY 1986

QUADRANGLE
BLACKWATER SOUND
FLORIDA

SCALE
1 1/2 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 5 0 1 KILOMETER

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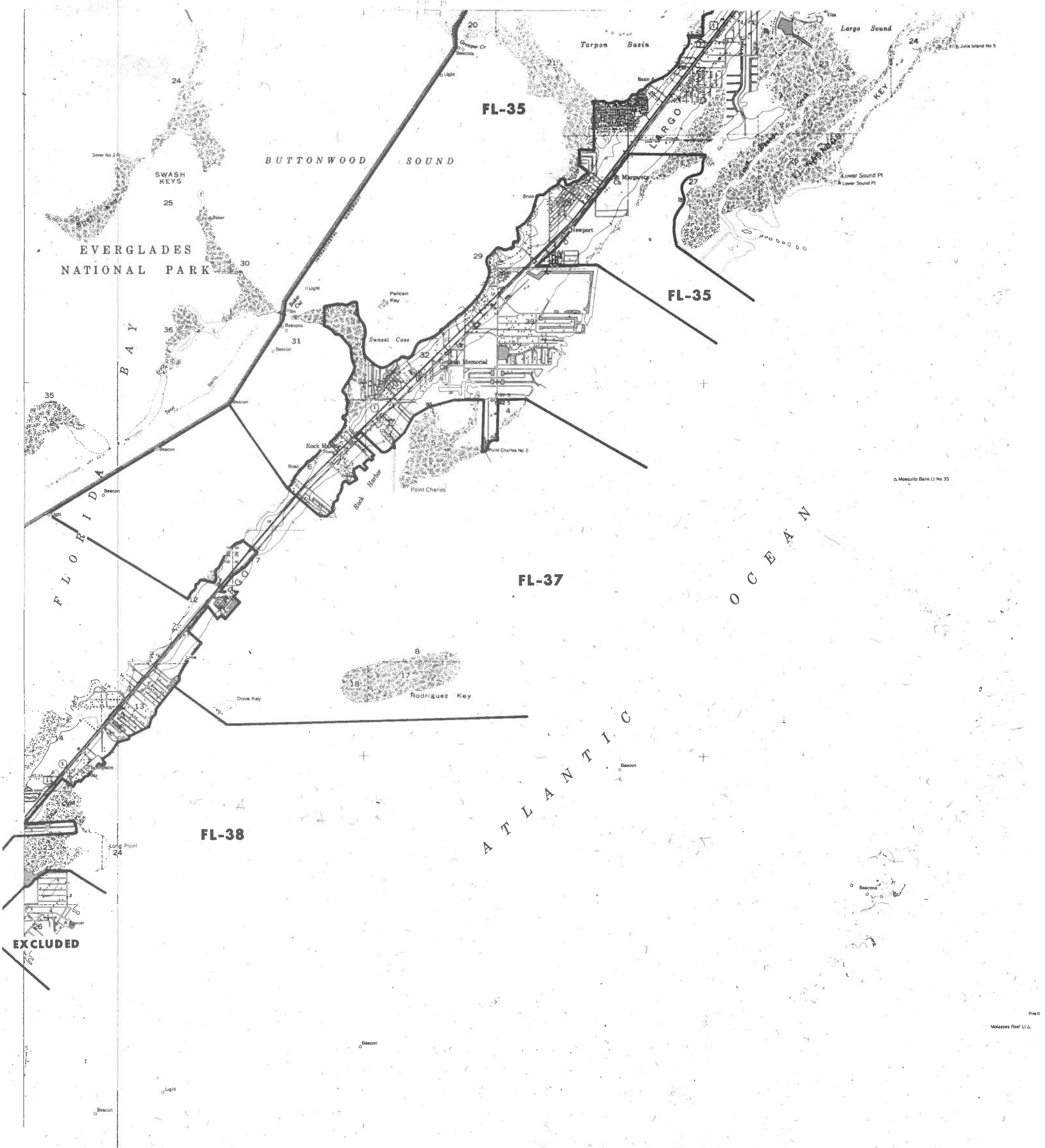

