

# Coral Reef Habitat Assessment for U.S. Marine Protected Areas: State of Florida: Dry Tortugas to Biscayne Bay

National Oceanic and Atmospheric Administration  
NOAA's National Ocean Service  
Management & Budget Office  
Special Projects



February 2009



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## Project Overview

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### About this Effort

The United States Coral Reef Task Force (USCRTF), in both its National Action Plan to Conserve Coral Reefs (2000) and its National Coral Reef Action Strategy (2002), established a key conservation objective of protecting at least 20% of U.S. coral reefs and associated habitat types in no-take marine reserves. NOAA's Coral Reef Conservation Program has been supporting efforts to assess current protection levels of coral reefs within Marine Protected Areas (MPAs) and quantify the area of U.S. coral reef ecosystems protected in no-take reserves. The official federal definition of an MPA, signed into law by Executive Order 13158, is "any area of the marine environment that has been reserved by federal, state, tribal, territorial, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein." A significant source of information for these assessments has been the National MPA Center's Inventory of Marine Managed Areas (MMAs) in the U.S (2006a)<sup>1</sup>. This report provides a preliminary assessment of the areal extent of coral reef habitat and associated habitat types within MPAs, as well as the level of protection afforded them, by using GIS-based MPA boundaries from the MMA Inventory–MPA Classification System (2006a,b), and U.S. Coral Jurisdiction benthic habitat data developed by the Florida Marine Research Institute and NOAA's National Centers for Coastal Ocean Science Biogeography Team (FMRI 2000).

More information on the state and territory sites included in this assessment, including their goals and objectives and how they are established and managed is available in the NOAA Coral Reef Conservation Program Technical Memorandum, *Report on the Status of Marine Protected Areas in Coral Reef Ecosystems of the United States: Volume 1 Marine Protected Areas Managed by U.S. States, Territories and Commonwealths* (Wusinich-Mendez, D and C. Trappe. 2007). This document (pdf, 5.26 MB) is available for download at <http://www.coralreef.noaa.gov/Library/Publications/cr%5Fmpa%5Freport%5Fvol%5F1.pdf>.

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<sup>1</sup> Data for the MMA Inventory were collected by many individuals from a variety of sources. As a result, the content and level of detail of the overview text may vary from site to site.

### NCCOS Habitat Mapping Effort

The National Oceanic and Atmospheric Administration (NOAA) National Ocean Service (NOS) initiated a coral reef research program in 1999 to map, assess, inventory, and monitor U.S. coral reef ecosystems (Monaco et al. 2001). These activities were implemented in response to requirements outlined in the Mapping Implementation Plan developed by the Mapping and Information Synthesis Working Group (MISWG) of the Coral Reef Task Force (CRTF) (MISWG 1999). NOS's National Centers for Coastal Ocean Science (NCCOS) Biogeography Team was charged with the development and implementation of a plan to produce comprehensive digital coral-reef ecosystem maps for all U.S. States, Territories, and Commonwealths within five to seven years. In response to Executive Order 13089 and the Coral Reef Conservation Act of 2000, NOS is conducting research to digitally map biotic resources and coordinate a long-term monitoring program that can detect and predict change in U.S. coral reefs and their associated habitats and biological communities (Monaco et al. 2001).

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## Acknowledgments

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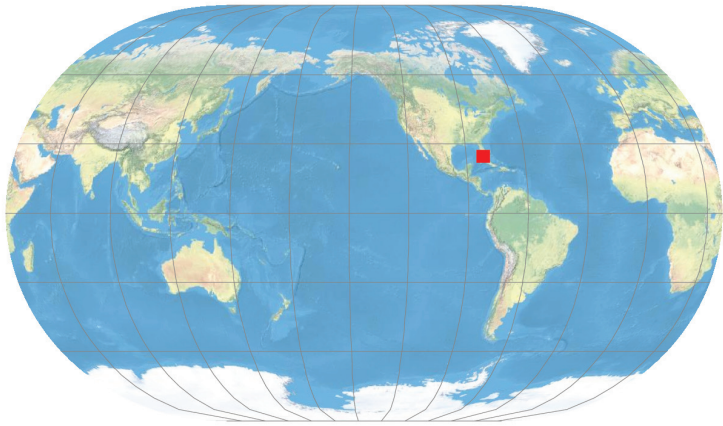
Florida / Department of Environmental Protection  
Florida / Fish and Wildlife Conservation Commission

National Park Service  
NOAA / Coral Reef Conservation Program  
NOAA / National Marine Fisheries Service  
NOAA / National Marine Sanctuary Program  
NOAA / NOS / Special Projects  
NOAA / NOS / NCCOS / Biogeography Team  
NOAA / NOS / Ocean and Coastal Resource Management  
NOAA / NOS / National Marine Protected Areas Center  
U.S. Fish and Wildlife Service






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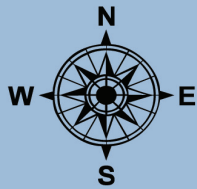
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Global Extent

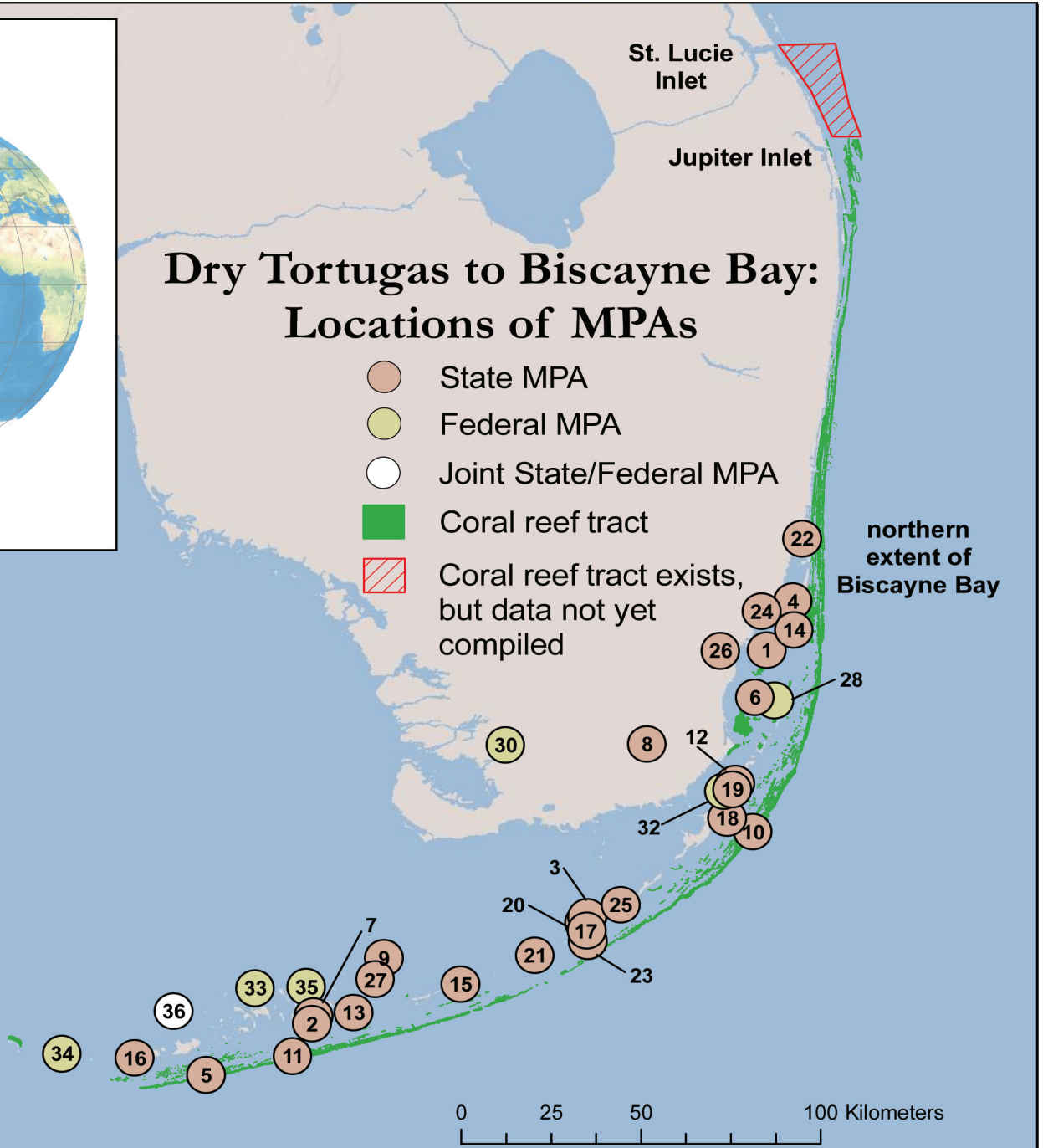
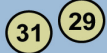


Dry Tortugas to Biscayne Bay:  
Locations of MPAs

-  State MPA
-  Federal MPA
-  Joint State/Federal MPA
-  Coral reef tract
-  Coral reef tract exists, but data not yet compiled



Dry  
Tortugas



Note: MPA numbers correspond to list in table of contents.

# Florida: Dry Tortugas to Biscayne Bay

## Introduction

Florida is the only state in the continental United States with shallow coral reef formations near its coastline. The Florida reef tract stretches from the Dry Tortugas, west of Key West, to the Saint Lucie Inlet in Martin County, an extension of approximately 530 km. Rohmann et al. (2005) estimate that 30,801 sq. km of Florida's nearshore shallow waters may support coral reef resources. The development of these reefs is attributed to Florida's broad, shallow continental shelf and the Gulf Stream, which carries flora, fauna and warm waters to the area. Florida's primary coral habitats include patch reefs, bank reefs, and hardbottom communities (Trappe and Bareford 2007).

Currently, there are 94 MPAs<sup>1</sup> established along the Florida reef tract. Fifty-nine (59) of these sites are included in this assessment. In some cases, there are areas called Outstanding Florida Waters (OFW) that have been designated in conjunction with other MPAs, resulting in some geographic areas that have two separate MPA designations. As a result, these 59 MPA sites fall within 36 geographically distinct areas that have been identified in this assessment (see map on page 1). Thirteen (13) of these sites have been designated as No-take areas (Appendix B and D)<sup>2</sup>. No-take MPAs allow human access and even some potentially harmful uses, but totally prohibit the extraction or significant destruction of natural or cultural resources.

The table below shows the total area of each biological benthic cover type: 1) for the Florida reef tract from the Dry Tortugas to Biscayne Bay, 2) for all MPAs in this segment of the reef tract, and 3) for only No-take MPAs in this segment of the reef tract. The percentages of the mapped benthic habitat within Florida's MPAs and

<sup>1</sup> Benthic habitat data was not available for 35 MPAs (Appendix D).

<sup>2</sup> In this report, "No-take" MPAs are MPAs that have one of the following "Levels of Protection" under the U.S. MPA Classification System: 1) No Take, 2) No Impact, 3) No Access, or 4) Zoned Multiple-Use With No-Take Area(s). Out of 12 'Zoned Multiple-Use With No-Take Areas' in the U.S. Coral Jurisdictions only 4 had delineated No-take zones and thus were the only sites from this category to be included in the "No-take" calculations: East End Marine Park (VI), Kealakekua Bay MLCD (HI), Lapakahi MLCD (HI), and Molokini Shoal MLCD (HI)

Benthic Cover Type	Total Mapped Benthic Habitat (km <sup>2</sup> )	Total Mapped within All MPAs (km <sup>2</sup> )	Percent of Mapped Area within all MPAs	Total Mapped within No-take MPAs (km <sup>2</sup> )	Percent of Mapped Area within No-take MPAs
Coral Reef / Colonized Hardbottom	369.780	365.507	98.84%	3.728	1.01%
Macroalgae	6.799	6.793	99.91%	4.564	67.13%
Seagrass	5,739.400	5,735.752	99.94%	439.618	7.66%
Unclassified	6,799.729	6,799.383	99.99%	124.349	1.83%
Uncolonized	190.086	189.482	99.68%	1.653	0.87%
Unknown	7,454.085	7,409.272	99.40%	370.310	4.97%
<b>Coral Reef Ecosystem*</b>	<b>6,115.979</b>	<b>6,108.052</b>	<b>99.87%</b>	<b>447.910</b>	<b>7.32%</b>

\* Coral Reef Ecosystem is defined as mapped coral reef / colonized hardbottom, macroalgae, and seagrass.

Florida's No-take MPAs are also listed. Nearly 100% of the 6,116 square kilometers of mapped coral reef ecosystem (defined below) in this segment of the Florida reef tract is within MPAs and 7% is within No-take MPAs. To view the totals for each individual site, see Appendix C. As stated above, the Florida reef tract runs from the Dry Tortugas to the St. Lucie Inlet in Martin County. This assessment includes approximately the southern 70% of the full extent of the reef tract from the Dry Tortugas to Biscayne Bay.

Data limitations on benthic characteristics in the State of Florida precluded the type of analysis that was possible for the other six coral jurisdictions. Accurate data were available for the portion of the Florida reef tract from the Dry Tortugas to Biscayne Bay, and were used in the analysis. Complete data were not available for the Florida Reef tract north of Biscayne Bay, and so the area covered by the Southeast Florida Coral Reef Initiative was excluded from this analysis. A total of 35 MPAs in Florida were not included in this assessment because of data limitations (Appendix D). The results as presented are accurate for the portion of Florida's reefs from the Dry Tortugas to Biscayne Bay.

## Cover Types and Characterization

<i>Coral reef / Colonized Hardbottom</i>	Substrates formed by the deposition of calcium carbonate by reef building corals and other organisms. Habitats within this category have some colonization by live coral, unlike the Uncolonized Hardbottom category.
<i>Macroalgae</i>	Substrates with 10% or greater coverage of any combination of numerous species of red, green, or brown macroalgae. Usually occurs in shallow backreef and deeper waters on the bank/shelf zone.
<i>Seagrass</i>	Habitat with 10% or more of seagrass.
<i>Unclassified</i>	Areas differentiated from other biological cover types because the major geomorphological structure is primarily terrestrial or artificially created (i.e., artificial).
<i>Uncolonized</i>	Substrates not covered with a minimum of 10% of any of the above biological cover types. This habitat is usually on sand or mud structures. Overall uncolonized cover is estimated at 90%-100% of the bottom.
<i>Unknown</i>	Cover uninterpretable due to turbidity, cloud cover, water depth, etc.

# Florida: Dry Tortugas to Biscayne Bay

## Methods

The Coral Reef Habitat Assessment for U.S. Marine Protected Areas in Florida (Dry Tortugas to Biscayne Bay) was conducted between August 2005 and August 2007 through the following actions:

1. *Created a Coral Jurisdiction MPA GIS Database utilizing the U.S. Marine Managed Areas Inventory*

The Marine Managed Areas (MMA) Inventory contains information on more than 1,500 sites, and is the only such comprehensive dataset in the nation. The term “marine managed area,” which was defined through a public comment process, generally refers broadly to an area of the marine environment with a marine resource conservation purpose.

The MMA Inventory data collection is a joint collaboration between the National Oceanic and Atmospheric Administration (NOAA) and the Department of the Interior that began in 2001. Its purpose is to gather and make publicly available comprehensive information on place-based marine conservation efforts under U.S. federal, state, territorial, local, and tribal jurisdiction. For more information on the MMA Inventory, visit [http://www.mpa.gov/helpful\\_resources/inventory.html](http://www.mpa.gov/helpful_resources/inventory.html).

2. *Identified which MPAs are No-Take Reserves utilizing the MPA Classification System*

The National Marine Protected Areas Center has developed a Classification System that provides agencies and stakeholders with a straightforward means to describe MPAs in purely functional terms using five objective characteristics common to most MPAs:

Conservation Focus – legally established goals, conservation objectives and intended purpose(s).

Level of Protection – level and type of legal protections afforded to the site’s natural and cultural resources and ecological processes.

Permanence of Protection – length of time protections remain in effect.

Constancy of Protection – year-round, seasonal or rotating.

Ecological Scale of Protection – range from entire ecosystems and their associated biophysical processes, to focal habitats, species, or other resources deemed to be of economic or ecological importance.

For most MPAs in the U.S. and elsewhere, these five functional characteristics provide an accurate picture of why the site was established, what it is intended to protect, how it achieves that protection, and how it may affect local ecosystems and local human uses.

3. *Used GIS software to identify area of spatial overlap between benthic habitat data and Coral Jurisdiction MPA boundaries*

The National Oceanic and Atmospheric Administration (NOAA) National Ocean Service (NOS) initiated a coral reef research program in 1999 to map, assess, inventory, and monitor U.S. coral reef ecosystems (Monaco et al. 2001). These activities were implemented in response to requirements outlined in the Mapping Implementation Plan developed by the Mapping and Information Synthesis Working Group (MISWG) of the Coral Reef Task Force (CRTF) (MISWG 1999). NOS’s Biogeography Team was charged with the development and implementation of a plan to produce comprehensive digital coral-reef ecosystem maps for all U.S. States, Territories, and Commonwealths within five to seven years. In response to Executive Order 13089 and the Coral Reef Conservation Act of 2000, NOS is conducting research to digitally map biotic resources and coordinate a long-term monitoring program that can detect and predict change in U.S. coral reefs and their associated habitats and biological communities. For more information on benthic habitat data produced by the NOS Biogeography Team, visit [http://ccma.nos.noaa.gov/about/biogeography/proj\\_theme.html](http://ccma.nos.noaa.gov/about/biogeography/proj_theme.html).

4. *Calculated areal extent of benthic habitat data within Coral Jurisdiction MPA GIS boundaries*

The areal extent of benthic habitat data within MPAs was calculated in the Eckert IV WGS84 projection, using the polygon area calculation operation in XTools Pro 3.2.0 extension for ArcMap™ 9.1 GIS software.

# Biscayne Bay Aquatic Preserve & OFW

Management Agency: Florida Department of Environmental Protection

## Overview

Biscayne Bay is a shallow, subtropical lagoon along the southeastern coast of Florida, in Miami–Dade and Monroe Counties. The Bay is elongated in shape, and located in a north/south trending direction on the southeastern coast of the Florida peninsula. Biscayne Bay Aquatic Preserve consists of two separate areas of the Bay, one occupying the northern part of the Bay, and the other occupying the southern portion. The two areas are separated by Biscayne National Park, an underwater park which occupies the central portion of the Bay.