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QUADRANGLE
ROCK HARBOR
FLORIDA

SCALE
1 1/2 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 5 0 1 KILOMETER

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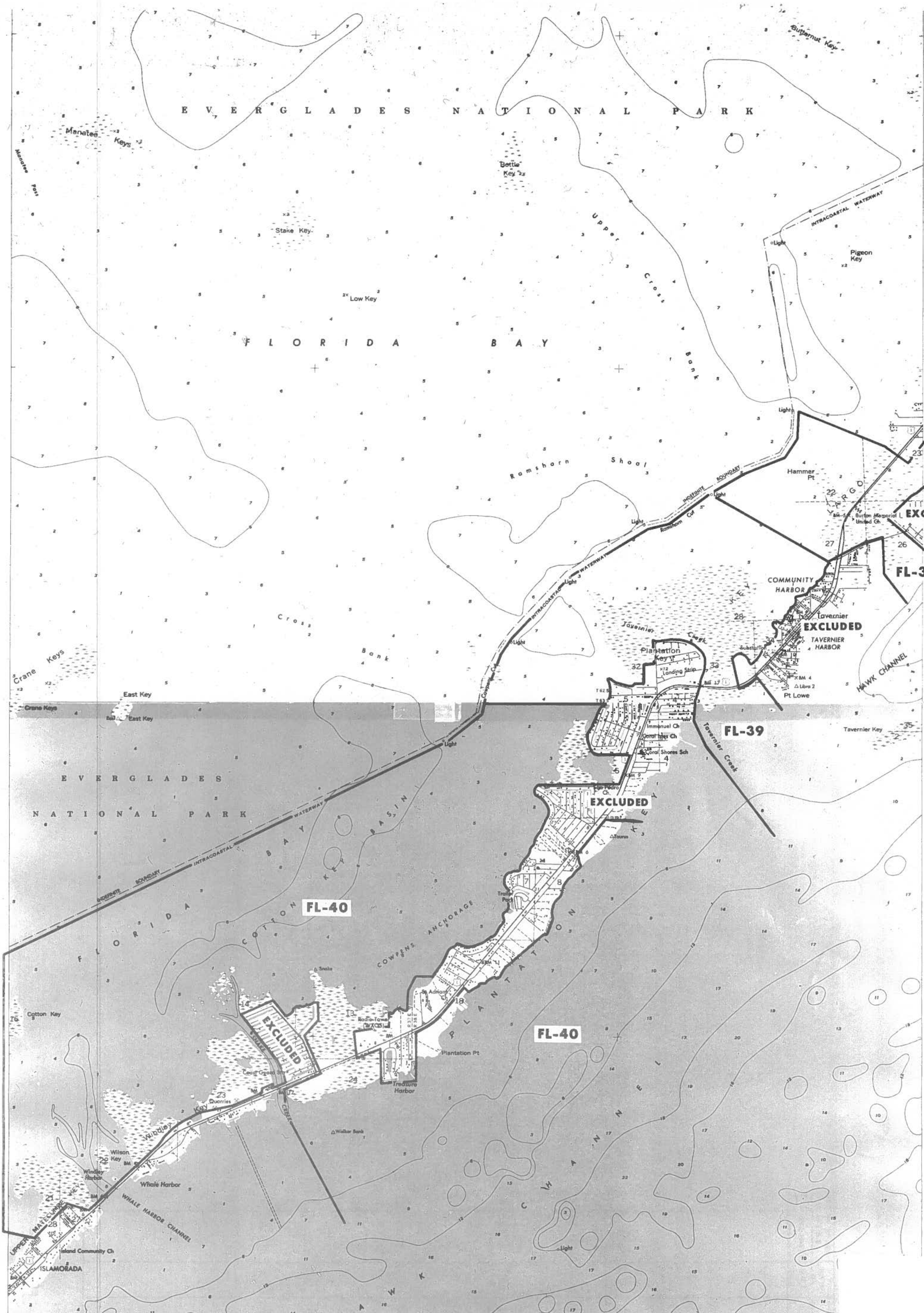

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North

QUADRANGLE
PLANATION KEY
FLORIDA

SCALE
1 1/2 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 .5 0 1 KILOMETER

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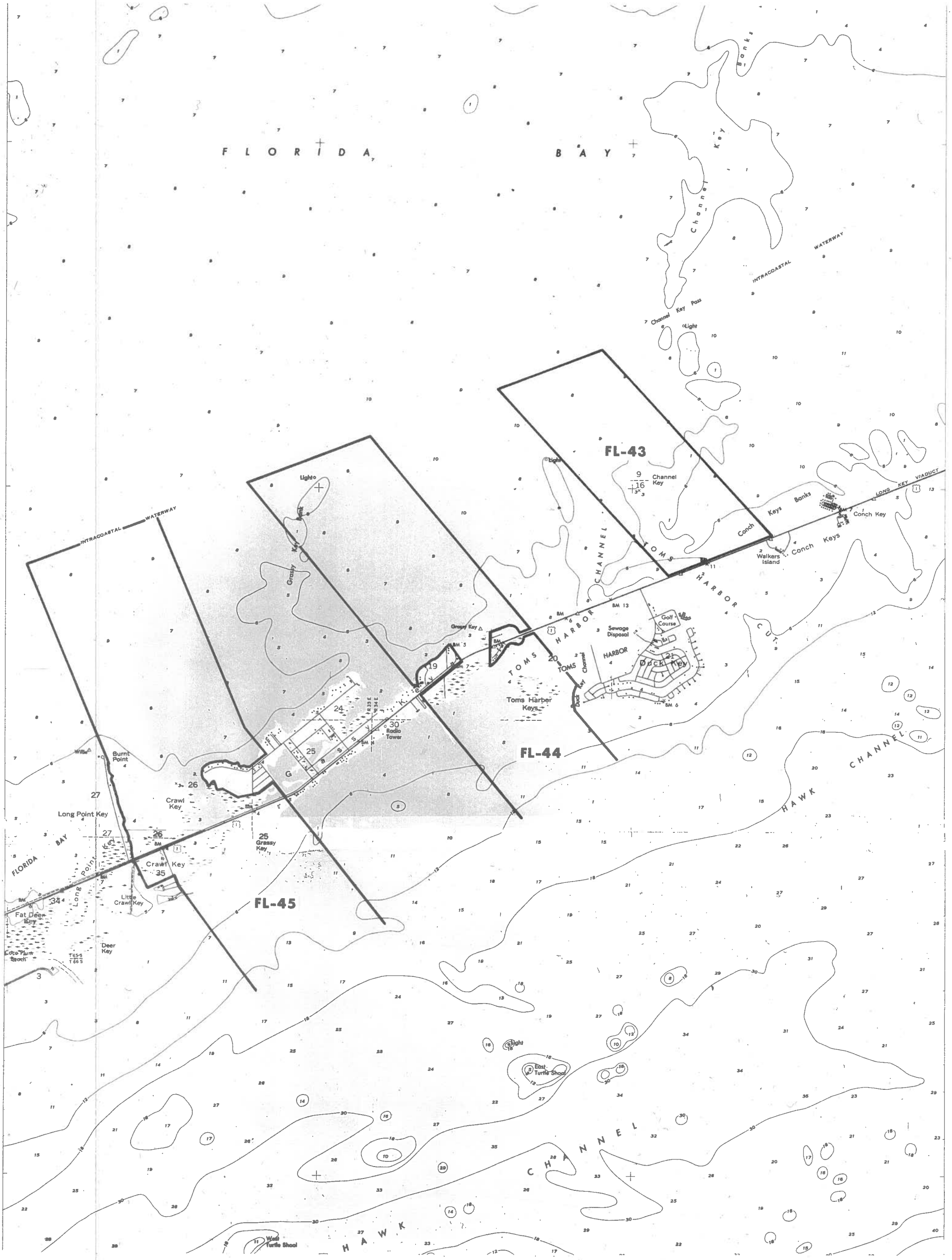

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QUADRANGLE
GRASSY KEY
FLORIDA

SCALE
1 1/2 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 5 0 1 KILOMETER