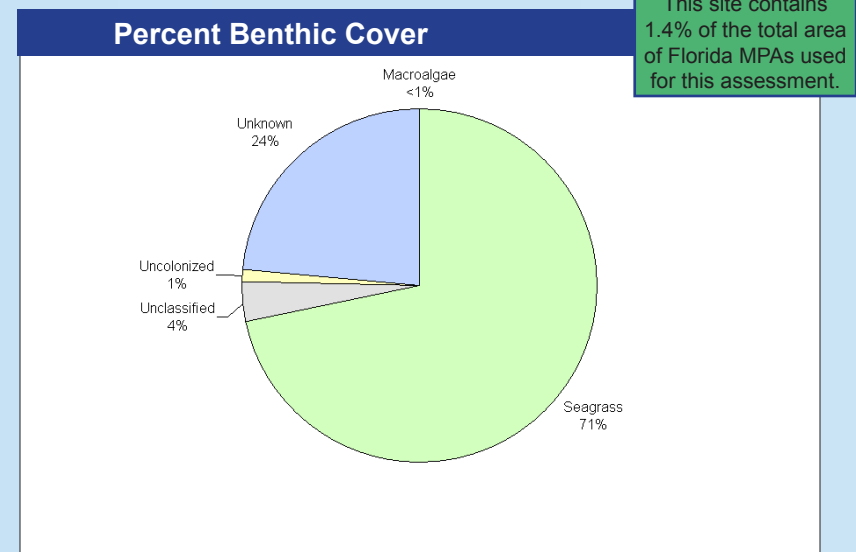
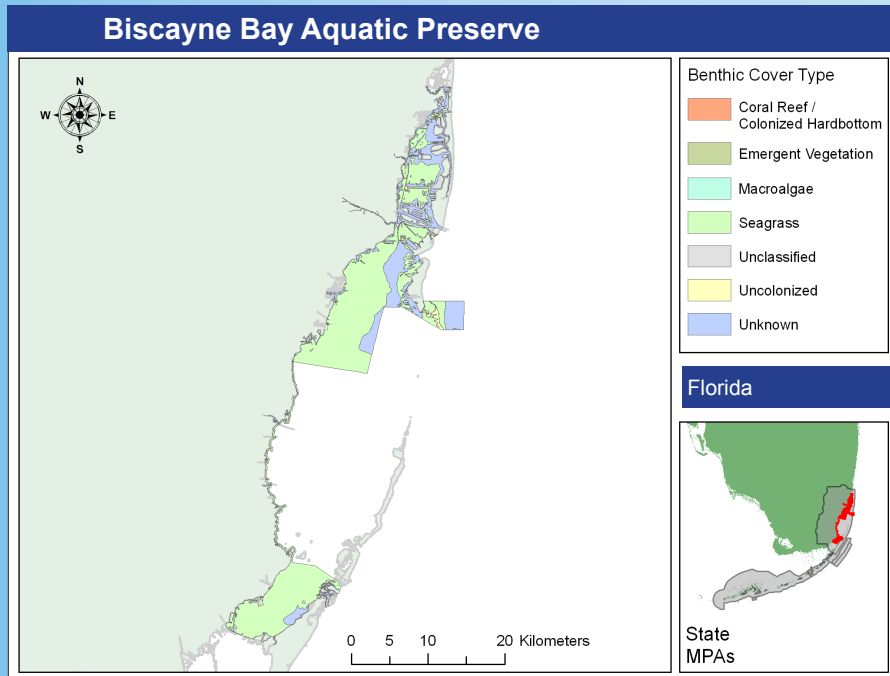
The northern part of the preserve is bordered on the east by the barrier islands of Miami Beach, Fisher Island, Virginia Key, and Key Biscayne and on the west by the predominantly residentially developed mainland shore and the Miami central business district. The southern part of the preserve consists primarily of Card Sound, located between the southeast mainland

of Florida and the northern end of Key Largo, in Miami–Dade and Monroe counties.

The Biscayne Bay Aquatic Preserve was designated an aquatic preserve by the Governor and Cabinet for the primary purpose of preserving the biological resources in the bay and maintaining them in an essentially natural condition.



Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.





# Coupon Bight Aquatic Preserve & OFW

Management Agency: Florida Department of Environmental Protection

## Overview

Coupon Bight Aquatic Preserve is located in the lower half of the Florida Keys archipelago. All of the islands within the preserve are ringed by mangroves. The most extensive beach development runs along the Atlantic shoreline of Big Pine Key and the Newfound Harbor Keys. The coastal berm runs parallel to the beach and along the northern shore of Coupon Bight.

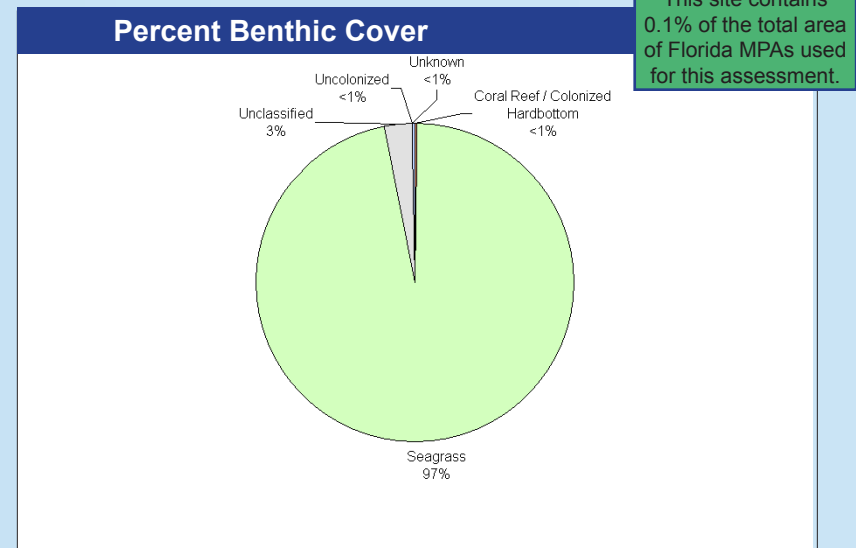
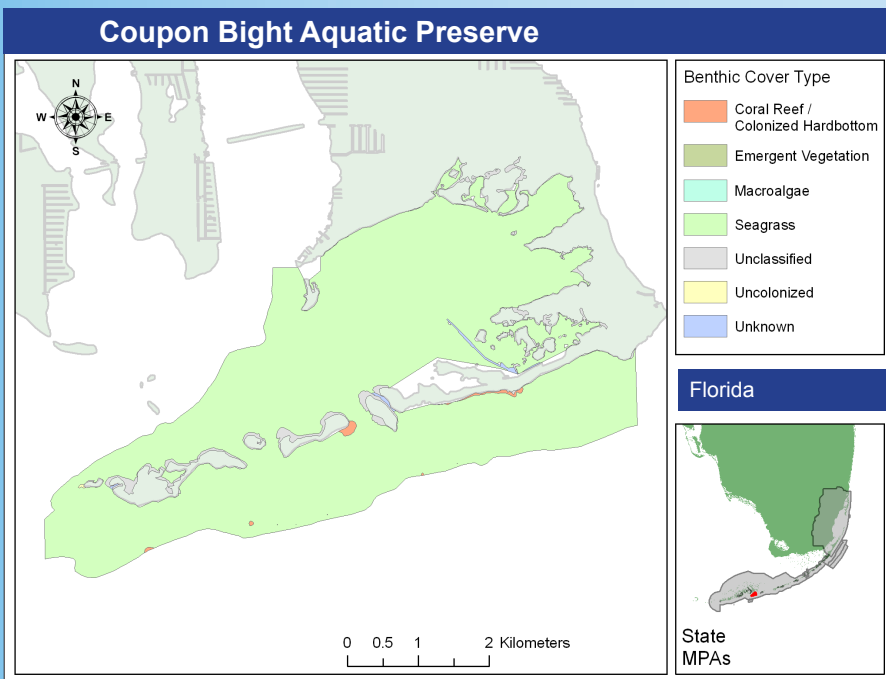
This preserve includes a sheltered tropical lagoon and open ocean environments which are separated by a chain of islands: the Newfound Harbor Keys. It is unique in the state system because within the clear, tropical waters are living coral reef communities.

Lying south of the main land mass of Big Pine Key, the preserve is bounded on the north and east by the extension of that land area and on the south

by the 12-foot depth contour in the Atlantic Ocean. The western boundary runs from the 12-foot Atlantic contour along the 6-foot depth contour of Newfound Harbour Channel in a northeasterly direction to the southwestern tip of Big Pine Key. The privately owned Newfound Harbor Keys lie between the interior waters of the Bight and the Atlantic portions of the preserve. Only state-owned submerged lands are included within the boundary.



Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



# Lignumvitae Key Aquatic Preserve & OFW

Management Agency: Florida Department of Environmental Protection

## Overview

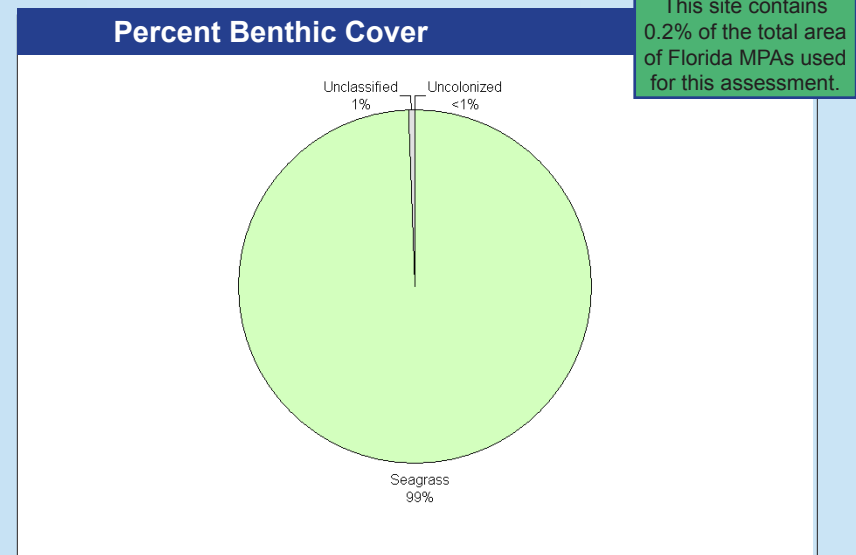
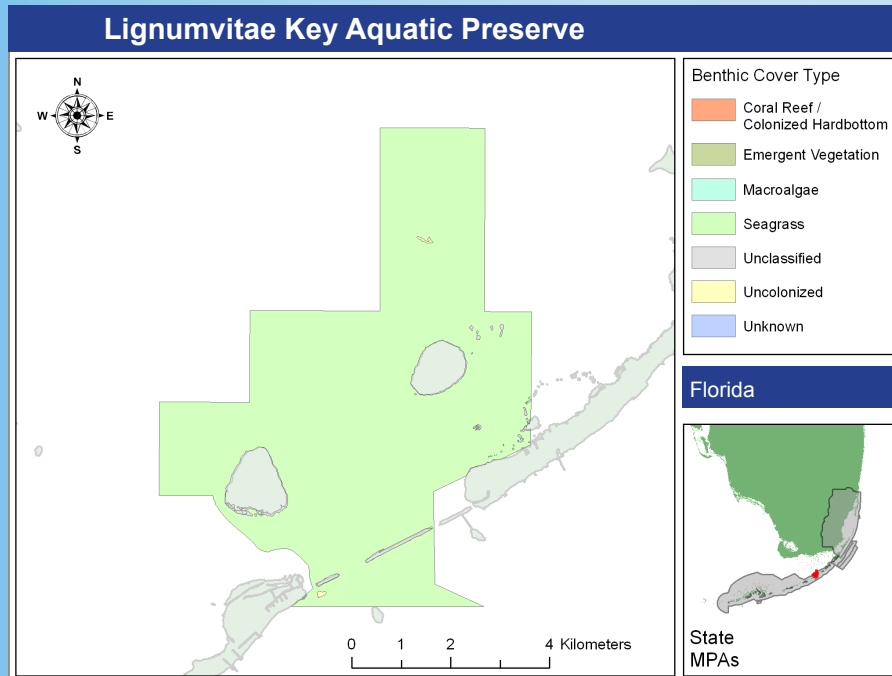
Lignumvitae Key Aquatic Preserve is located in the upper half of the Florida Keys archipelago. The predominant natural community of the preserve are the extensive seagrass beds. Mangroves surround the two islands and consolidated substrate (hard bottom), which can be found on the northern shore of Lignumvitae Key and along the northeastern boundary of the preserve.

The preserve encompasses expansive sea grassbeds, bisected by deep channels that exchange waters between Florida Bay and the Atlantic Ocean. Lobster, bonefish, tarpon, and permit are some of the important commercial and recreational marine species of the preserve.

Lying between the inhabited islands of the Upper and Lower Matacumbe Keys, the preserve is traversed from east to west by the U.S. 1 roadway

with a series of three bridges and a causeway, referred to locally as Indian Key Fill. Approximately four-fifths of the preserve areas lie north of the roadway.

Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



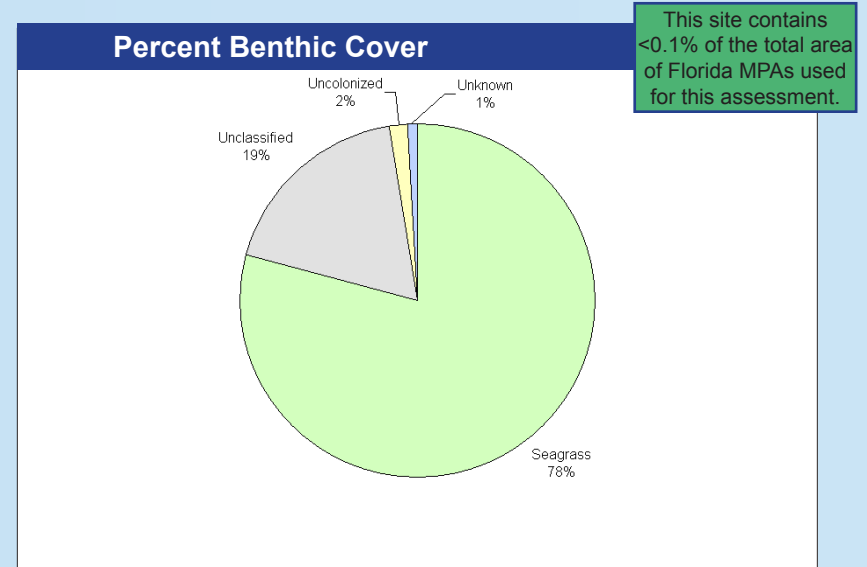
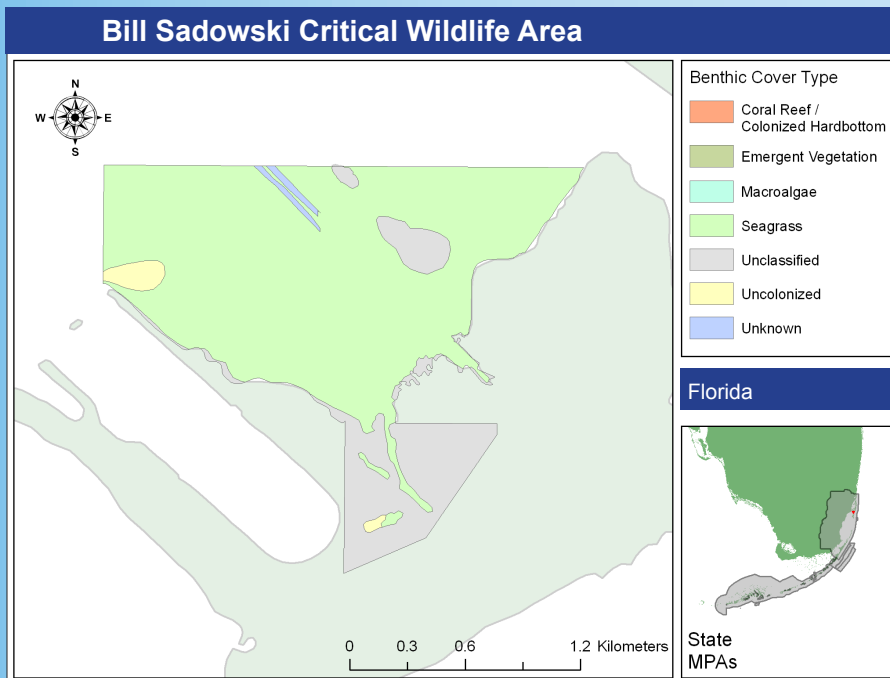
# Bill Sadowski Critical Wildlife Area

Management Agency: Florida Fish & Wildlife Conservation Commission

## Overview

Bill Sadowski Critical Wildlife Area is located in Miami–Dade County near Miami and Biscayne Bay. The site was established to protect critical habitats for birds that are in danger of extinction.

Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



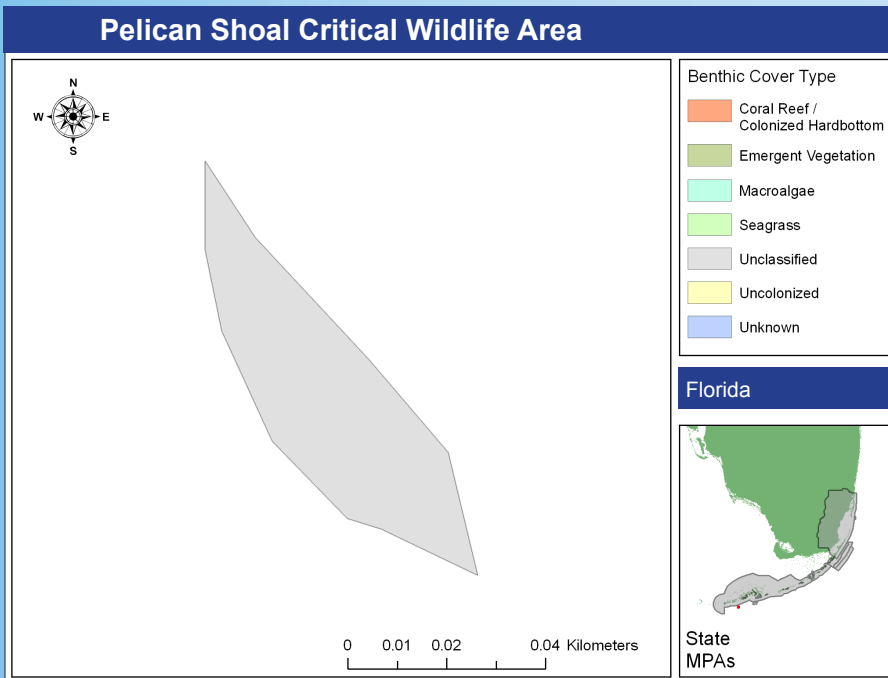
# Pelican Shoal Critical Wildlife Area

Management Agency: Florida Fish & Wildlife Conservation Commission

## Overview

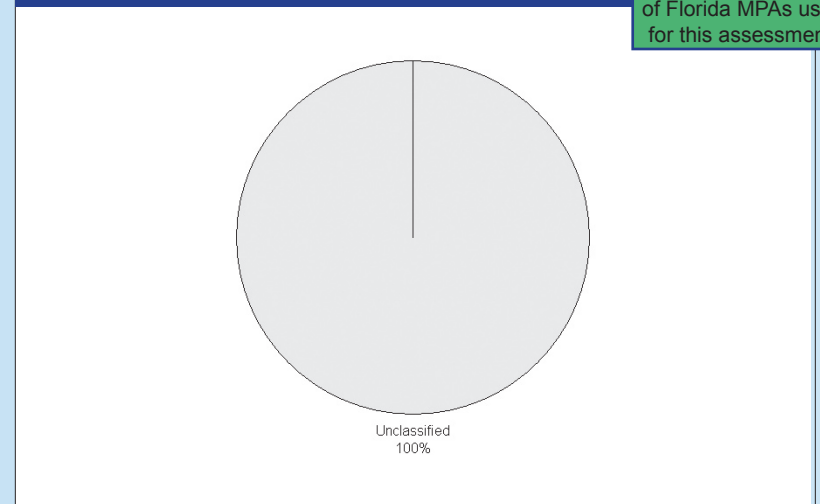
Pelican Shoal Critical Wildlife Area is located in the Straits of Florida in southern Monroe County, about five miles south-southeast of Boca Chica Key. This site was established to protect critical habitats for birds that are in danger of extinction, such as the Roseate Tern pictured on this page.

Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



## Percent Benthic Cover

This site contains <0.1% of the total area of Florida MPAs used for this assessment.



# Biscayne Bay–Card Sound Spiny Lobster Sanctuary

Management Agency: Florida Fish & Wildlife Conservation Commission

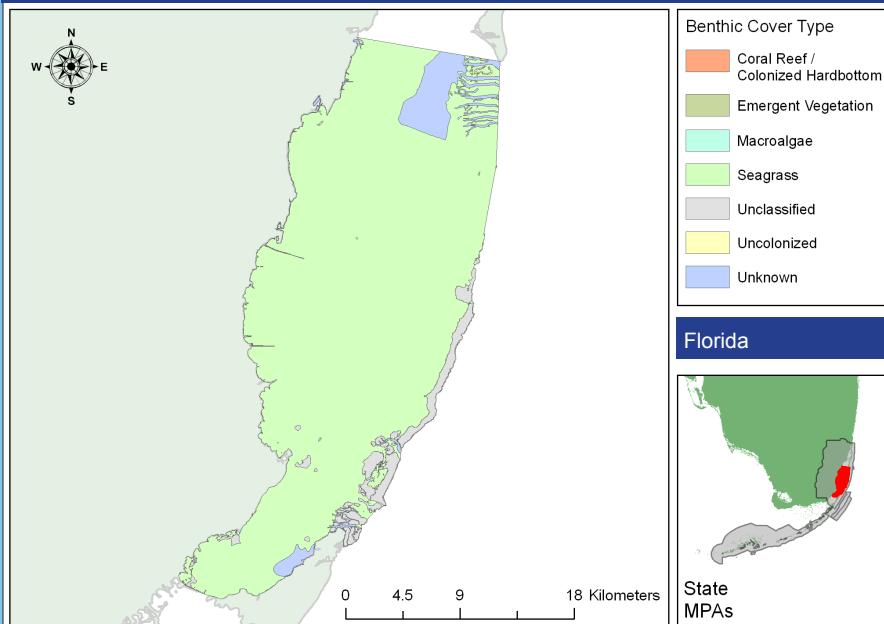
## Overview

Biscayne Bay–Card Sound Spiny Lobster Sanctuary includes the waters of Biscayne Bay, Card Sound, and Little Card Sound in Miami–Dade County. The site was established as a nursery sanctuary to protect spiny lobster.

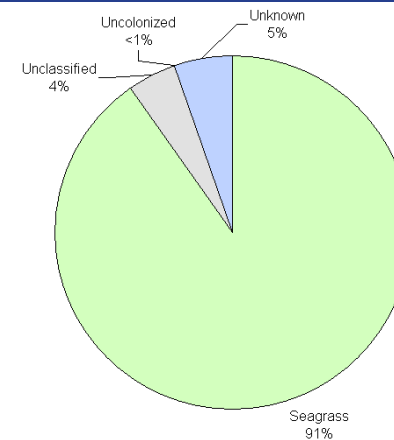
Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



## Biscayne Bay-Card Sound Spiny Lobster Sanctuary



## Percent Benthic Cover



This site contains 2.6% of the total area of Florida MPAs used for this assessment.

# Coupon Bight Outstanding Florida Water

Management Agency: Florida Department of Environmental Protection

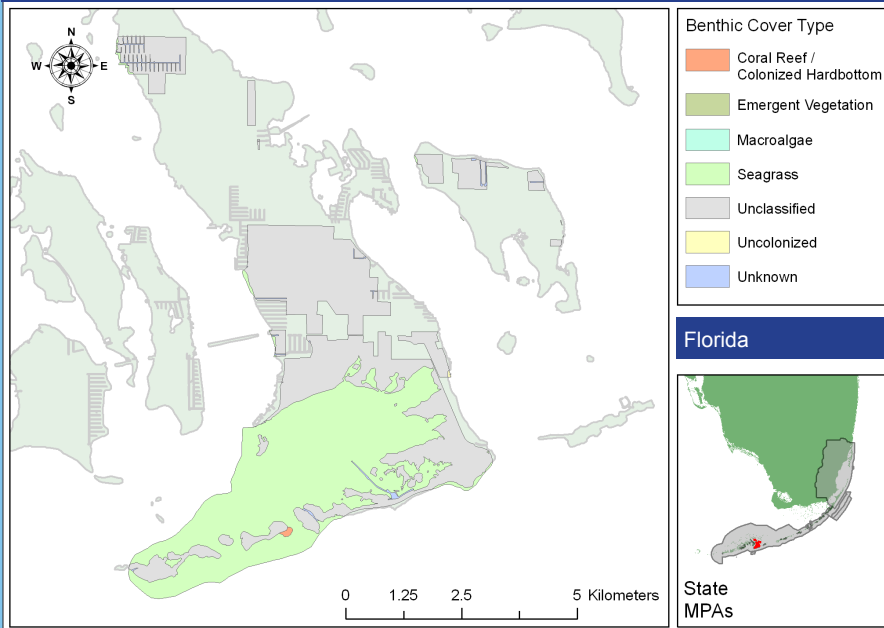
## Overview

Coupon Bight Outstanding Florida Water is located in the Florida Keys, south of Big Pine Key. The site was established to prevent the decline of existing water quality and contains coastal wetlands and submerged aquatic vegetation.

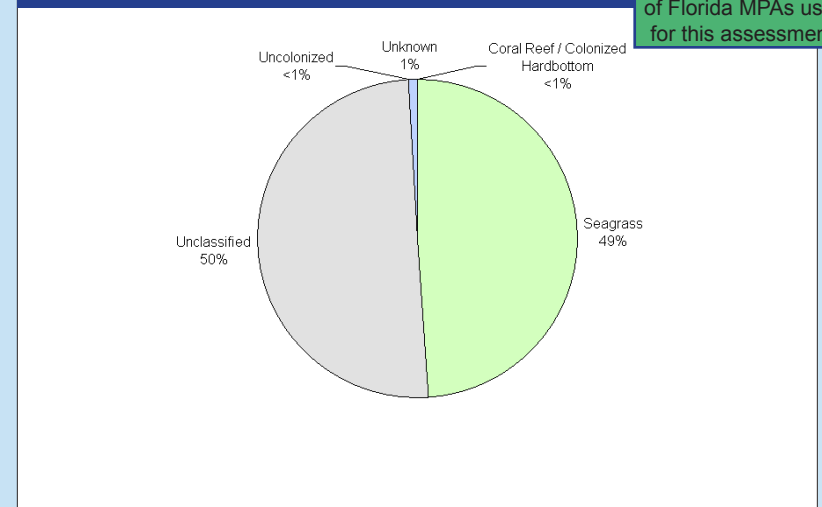
Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



## Coupon Bight Outstanding Florida Water



## Percent Benthic Cover



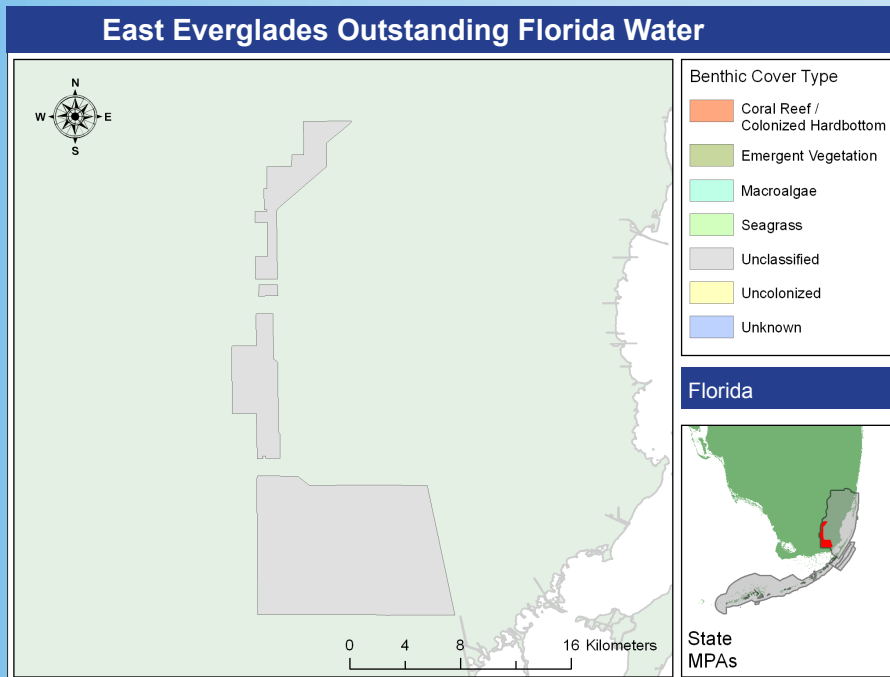
# East Everglades Outstanding Florida Water

Management Agency: Florida Department of Environmental Protection

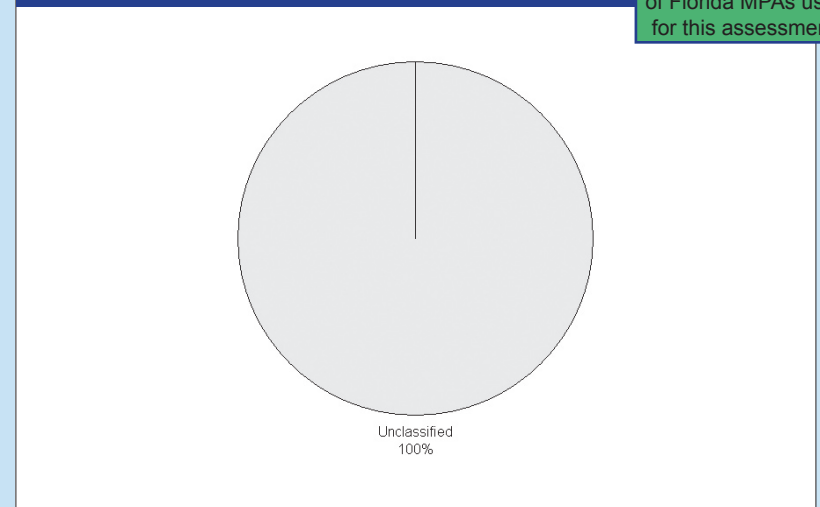
## Overview

East Everglades Outstanding Florida Water is located in Miami-Dade County, along the eastern border of Everglades National Park. The site was established to prevent the decline of existing water quality.

Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



## Percent Benthic Cover



This site contains 0.8% of the total area of Florida MPAs used for this assessment.

# Florida Keys Outstanding Florida Water

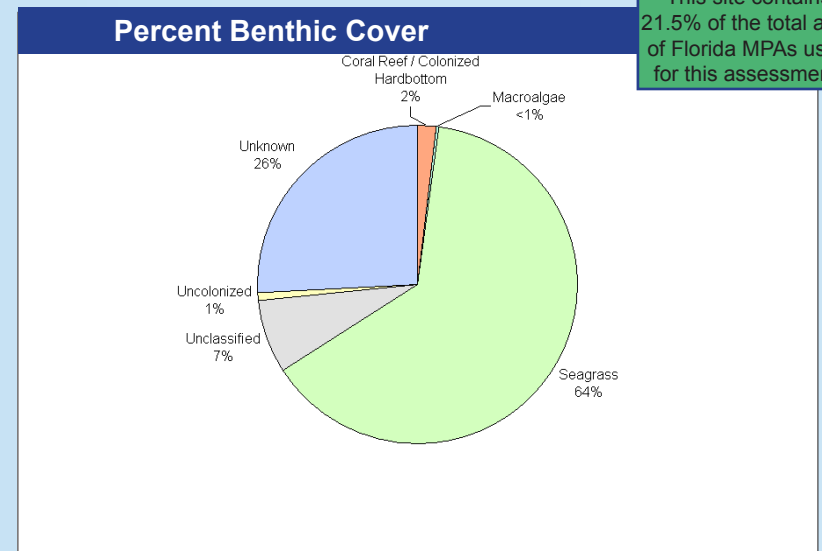
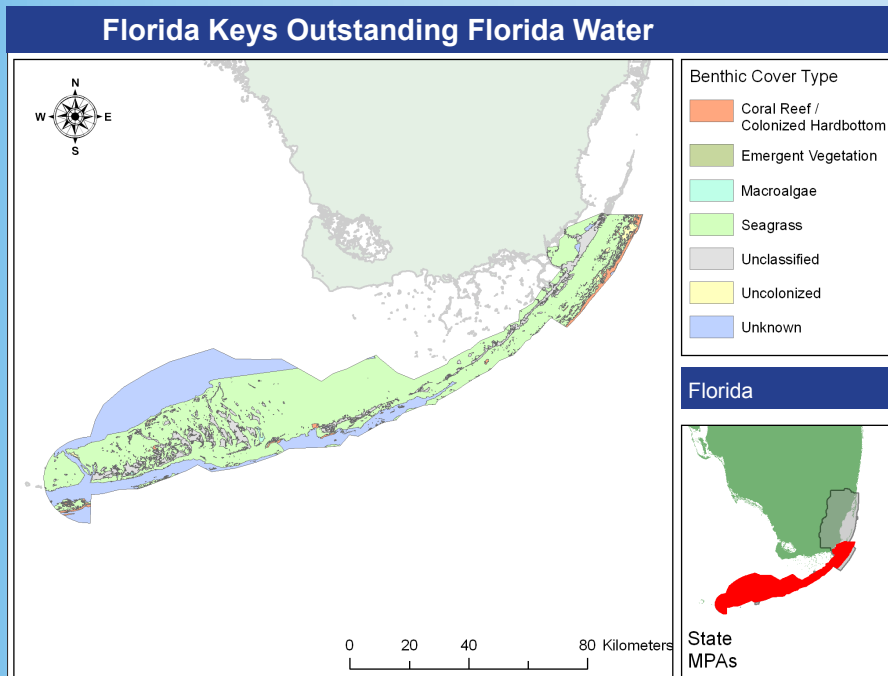
Management Agency: Florida Department of Environmental Protection

## Overview

Florida Keys Outstanding Florida Water extends throughout the Florida Keys archipelago. The site was established to prevent the decline of existing water quality.

The site contains diverse and productive hard bottom habitats composed of attached sponges, corals, algae, and invertebrates. The Florida Keys make up the third largest barrier coral reef ecosystem in the world, as well as one of the largest seagrass meadows in the world.

Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.





# Key Largo National Marine Sanctuary Outstanding Florida Water

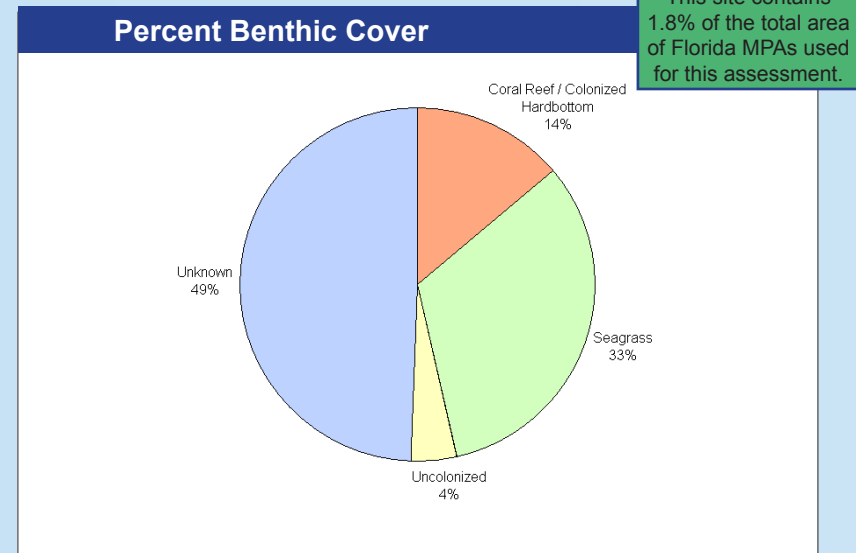
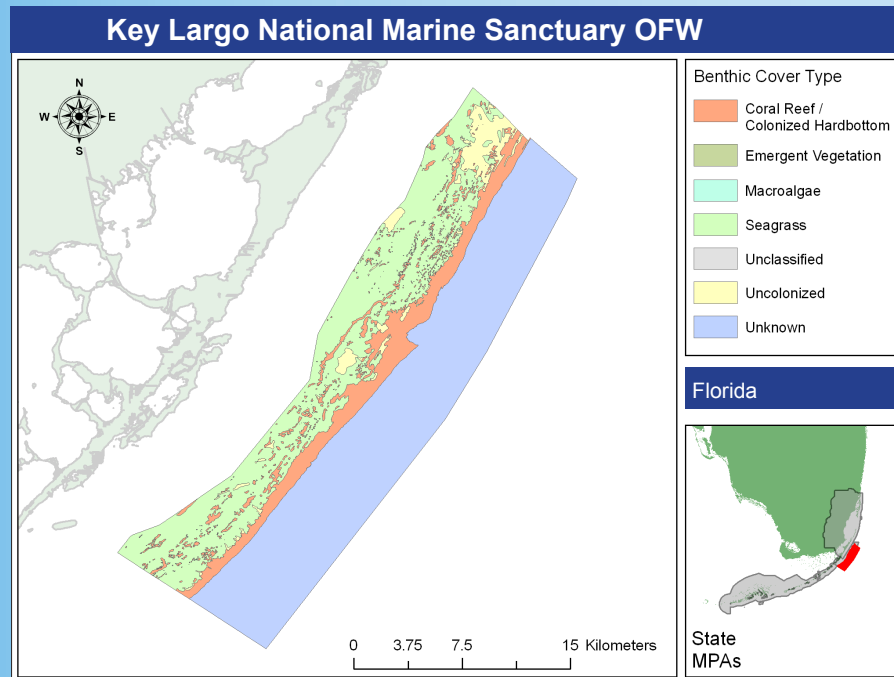
Management Agency: Florida Department of Environmental Protection

## Overview

The site is located off of Key Largo, within the Florida Keys National Marine Sanctuary. The site was established to prevent the decline of existing water quality and contains diverse and productive hard bottom habitats composed of attached sponges, corals, algae, and invertebrates.

The boundary of the site is the same as that of the Key Largo National Marine Sanctuary, which was established in 1975. It is now incorporated into the Florida Keys National Marine Sanctuary.

Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



# Looe Key National Marine Sanctuary Outstanding Florida Water

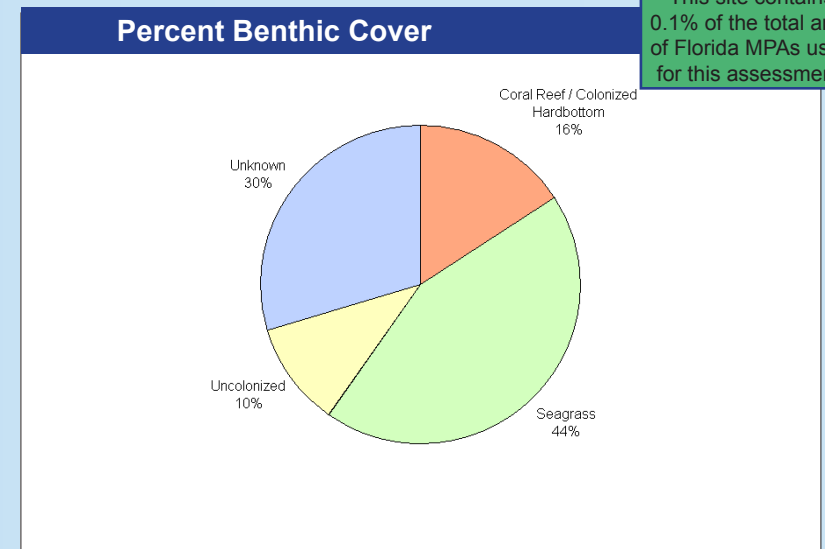
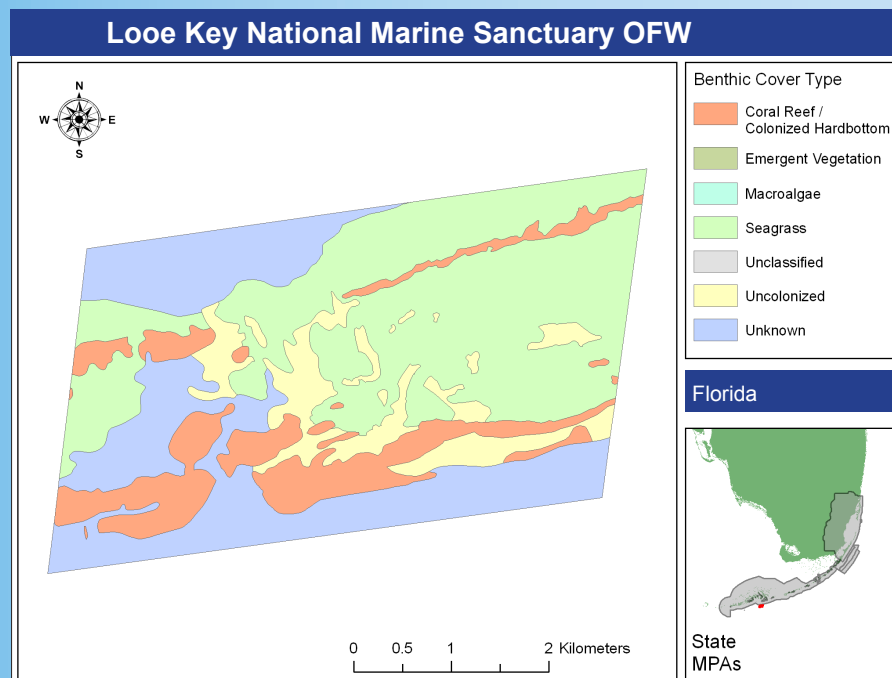
Management Agency: Florida Department of Environmental Protection

## Overview

Looe Key National Marine Sanctuary Outstanding Florida Water is a management zone within the Florida Keys National Marine Sanctuary. The Florida Keys marine ecosystem supports one of the most diverse assemblages of underwater plants and animals in North America. Although the Keys are best known for coral reefs, there are many other significant interconnecting and interdependent habitats. These include fringing mangroves, seagrass meadows, hardbottom regions, patch reefs, and bank reefs. This complex marine ecosystem is the foundation for the commercial fishing and tourism based economies that are so important to Florida.