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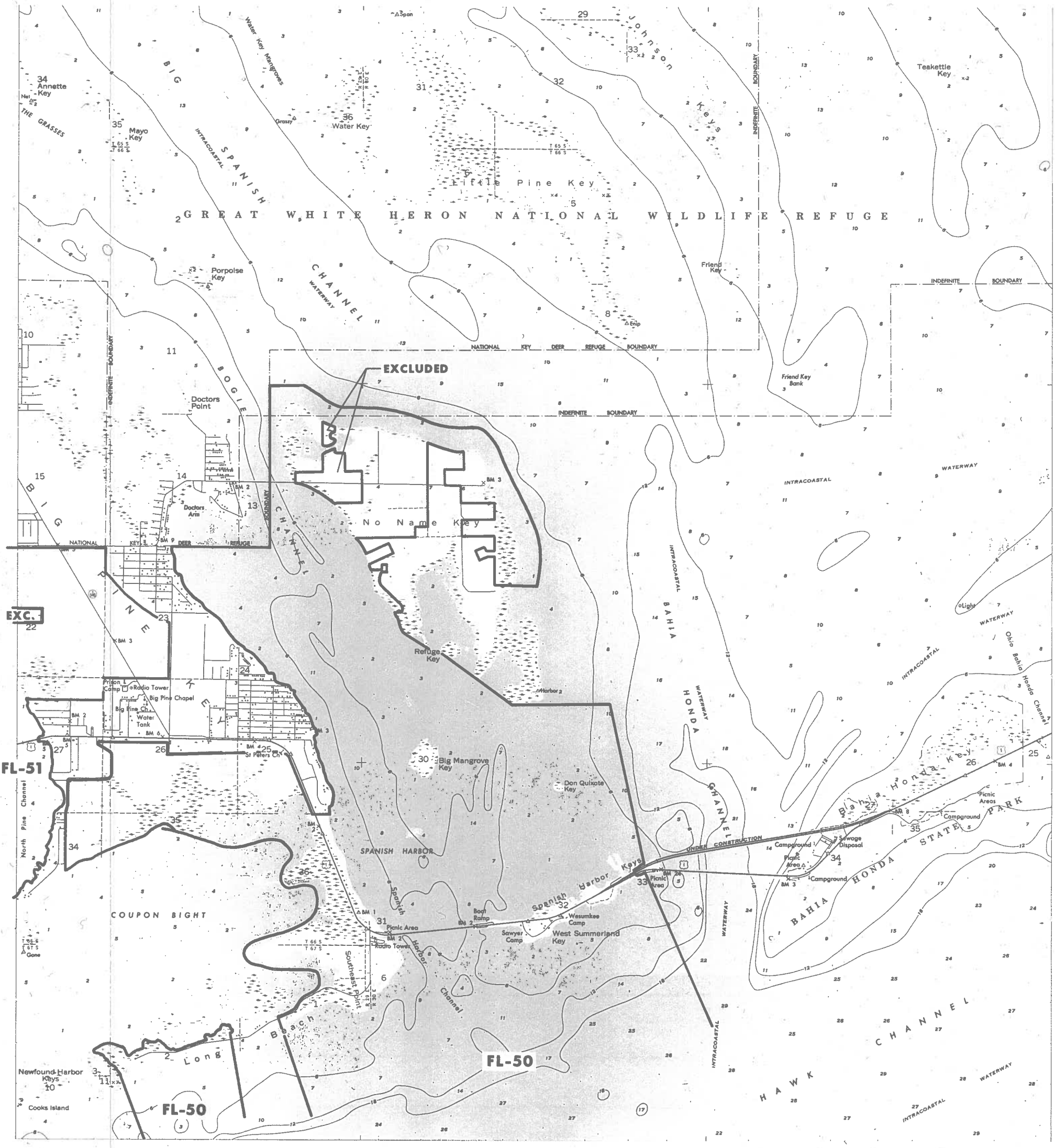

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FEBRUARY 1966

QUADRANGLE
BIG PINE KEY
FLORIDA

SCALE
1 1/2 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 5 0 1 KILOMETER

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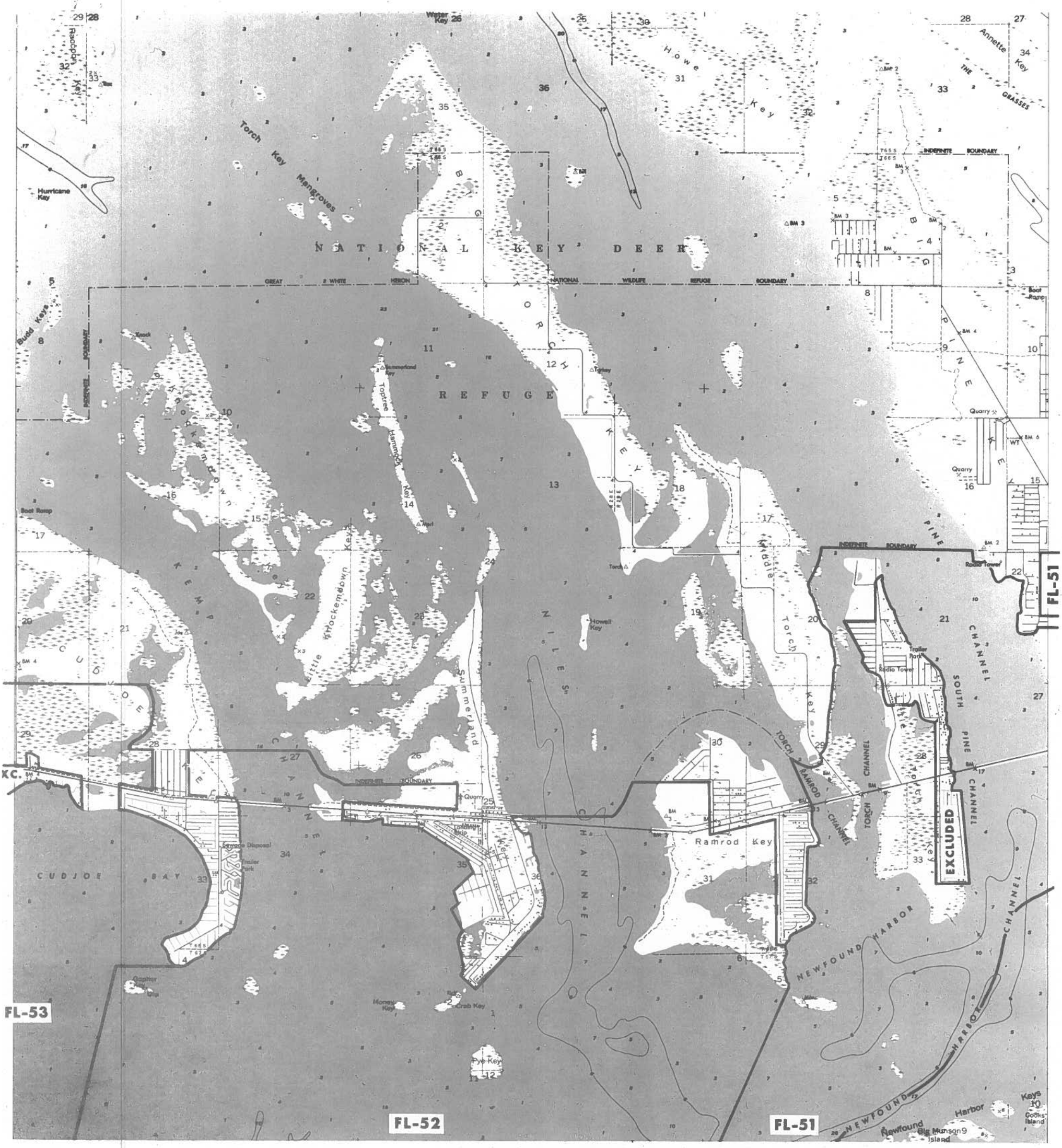

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QUADRANGLE
SUMMERLAND KEY
FLORIDA

SCALE
1 1/2 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 5 0 1 KILOMETER

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QUADRANGLE
SUGARLOAF KEY
FLORIDA