The site was established to prevent the decline of existing water quality. The boundary of the site is the same as that of the Looe Key Sanctuary Preservation Area within the Florida Keys National Marine Sanctuary.

Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



# North Key Largo Hammock Outstanding Florida Water

Management Agency: Florida Department of Environmental Protection

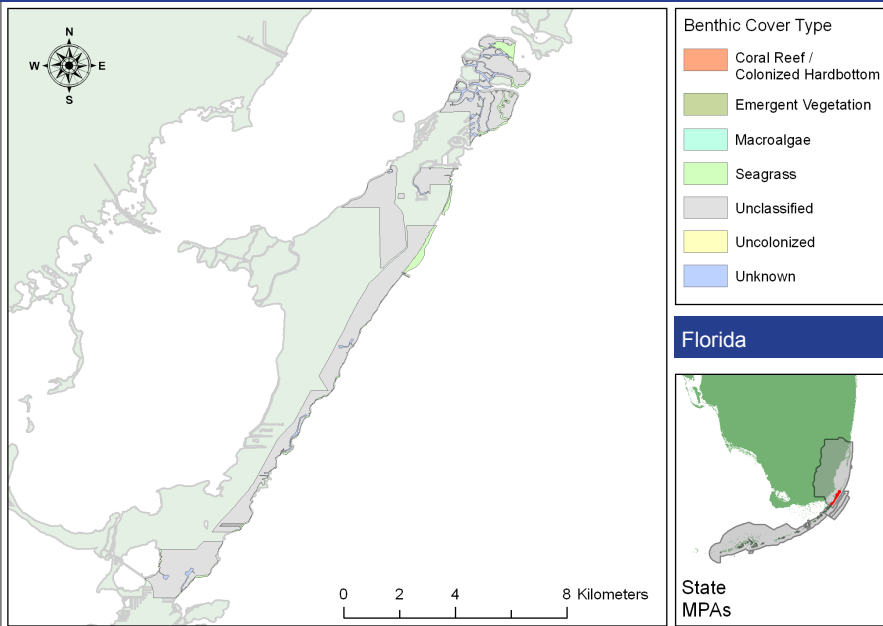
## Overview

North Key Largo Hammock Outstanding Florida Water is located on Key Largo, in the Florida Keys. The site was established to prevent the decline of existing water quality and contains coastal wetlands and patches of submerged aquatic vegetation.

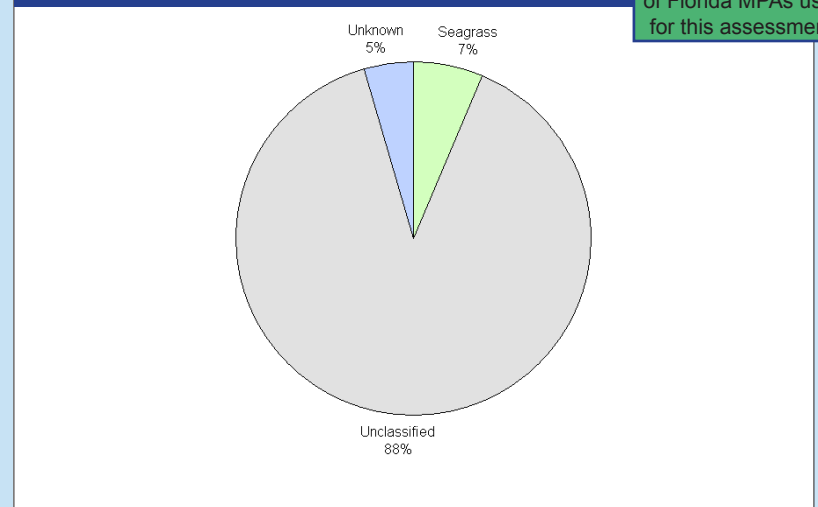
Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



## North Key Largo Hammock Outstanding Florida Water



## Percent Benthic Cover



This site contains 0.1% of the total area of Florida MPAs used for this assessment.

# Bahia Honda State Park & OFW

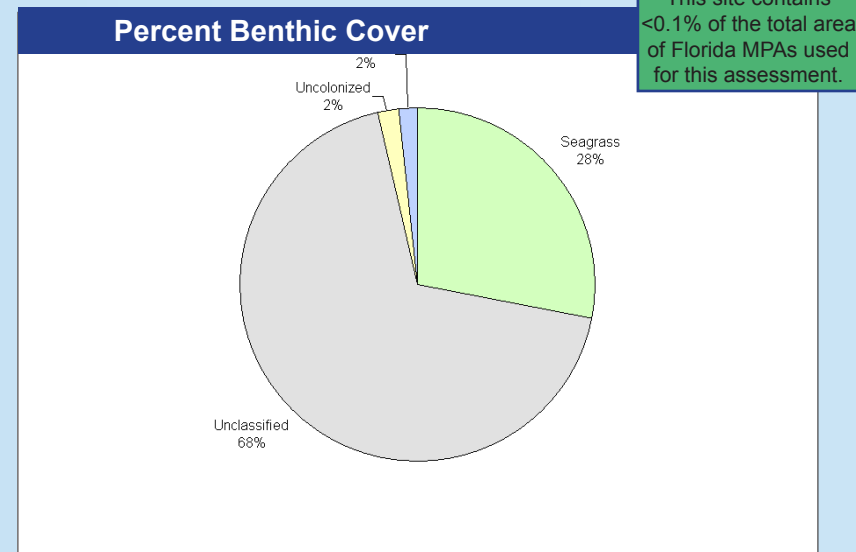
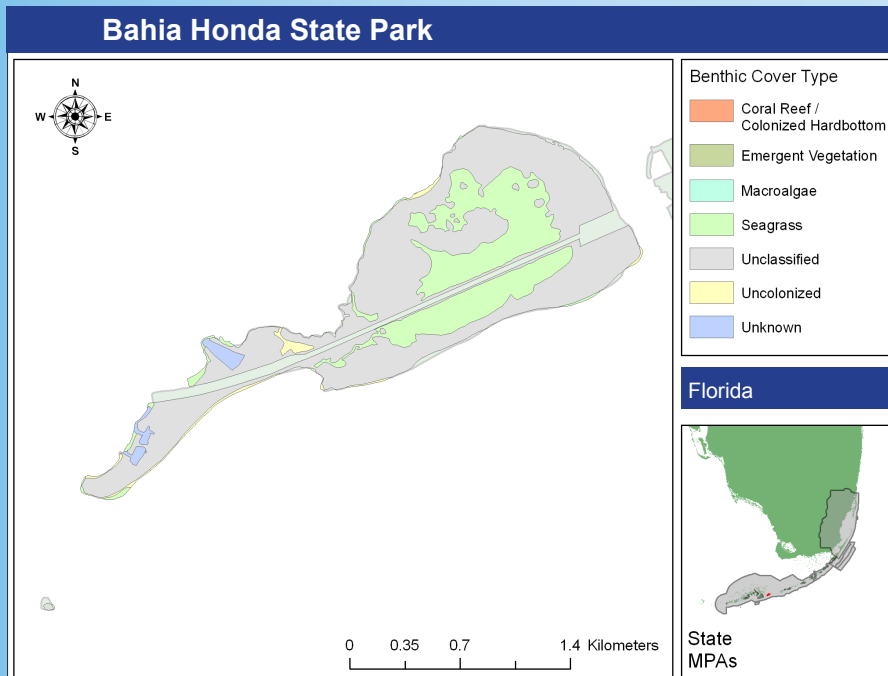
Management Agency: Florida Department of Environmental Protection

## Overview

Bahia Honda State Park is located in the Florida Keys, between Missouri Key and Spanish Harbor Keys. It includes Bahia Honda Key and Little Bahia Honda Island.

The site was established to provide opportunities for resource-based outdoor recreation and conservation. It contains beach dune, estuarine and marine consolidated substrate (hardbottom), estuarine and marine seagrass bed, estuarine and marine tidal swamp (mangroves), estuarine and marine tidal marsh, and estuarine and marine unconsolidated substrate.

Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



# Bill Baggs Cape Florida State Park & OFW

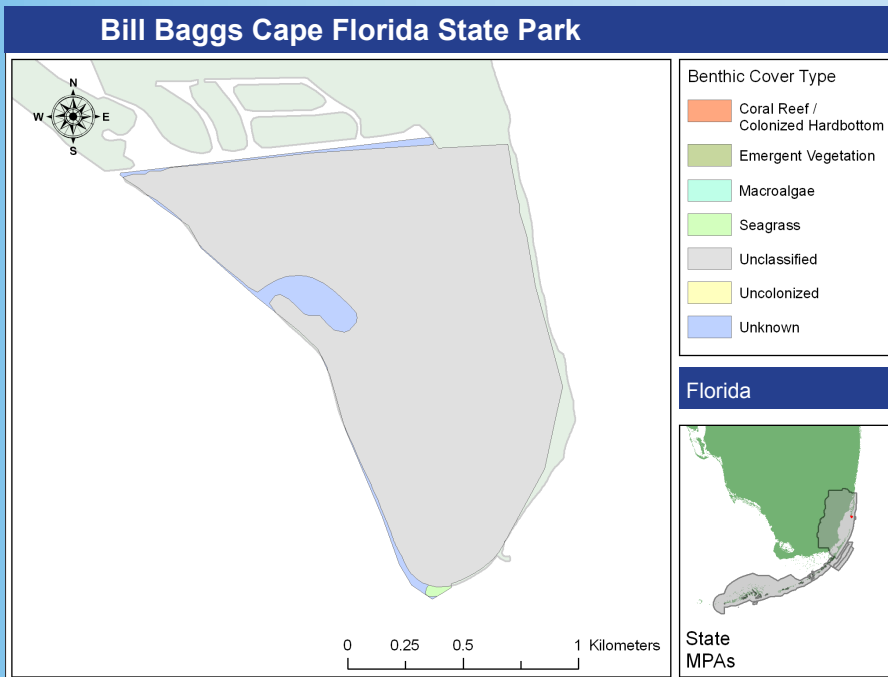
Management Agency: Florida Department of Environmental Protection

## Overview

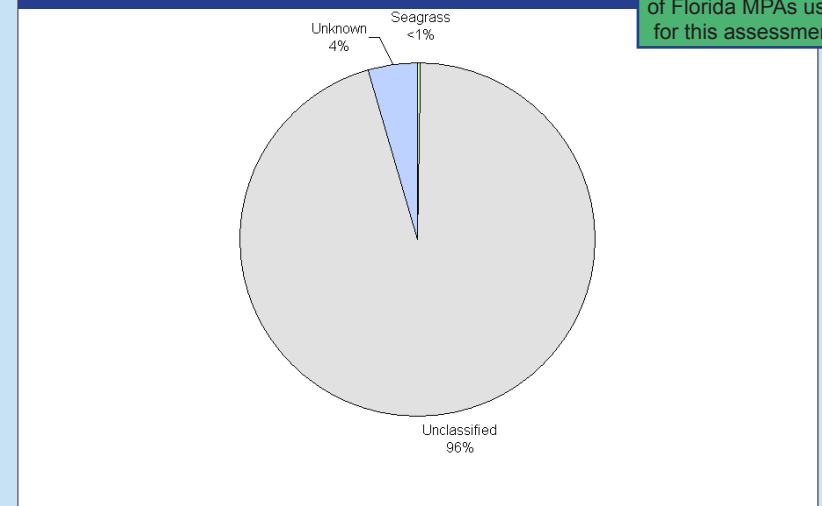
Bill Baggs Cape Florida State Park is located on the southern end of Key Biscayne about seven miles southeast of Miami and is bounded on the east, south, and west by the Atlantic Ocean and Biscayne Bay. The site was established to provide opportunities for resource-based outdoor recreation and conservation.

The site contains beach dune, marine composite substrate, marine consolidated substrate, marine grass beds, marine tidal swamp, and marine unconsolidated substrate. Florida manatees, piping plovers, white-crowned pigeons, least terns, American crocodiles, and loggerhead and green sea turtles are found within the site.

Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



## Percent Benthic Cover



This site contains <0.1% of the total area of Florida MPAs used for this assessment.

# Curry Hammock State Park & OFW

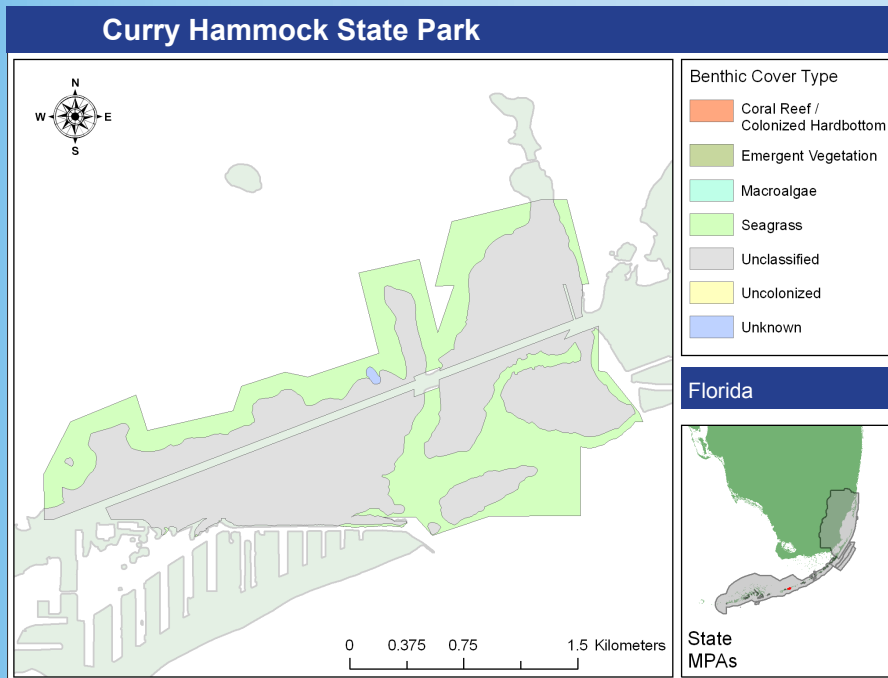
Management Agency: Florida Department of Environmental Protection

## Overview

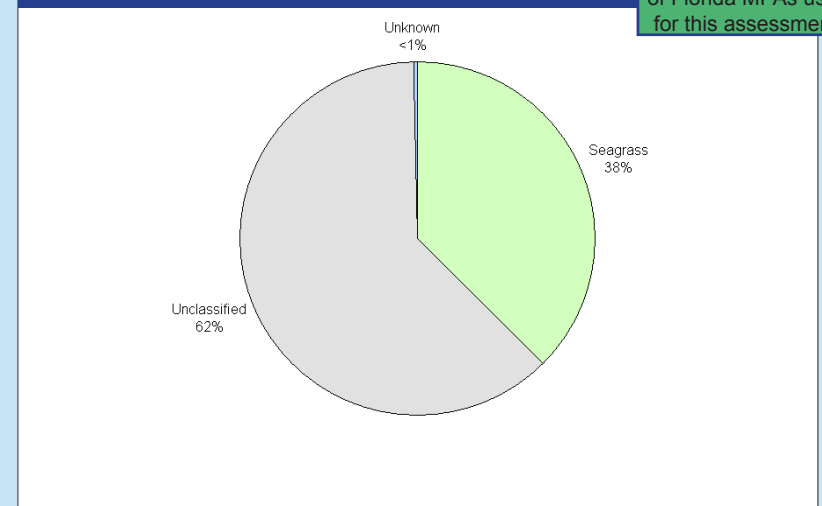
Curry Hammock State Park is located in the Florida Keys, just north of Marathon. It includes all of Little Crawl Key and Deer Key and portions of Fat Deer Key and Long Point Key. The park includes land on four keys and associated waters. The site was established to provide opportunities for resource-based outdoor recreation and conservation.

The site contains marine tidal swamp, marine tidal marsh, marine seagrass bed, marine unconsolidated substrate, marine composite substrate, and marine consolidated substrate communities. Florida manatees, white-crowned pigeons, and four species of sea turtles (loggerhead, green, leatherback, and hawksbill) are found within the park. The tidal marsh community is very uncommon in the Keys. The park also contains coastal rock barren, a rare community found only in the Florida Keys.

Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



## Percent Benthic Cover



This site contains <0.1% of the total area of Florida MPAs used for this assessment.

# Fort Zachary Taylor State Historic Site & OFW

Management Agency: Florida Department of Environmental Protection

## Overview

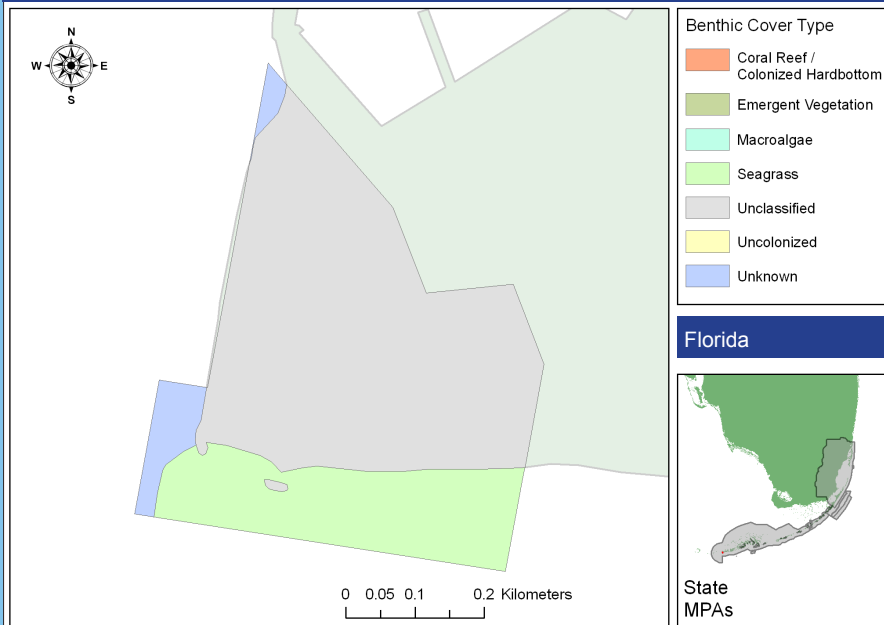
Fort Zachary Taylor State Historic Site is located in the Florida Keys, southwest of the City of Key West and is bounded on the west and south by the Atlantic Ocean. The site was established to provide opportunities for resource-based outdoor recreation and conservation.

The site contains marine composite substrate (algae and corals), marine consolidated substrate (hardbottom community), marine grass bed, and marine unconsolidated substrate. Atlantic loggerhead sea turtles, bald eagles, least terns, and roseate terns are found within the site. The park contains coastal rock barren, a rare community found only in the Florida Keys.