SCALE
1 1/2 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 5 0 1 KILOMETER

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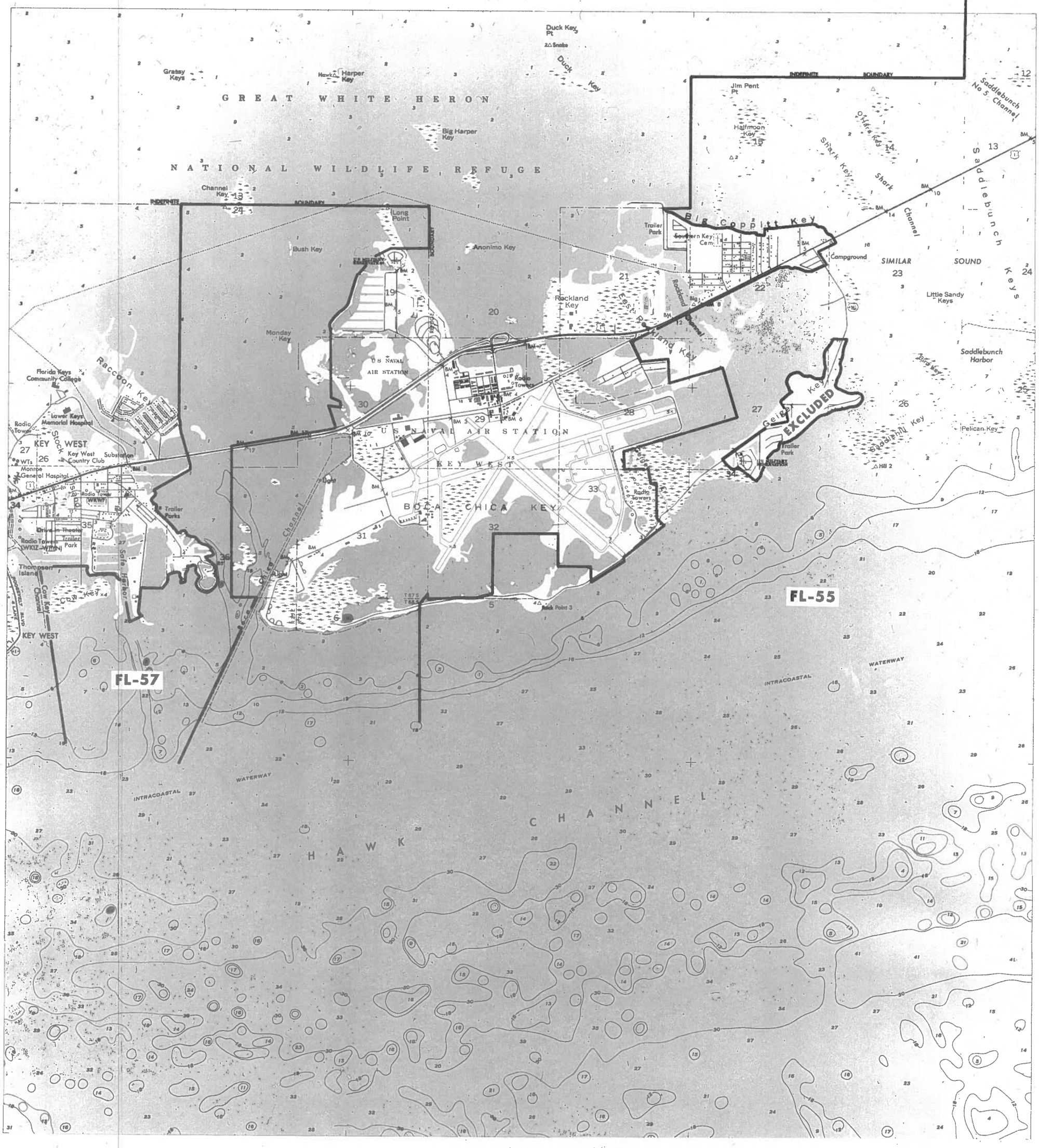

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QUADRANGLE
BOCA CHICA KEY
FLORIDA

SCALE
1 1/2 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 5 0 1 KILOMETER

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