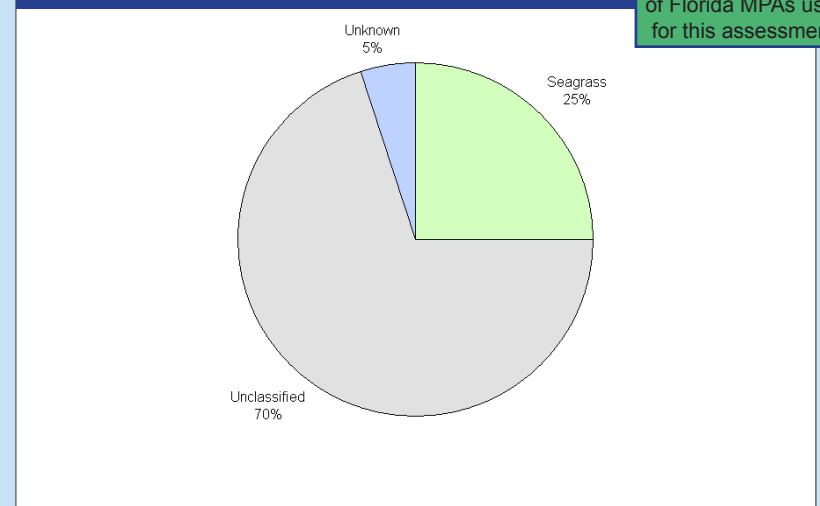
Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



## Fort Zachary Taylor State Historic Site



## Percent Benthic Cover



This site contains <0.1% of the total area of Florida MPAs used for this assessment.

# Indian Key State Historic Site & OFW

Management Agency: Florida Department of Environmental Protection

## Overview

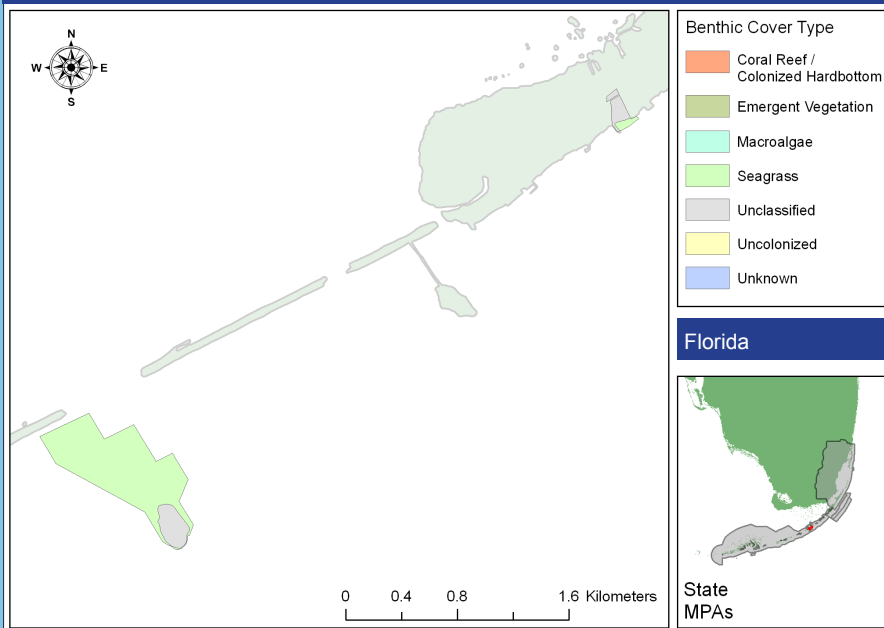
Indian Key State Historic Site is located in the Florida Keys, south of Islamorada, and includes Indian Key, part of Upper Matecumbe Key, and their associated waters. The site was established to provide opportunities for resource-based outdoor recreation and conservation.

The site includes marine grass beds, marine tidal swamp (mangroves), marine composite substrate, marine consolidated substrate (soft and hard coral, sponges, and algae), marine unconsolidated substrate (hardbottom community with algae and corals), and coastal rock barren. Florida manatees, bald eagles, white-crowned pigeons, least terns, and loggerhead, green, and hawksbill sea turtles are found within the site. The park contains coastal rock barren, a rare community found only in the Florida Keys.

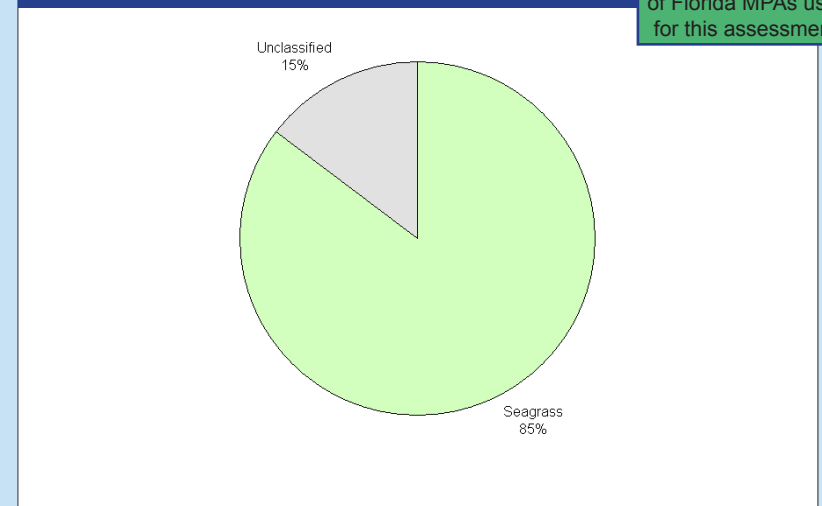
Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



## Indian Key State Historic Site



## Percent Benthic Cover



This site contains <0.1% of the total area of Florida MPAs used for this assessment.



# John Pennekamp Coral Reef State Park & OFW

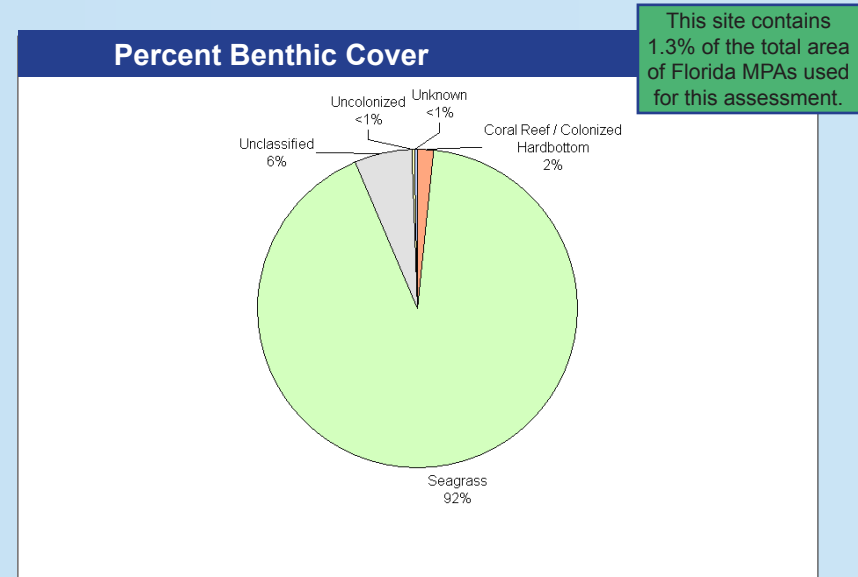
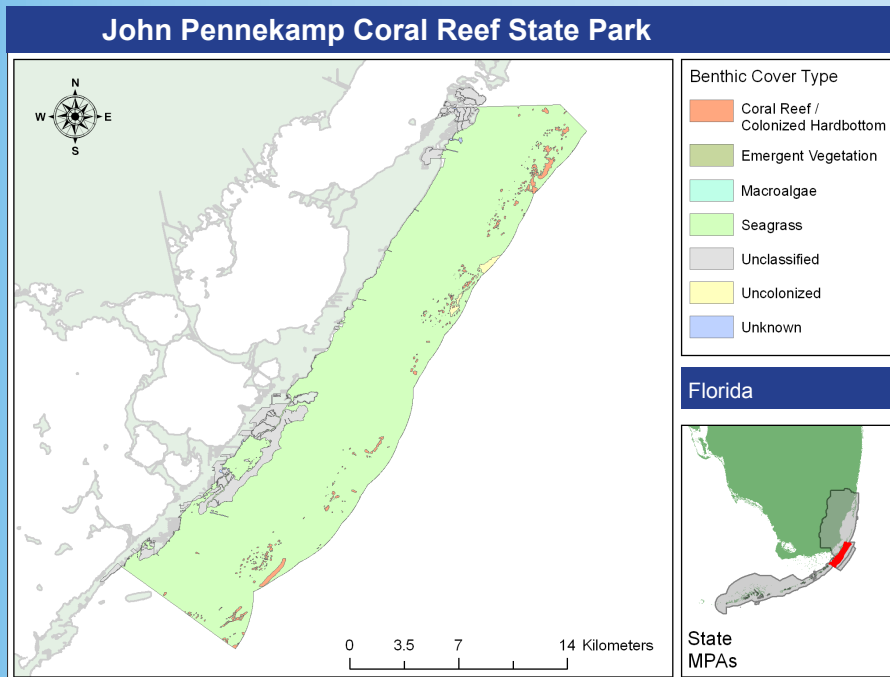
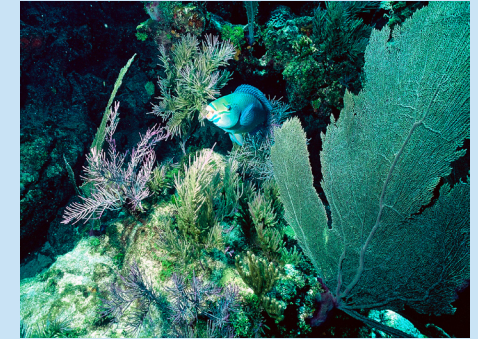
Management Agency: Florida Department of Environmental Protection

## Overview

John Pennekamp Coral Reef State Park is located on Key Largo (in the Florida Keys), 20 miles south of Homestead and is bounded on the east by the Atlantic Ocean, with a seaward park boundary 3 miles from shore. The site was established to provide opportunities for resource-based outdoor recreation and conservation.

The site contains marine composite substrate, marine consolidated substrate (hardbottom), coral reef, marine grass bed, marine tidal swamp (mangrove), and marine unconsolidated substrate. Florida manatees, Wood storks, Piping plovers, Roseate terns, least terns, white-crowned pigeons, bald eagles, American crocodiles, and five species of sea turtles (loggerhead, leatherback, hawksbill, ridley, and green) are found within the park. The park contains coastal rock barren, a rare community found only in the Florida Keys.

Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



# Key Largo Hammock State Botanical Site & OFW

Management Agency: Florida Department of Environmental Protection

## Overview

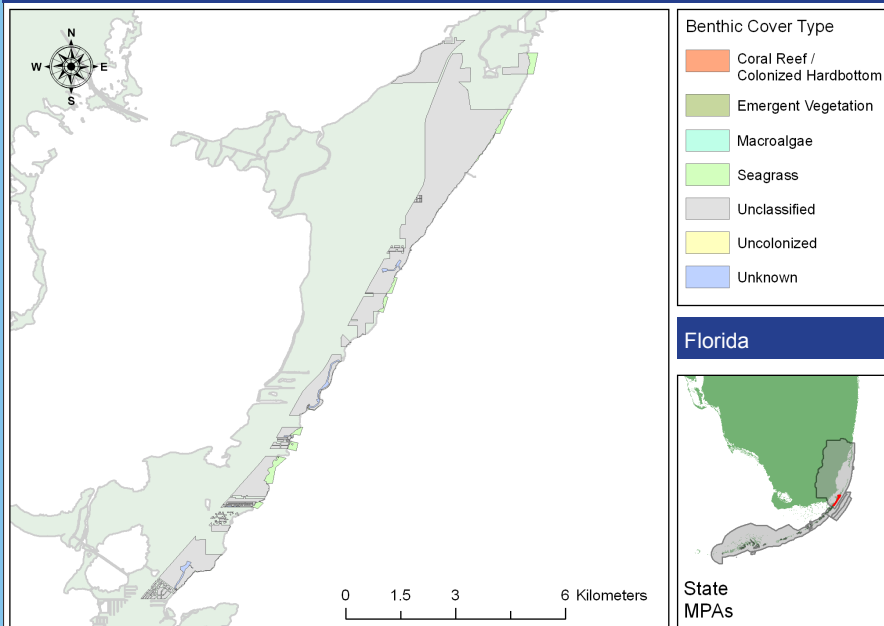
Key Largo Hammock State Botanical Site is located along the Atlantic Ocean on the north end of Key Largo in the Florida Keys and is bordered by the Atlantic Ocean on the south and east, and by County Road 905 on the west. The site was established to provide opportunities for resource-based outdoor recreation and conservation and especially to protect the offshore coral reefs.

The site contains primarily rockland hammock and estuarine tidal swamp communities. Wood storks, Roseate terns, Bald eagles, least terns, white-crowned pigeons, and American crocodiles are found within the park. The park contains coastal rock barren, a rare community found only in the Florida Keys.

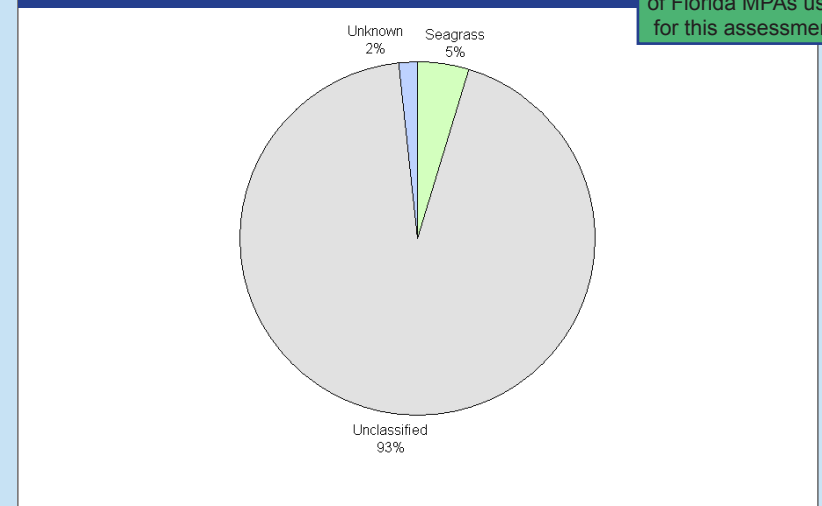
Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



## Key Largo Hammock State Botanical Site



## Percent Benthic Cover



This site contains 0.1% of the total area of Florida MPAs used for this assessment.

# Lignumvitae Key Botanical State Park & OFW

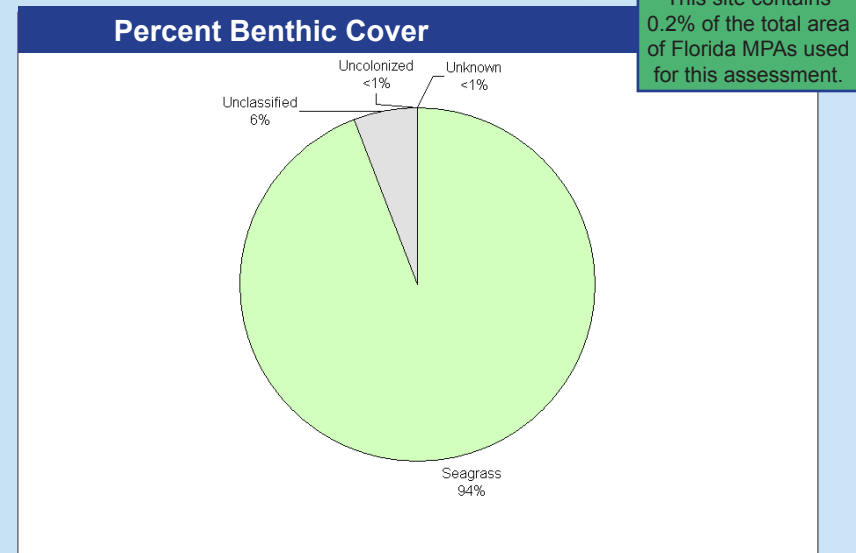
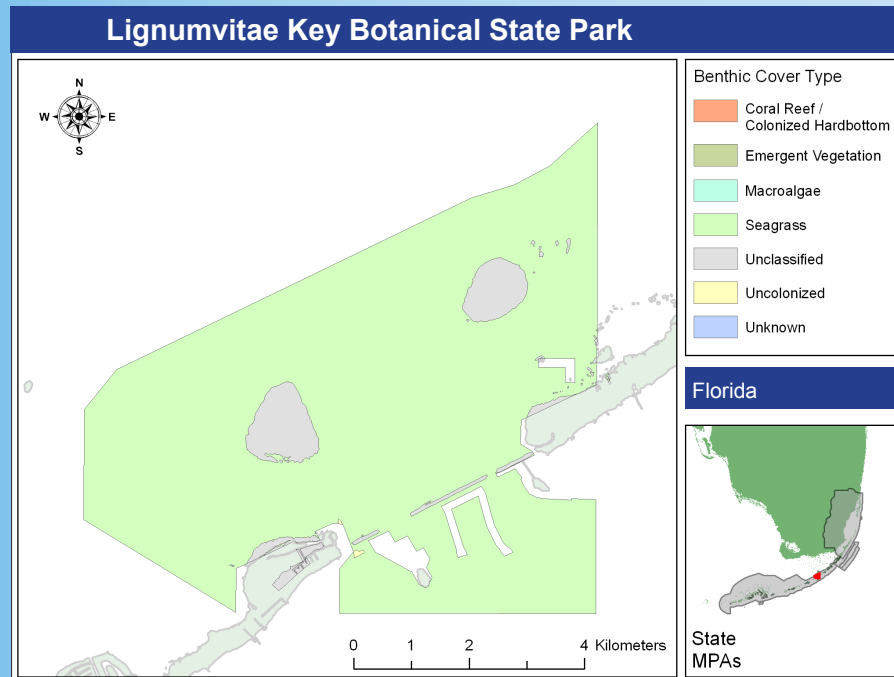
Management Agency: Florida Department of Environmental Protection

## Overview

Lignumvitae Key Botanical State Park, which includes Lignumvitae Key and Shell Key, is located in the Florida Keys one mile west of Islamorada. The boundary of the park includes an extensive area of submerged lands surrounding the two islands. The site was established to provide opportunities for resource-based outdoor recreation and conservation.

The site includes marine composite substrate, marine unconsolidated substrate, marine consolidated substrate (hardbottom), marine grass beds, and marine tidal swamp (mangroves). Florida manatees, bald eagles, white-crowned pigeons, Key mud turtles, least terns, and hawksbill, green, and loggerhead sea turtles are found within the site. The park contains coastal rock barren, a rare community found only in the Florida Keys.

Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



# Long Key State Recreation Area & OFW

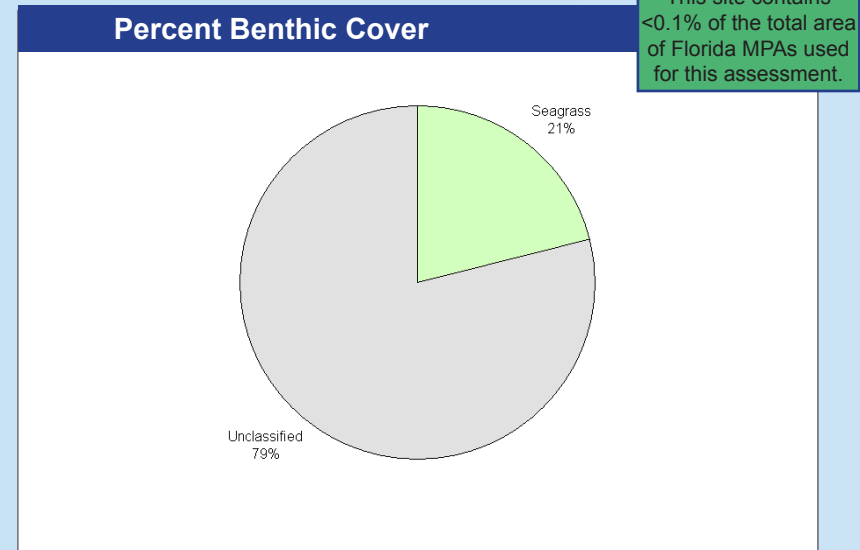
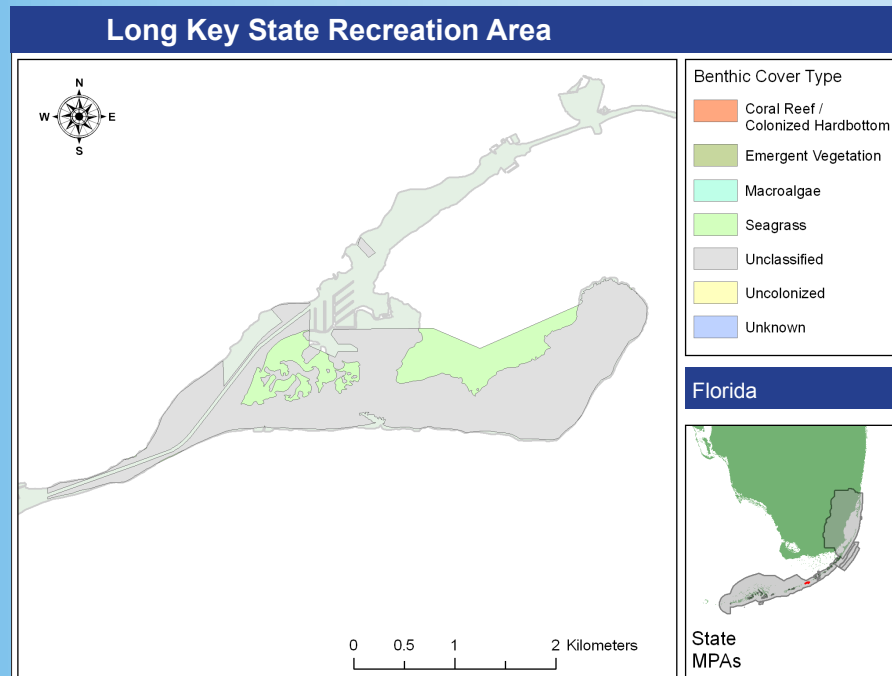
Management Agency: Florida Department of Environmental Protection

## Overview

Long Key State Recreation Area is located in the Florida Keys, 12 miles southwest of Islamorada and occupies over half of the island of Long Key and adjacent waters. The site was established to provide opportunities for resource-based outdoor recreation and conservation.

The park contains beach dune, marine grass bed, marine tidal swamp, marine composite substrate, marine consolidated substrate (hardbottom), and marine unconsolidated substrate communities. Florida manatees, wood storks, bald eagles, least terns, white-crowned pigeons, Key mud turtles, and five species of sea turtles (green, leatherback, hawksbill, ridley, and loggerhead) are found within the park. The park also contains coastal rock barren, a rare community found only in the Florida Keys.

Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



# Oleta River State Park & OFW

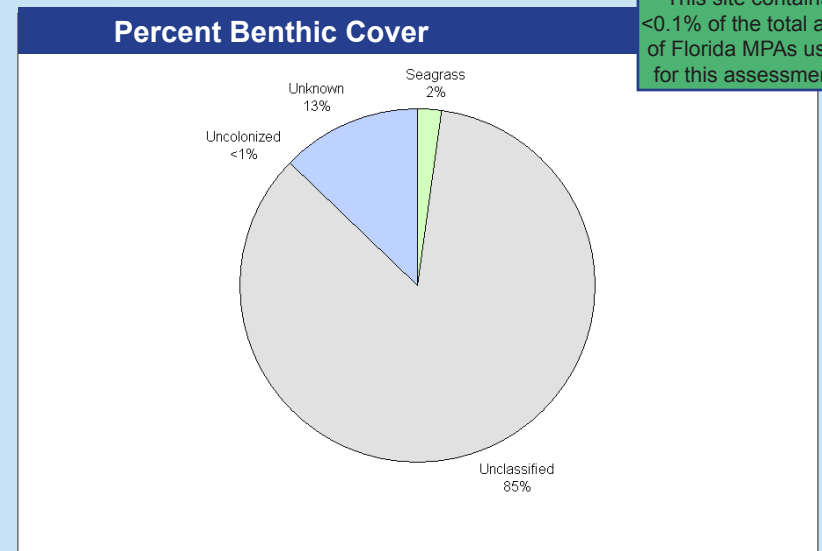
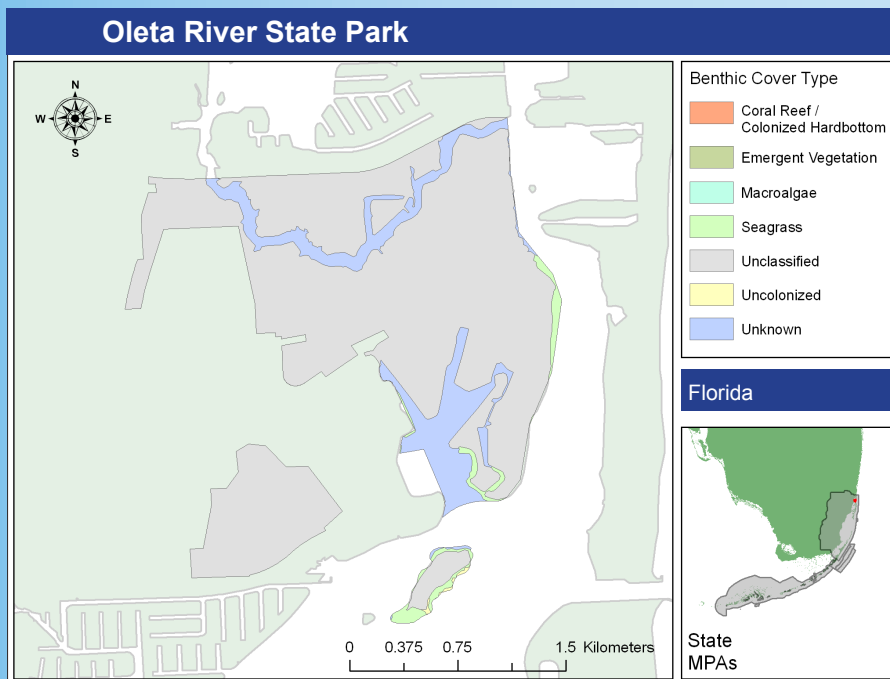
Management Agency: Florida Department of Environmental Protection

## Overview

The park is located along the Oleta River and the northernmost portion of Biscayne Bay, within the city limits of North Miami and is bordered on the east by Biscayne Bay and on the north by Interama. The site was established to provide opportunities for resource-based outdoor recreation and conservation.

The site contains beach dune, estuarine tidal swamp, and estuarine unconsolidated substrate communities. Wood storks, bald eagles, least terns, and Florida manatees are found within the park.

Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



# San Pedro Underwater Archaeological Preserve State Park & OFW

Management Agency: Florida Department of Environmental Protection

## Overview

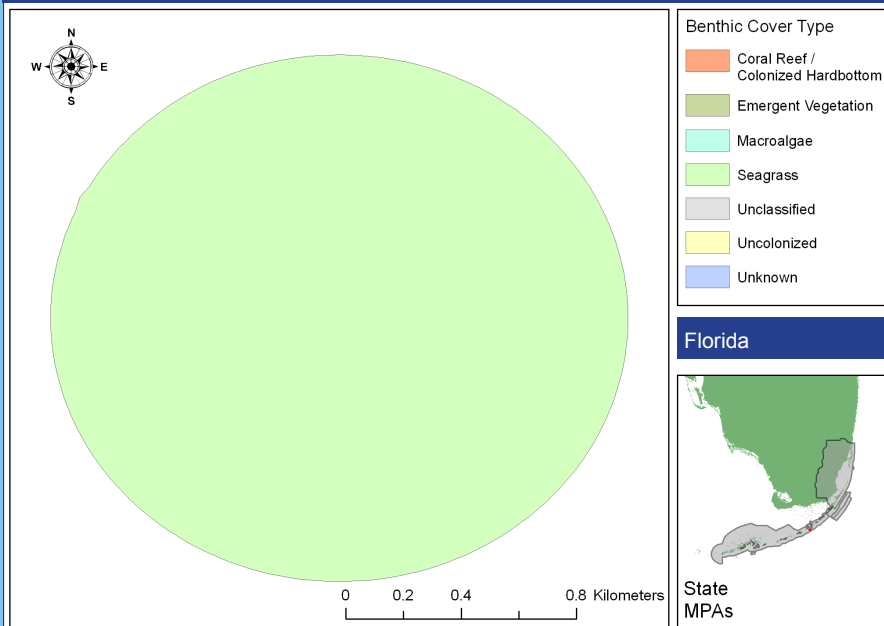
The park is located in 18 feet of water in the Atlantic Ocean, 1.25 nautical miles south of Indian Key in the Florida Keys and is bounded by a 1000-yard radius around coordinates 24°51.3'N and 80°40.6'W. The site was established to provide opportunities for resource-based outdoor recreation and conservation.

The site contains the 1733 wreck "San Pedro" (one of a fleet of 21 Spanish vessels) surrounded by a ring of sandy substrate and seagrass beds. Coral growth is present on the ballast stones and concrete cannons of the wreck. Three species of sea turtles (loggerhead, green, and hawksbill) are found within the site.

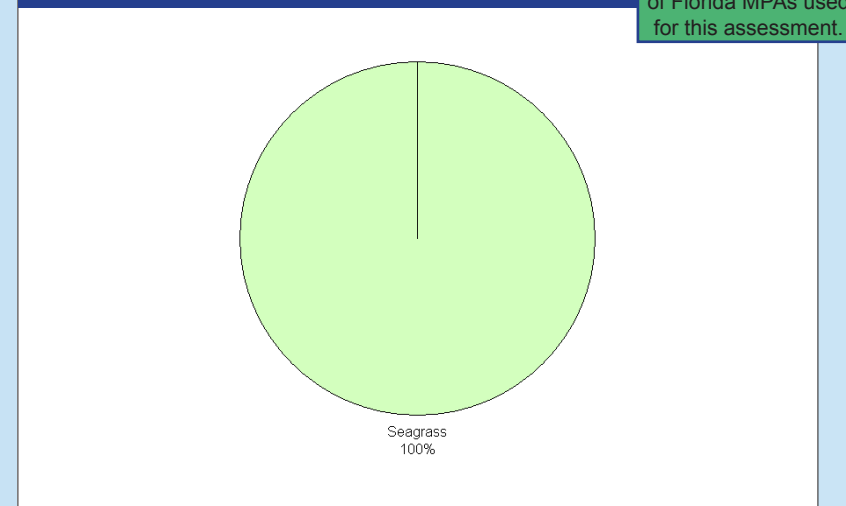
Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



## San Pedro Underwater Archaeological Preserve State Park



## Percent Benthic Cover



This site contains <0.1% of the total area of Florida MPAs used for this assessment.

# The Barnacle Historic State Park

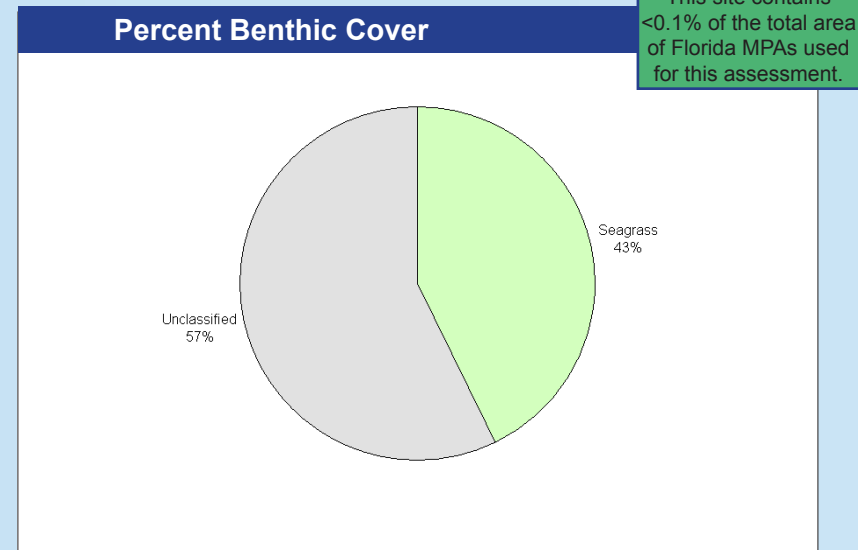
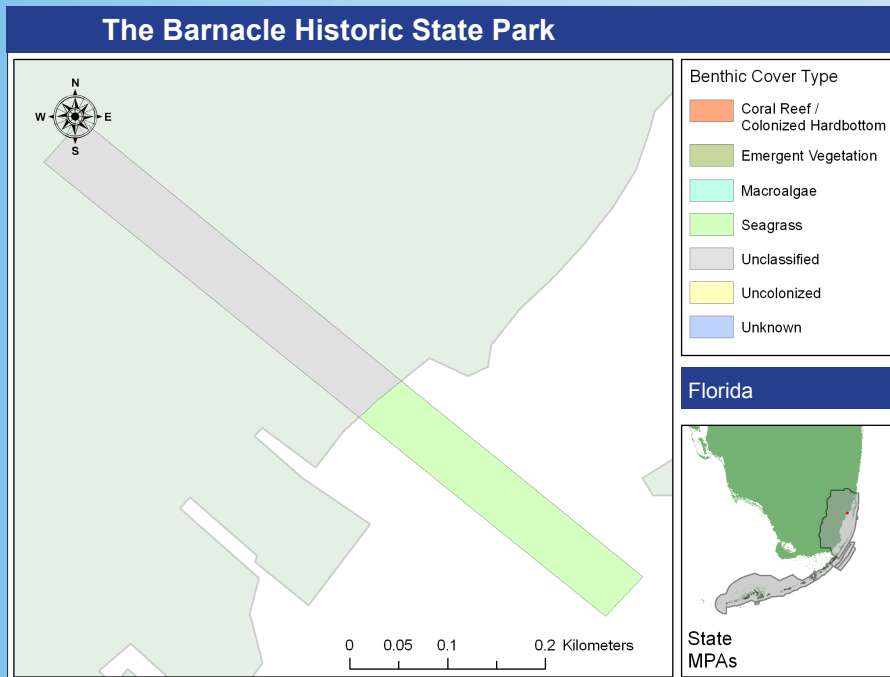
Management Agency: Florida Department of Environmental Protection

## Overview

The Barnacle Historic State Park is located along Biscayne Bay, within historic Coconut Grove in Miami–Dade County and was established to provide opportunities for resource-based outdoor recreation and conservation.

The site contains marine grass beds, marine tidal swamp, and marine unconsolidated substrate communities. Florida manatees are found within the site.

Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



# Windley Key Fossil Reef Geological State Park & OFW

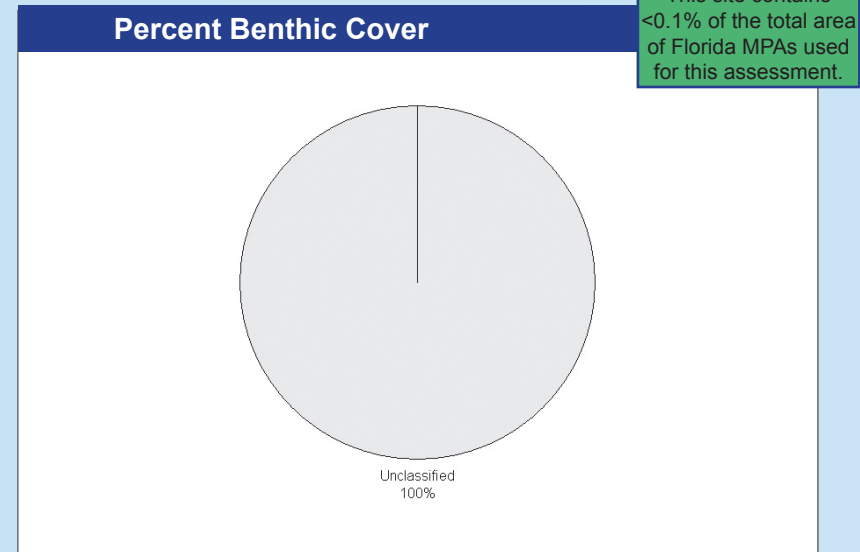
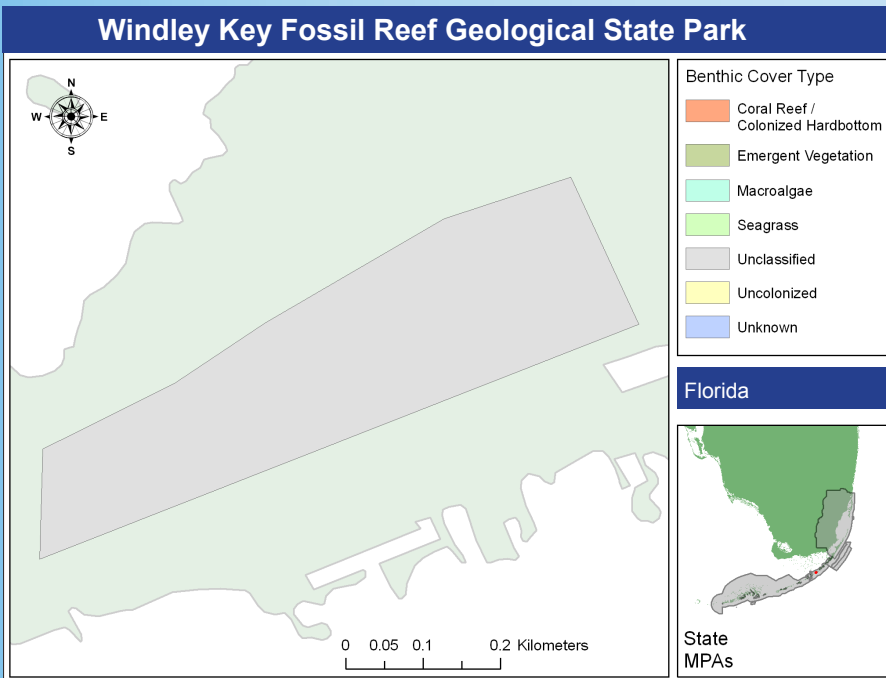
Management Agency: Florida Department of Environmental Protection

## Overview

Windley Key Fossil Reef Geological State Park is located on the Florida Bay side of Windley Key in the Florida Keys and is bound in the north by Florida Bay and in the south by U.S. Route 1. The site was established to provide opportunities for resource-based outdoor recreation and conservation.

The site contains marine grass beds, marine tidal swamp, and marine unconsolidated substrate communities. Florida manatees are found within the site.

Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.





# Biscayne Bay SWIM Area

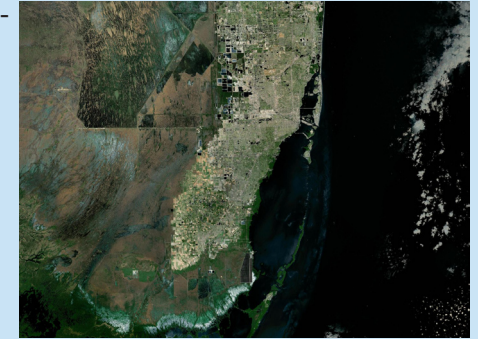
Management Agency: Florida Department of Environmental Protection

## Overview

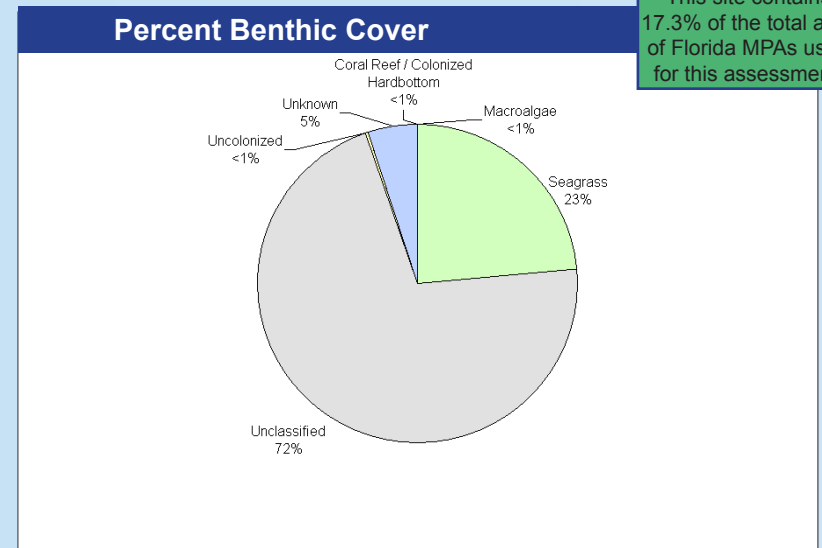
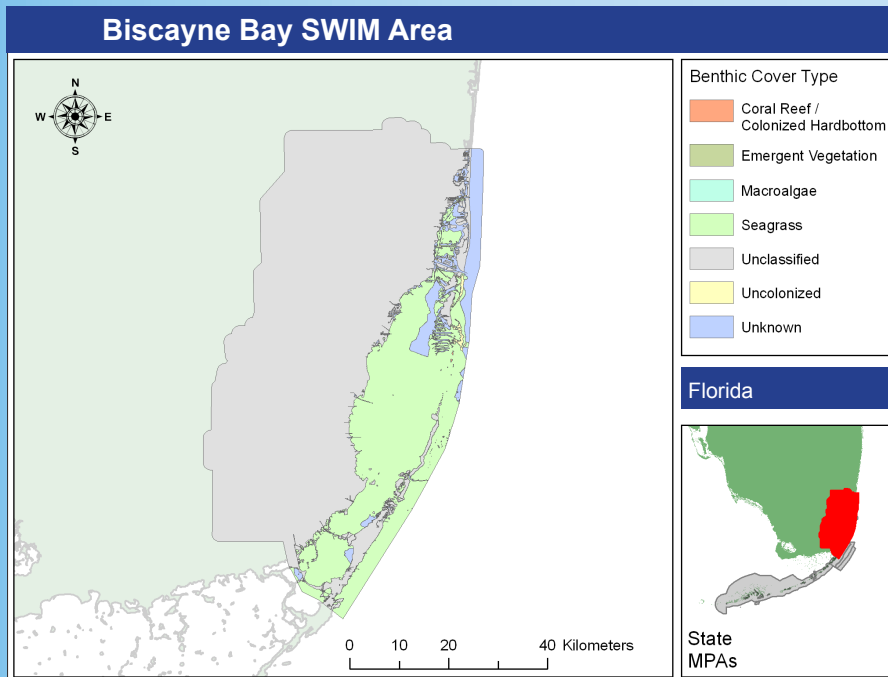
Biscayne Bay is located along the southeastern coast of Florida in Dade County. The watershed is composed of the drainage basins east of the Everglades, including portions of southern Broward and northern Monroe counties. The area is bounded on the north by Dumfoundling Bay and includes the Intracoastal Waterway to one mile north of the Broward County line and the C-9 (Snake Creek) Basin. The western boundary follows the hydrologic divide formed by the L-30, L-31N and L-31W levee system. Everglades National Park and U.S. Highway 1 to Key Largo form the southern boundary. The eastern boundary follows the Atlantic Ocean seashore one mile offshore.

The site was established to restore surface waters that have been degraded, or are in danger of becoming degraded, and to enhance the environmental and scenic values of these waters.

The SWIM area is comprised of a marine ecosystem of about 428 square miles and a drainage area of about 938 square miles, including 350 square miles of wetlands. The major biological communities are mangroves and coastal marshes, freshwater wetlands in tributary basins, and the highly productive seagrass, macroalgae and hard-bottom benthic communities. Florida manatees, American crocodile, Piping plovers, Wood storks, and four species of sea turtles (loggerhead, green, hawksbill, and Kemp's Ridley) are found within the area.



Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



# Florida Keys Wildlife and Environmental Area

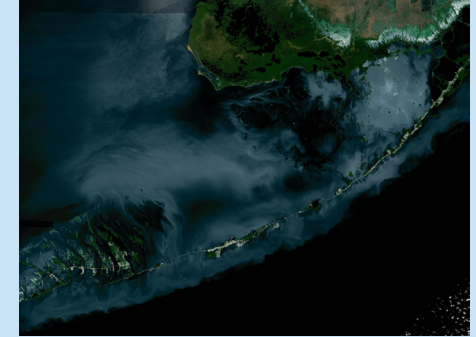
Management Agency: Florida Fish and Wildlife Conservation Commission

## Overview

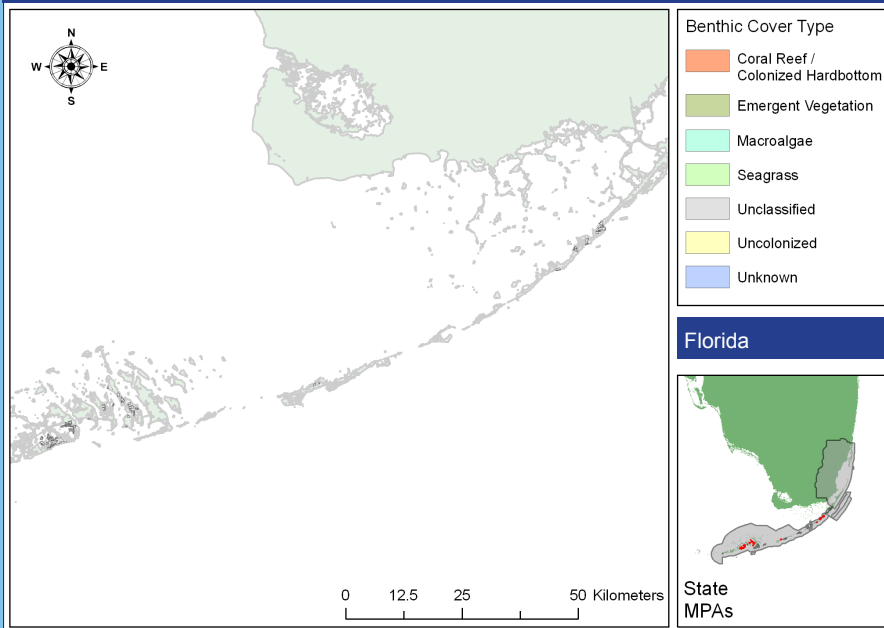
Florida Keys Wildlife and Environmental Area contains several tracts throughout the Florida Keys archipelago and was established primarily for environmental purposes, although compatible recreational use may be allowed. The primary objectives for acquisition is to protect all the significant unprotected hardwood hammocks left in the Keys and many rare plants and animals, including the Lower Keys marsh rabbit and Key deer. It will also help protect the OFW of the Keys, the recreational and commercial fisheries, and the reefs around the islands, and also give residents and visitors more area for enjoying the natural beauty of the Keys.

The site contains mangrove swamp and coastal salt marsh. American crocodiles, Florida manatees, Piping plovers, Roseate terns, Least terns, White-crowned pigeons, Bald eagles, Keys mud turtles, Lower Keys marsh rabbits, and three species of sea turtles are found within the site.

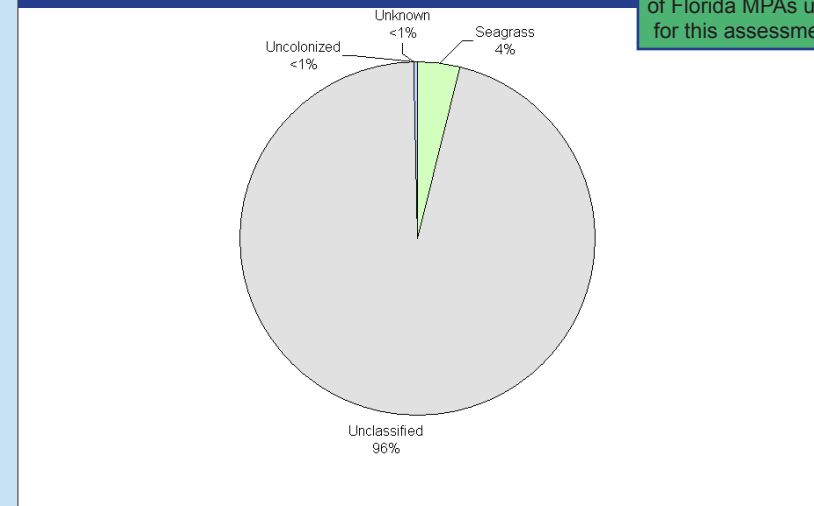
Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



## Coupon Bight Aquatic Preserve



## Percent Benthic Cover



This site contains 0.1% of the total area of Florida MPAs used for this assessment.

# Biscayne National Park, OFW, SHPA, TOMSHPA

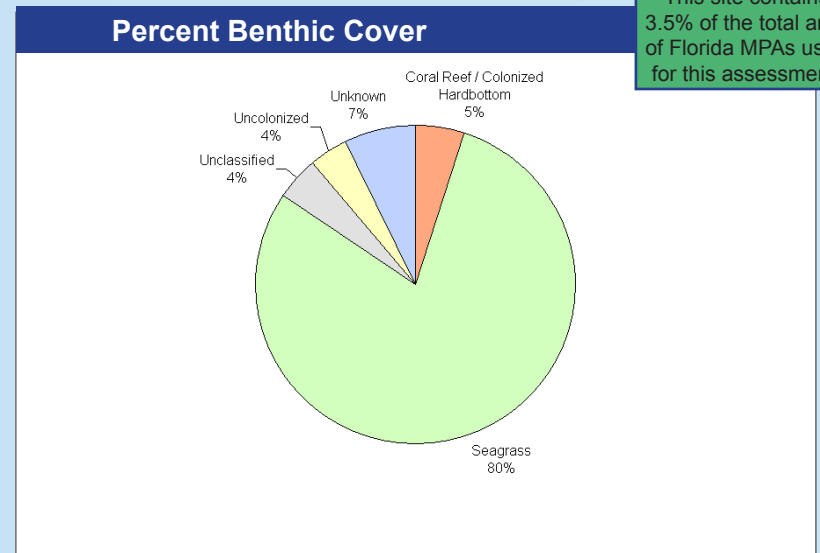
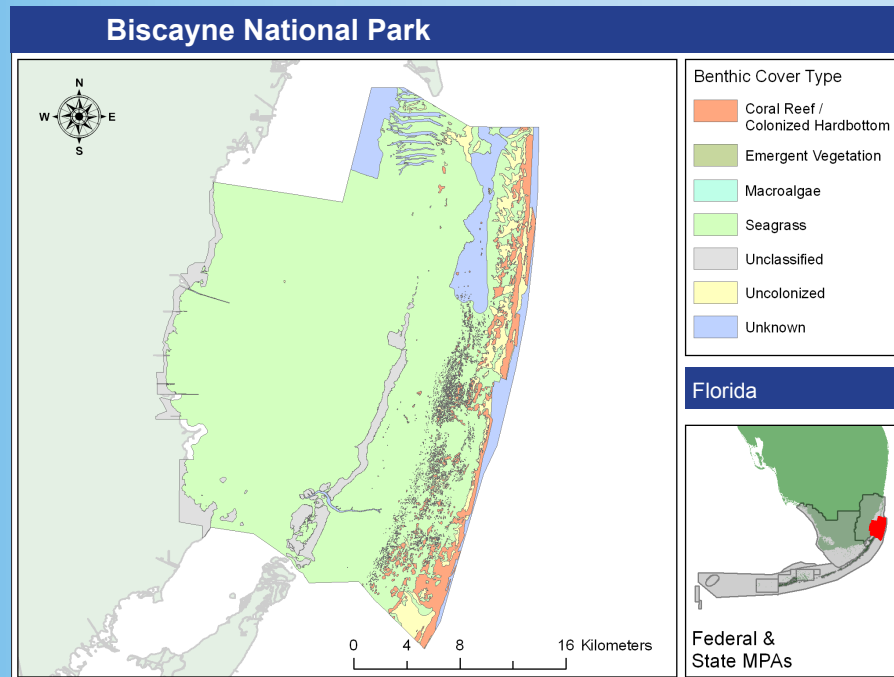
Management Agency: National Park Service, Florida Department of Environmental Protection, and Florida Fish & Wildlife Conservation Commission

## Overview

Located in southeastern Florida and at the northern extent of the Florida Keys, Biscayne National Park encompasses an area of 173,000 acres (~270 square miles), of which 95% (~164,000 acres) are marine.

Along the mainland shoreline of Biscayne Bay lies the longest unbroken stretch of Mangrove Forest on Florida's east coast. Though only a small part of the park, mangroves are critically important to the park's food chain. Biscayne Bay, the park's namesake, is a broad, shallow body of water teeming with life. The bay provides abundant recreational opportunities, particularly in its southern end, which is relatively pristine. The park is home to over 200 species of fish and countless other marine plants and animals, and contains some of the healthiest and most vibrant coral reefs in Florida.

Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



# Dry Tortugas National Park & OFW

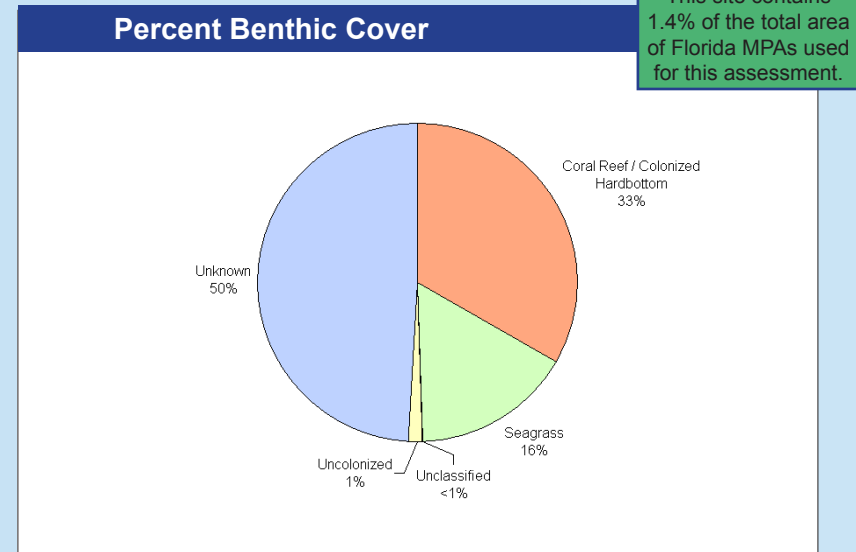
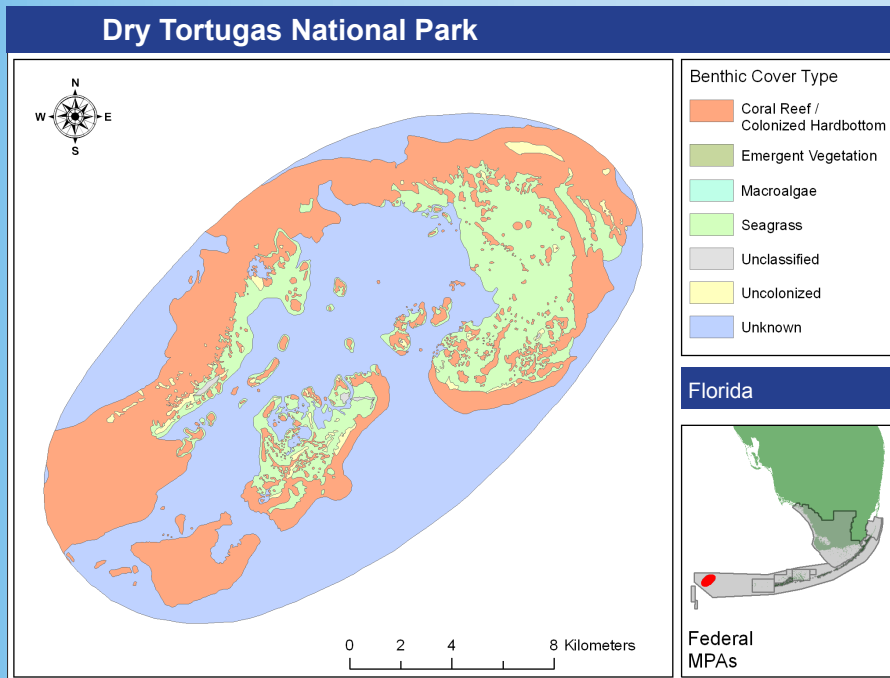
Management Agency: National Park Service, and Florida Department of Environmental Protection

## Overview

Dry Tortugas National Park is located in the south eastern part of the Gulf of Mexico, 30 miles west of the Florida Keys. The park encompasses islands seven small islands within its 100-square-mile jurisdiction called the Dry Tortugas. These islands are composed of coral reefs and sand.

This site protects the least disturbed portion of the Florida Keys coral reef ecosystem. The area is known for its famous bird and marine life, and its legends of pirates and sunken gold. Due to their strategic location in the Florida Straits, plans were made for a massive fortress. Construction began in 1846, but the fort was never completed because the invention of a better cannon made it obsolete. As the military value of Fort Jefferson waned, its pristine reefs, abundant sea life and impressive numbers of birds grew in value.

Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



# Everglades National Park & OFW

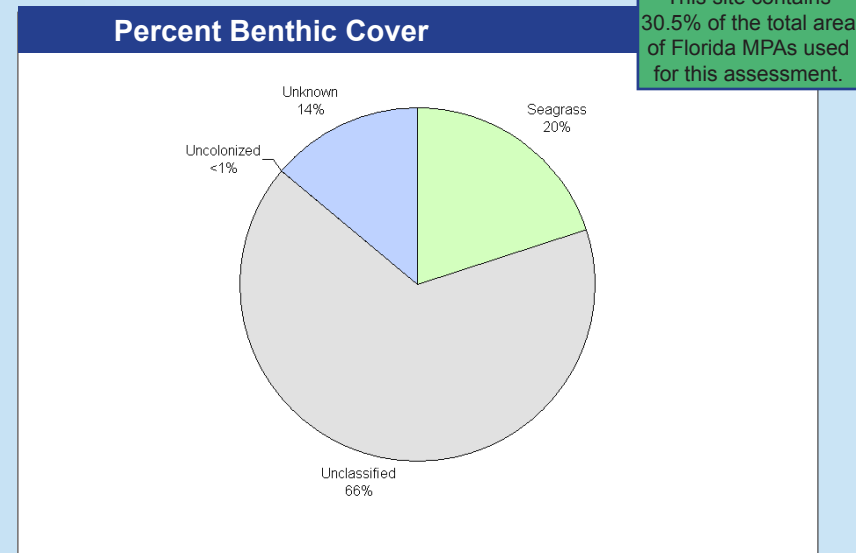
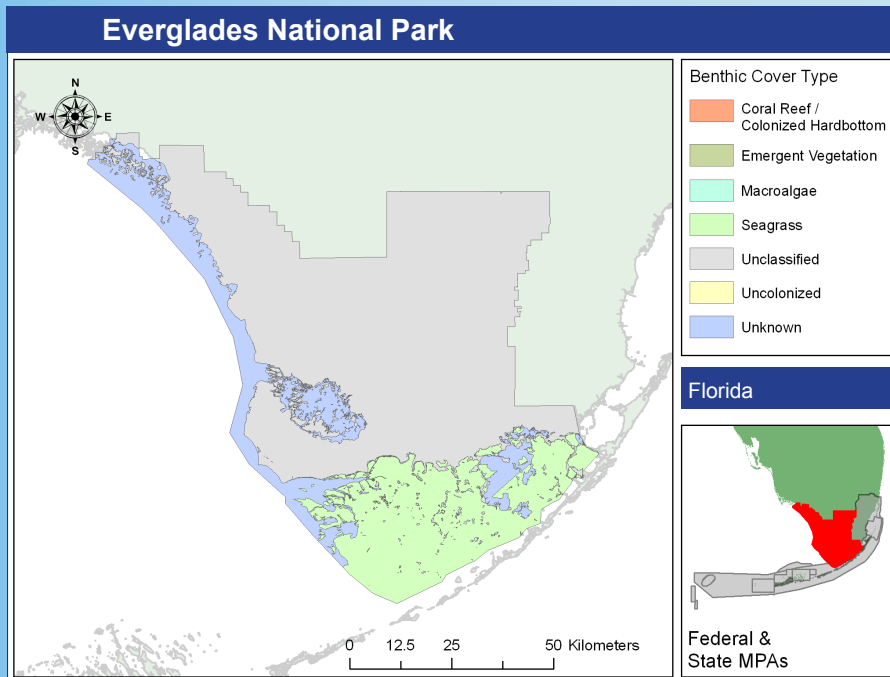
Management Agency: National Park Service, and Florida Department of Environmental Protection

## Overview

Everglades National Park spans the southern tip of the Florida peninsula and most of Florida Bay. The park was set aside for the benefit and enjoyment of the public and to preserve the unique flora and fauna and the essential primitive natural conditions prevailing in this area.

The park contains both temperate and tropical plant communities, including sawgrass prairies, mangrove and cypress swamps, pinelands, and hardwood hammocks, as well as marine and estuarine environments. The park is known for its rich bird life, particularly large wading birds, such as the roseate spoonbill, wood stork, great blue heron and a variety of egrets. This park is the only subtropical preserve in North America and the only place in the world where alligators and crocodiles exist side by side. Everglades National Park has been designated a World Heritage Site, an International Biosphere Reserve, and a Wetland of International Importance.

Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



# Tortugas Marine Reserves

Management Agency: National Oceanic & Atmospheric Administration

## Overview

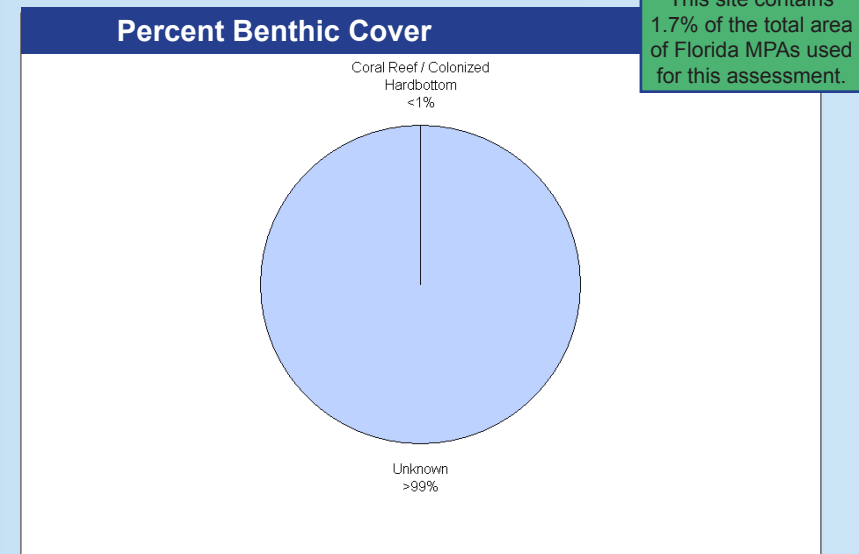
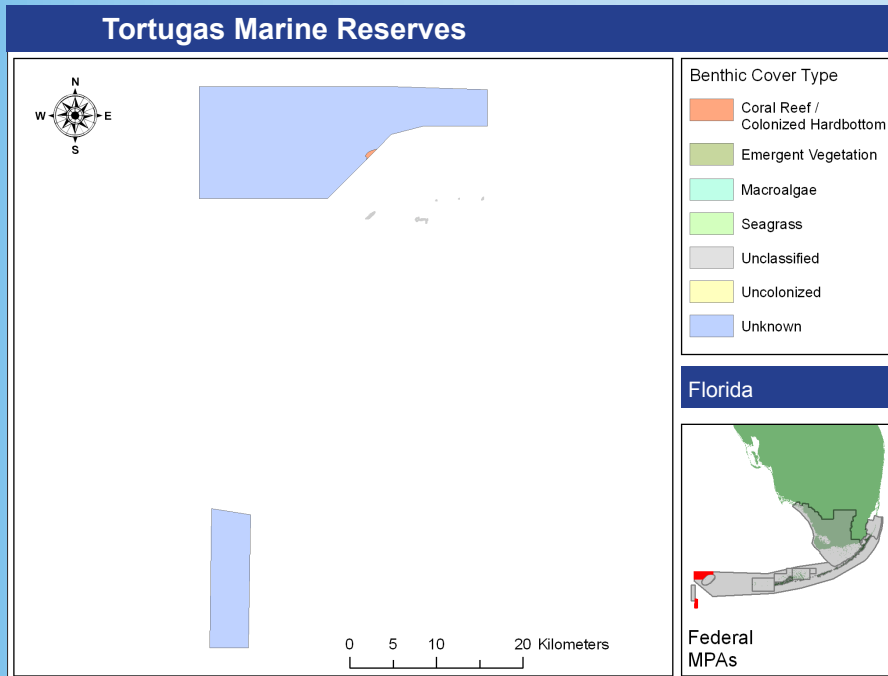
The Tortugas Marine Reserves (Tortugas North and Tortugas South) are located west of Key West and contain some of the healthiest coral reefs found in the Florida Keys. These regions are important because they play a dynamic role in supporting marine ecosystems throughout southern Florida and the Florida Keys. Marine organisms that spawn in the Tortugas produce larvae that spread through the Keys by a persistent system of ocean eddies and currents. In general the Tortugas region, relative to the rest of the Florida Keys, appears to have a greater population abundance and larger average individual size of many key species including groupers, snappers, and lobsters. This reserve contains shallow reef areas, but also areas with depths up to 800 feet deep that have not been fully explored.

The reserves were established to protect both fishing stocks and the coral reef ecosystem from the effects of overfishing and destruction of reef habi-

tat. The refuge helps to ensure the continued abundance and diversity of coral reef resources by protecting the coral structure and spawning fish biomass. An additional expected benefit from the reserve includes enhanced fishing opportunities outside the reserve as fish move between the reserve and surrounding areas. Both fishing and anchoring of fishing vessels are prohibited in these areas.



Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



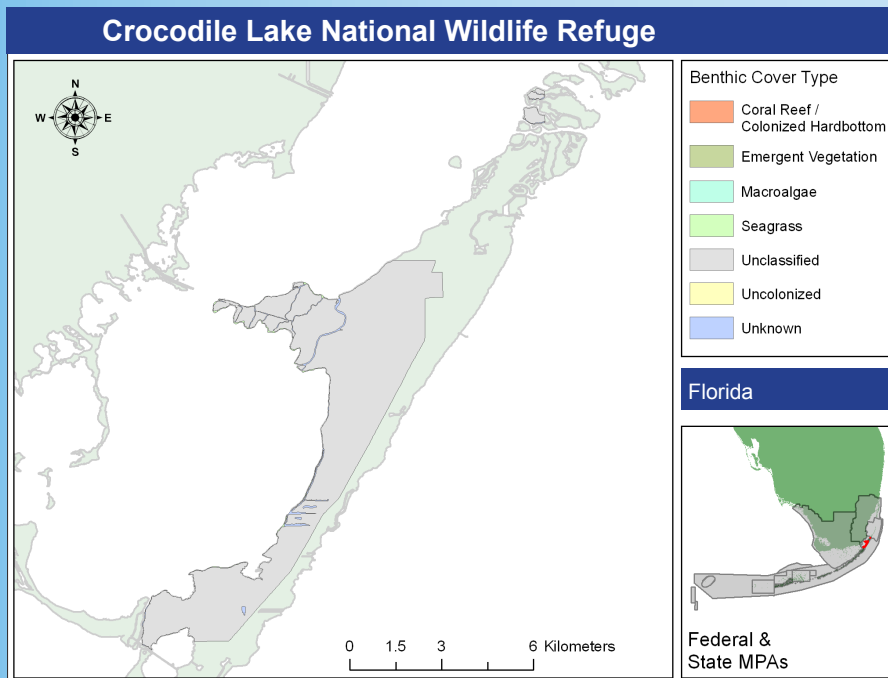
# Crocodile Lake National Wildlife Refuge & OFW

Management Agency: U.S. Fish and Wildlife Service, and Florida Department of Environmental Protection

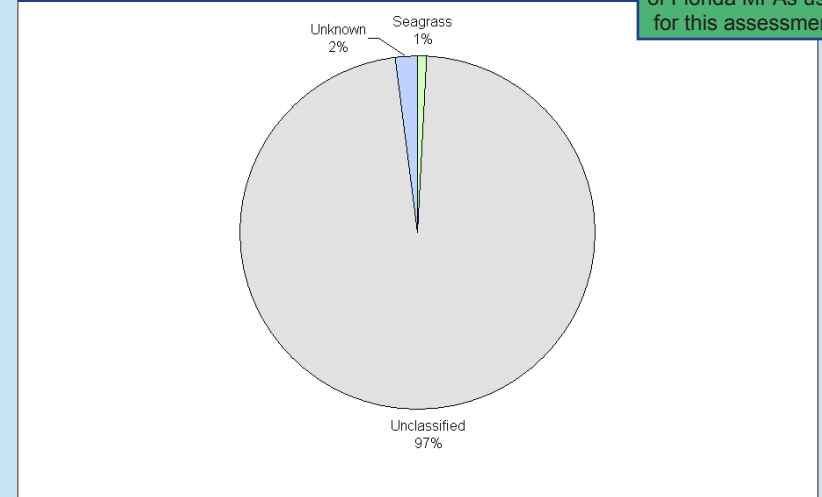
## Overview

Crocodile Lake NWR includes high tropical hardwood hammocks, mangrove forests, small areas of open water, and wetlands. It is a haven for species found nowhere else in the world: the endangered American crocodile, Key Largo woodrat, Key Largo cotton mouse, Schaus' swallowtail butterfly, and the Federally-listed threatened eastern indigo snake.

Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



## Percent Benthic Cover



This site contains 0.1% of the total area of Florida MPAs used for this assessment.

# Great White Heron National Wildlife Refuge & OFW

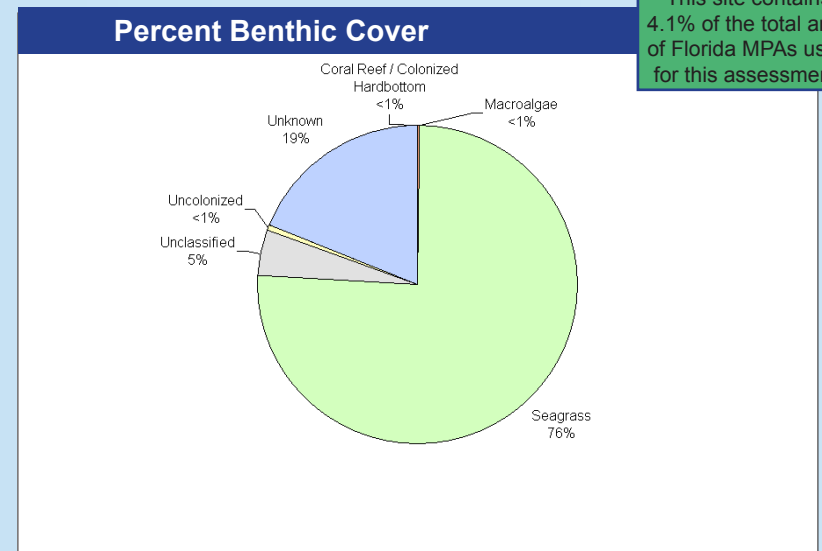
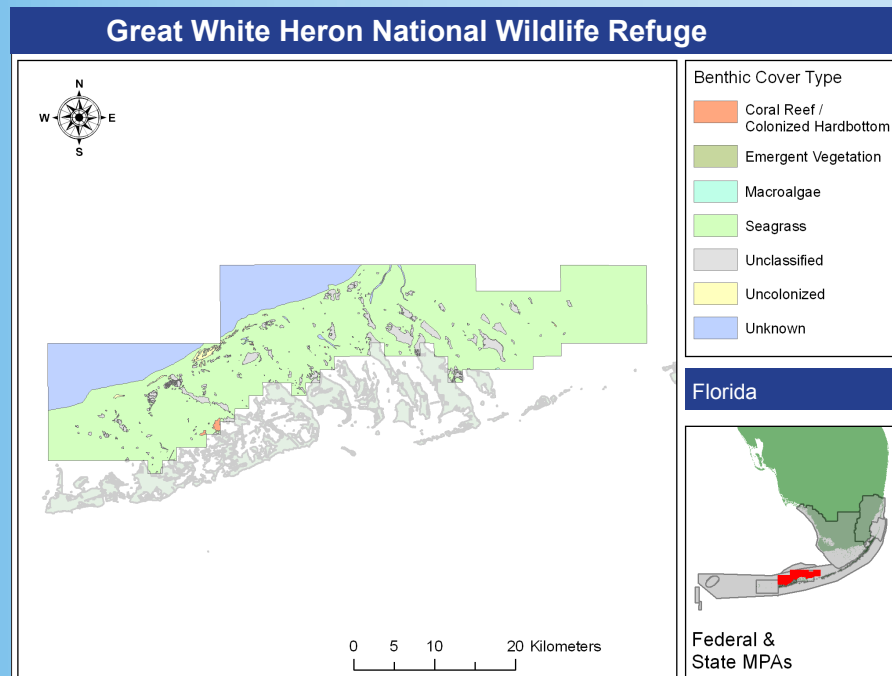
Management Agency: U.S. Fish and Wildlife Service, and Florida Department of Environmental Protection

## Overview

Great White Heron NWR consists of numerous small islands, mostly mangrove dominated, where entire flocks of shorebirds, mergansers, terns, wading birds; in addition to bald eagles and osprey; roost, nest, and loaf. A few of the islands have endangered or threatened sea turtle nesting beaches. An agreement with the state has provided regulations over the submerged lands of the Refuge. These marine habitats contain productive, shallow-water seagrass and coral reef harbottom environments and represent some of the last of the natural Florida Keys.

The site was set aside as a refuge and breeding ground for great white herons and other migratory birds and wildlife.

Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.





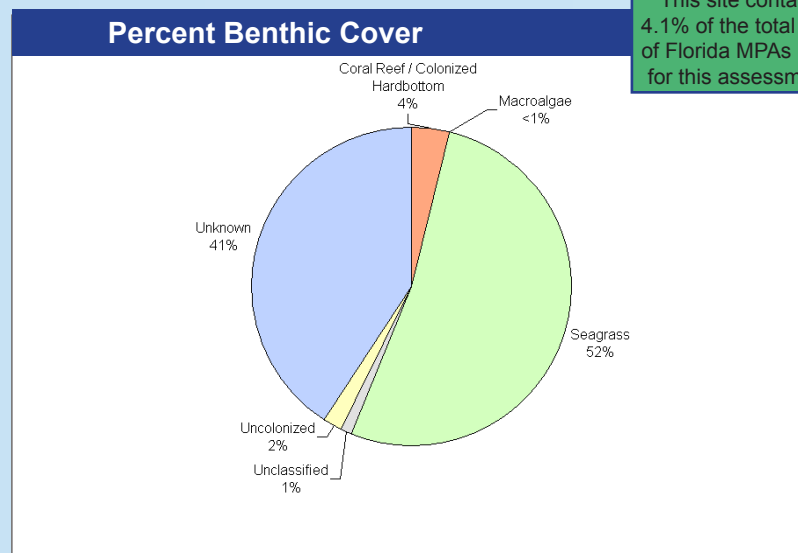
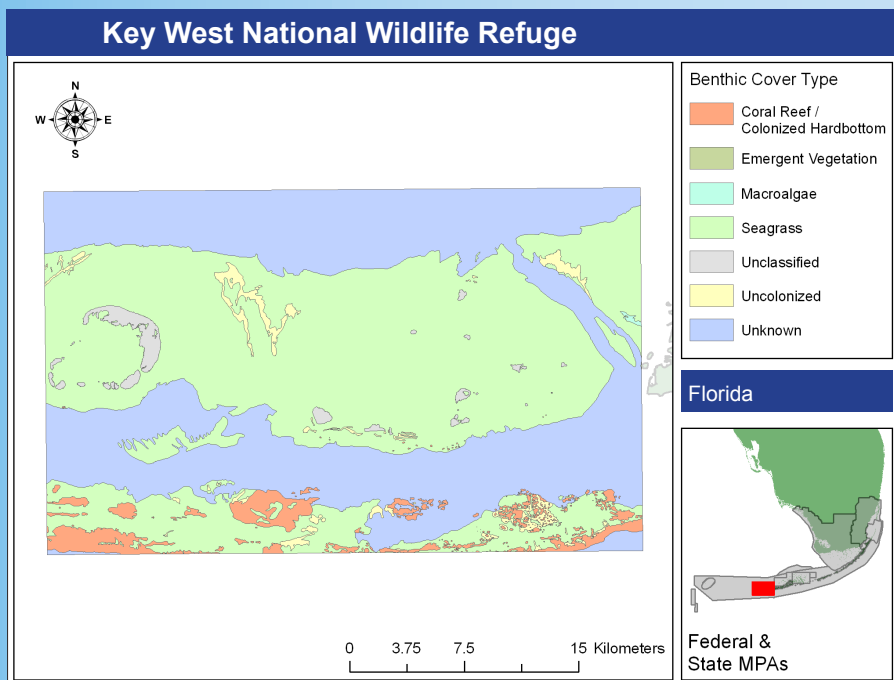
# Key West National Wildlife Refuge & OFW

Management Agency: U.S. Fish and Wildlife Service, and Florida Department of Environmental Protection

## Overview

Key West NWR is located off the western shores of Key West in the Florida Keys in Monroe County. It consists of over 2,000 acres above mean high tide, and over 189,000 acres of open water. The islands of the Refuge contain mangrove forest, sand beaches, and salt ponds. Marine waters contain lush seagrass beds, coral hardbottom, and coral reef. Frigate birds, migrant shorebirds, terns, raptors, and waterfowl use the Refuge. Beaches are habitat for shore birds and nesting endangered Atlantic green, Loggerhead, and Hawksbill sea turtles.

Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



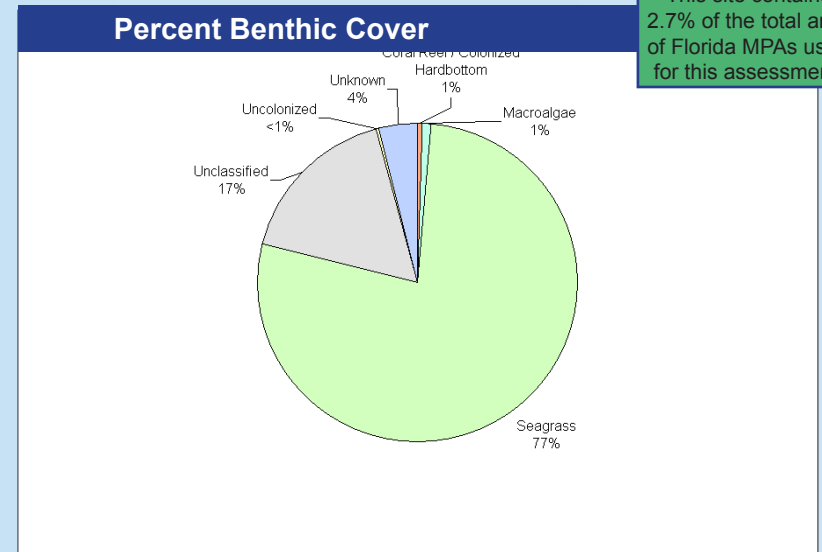
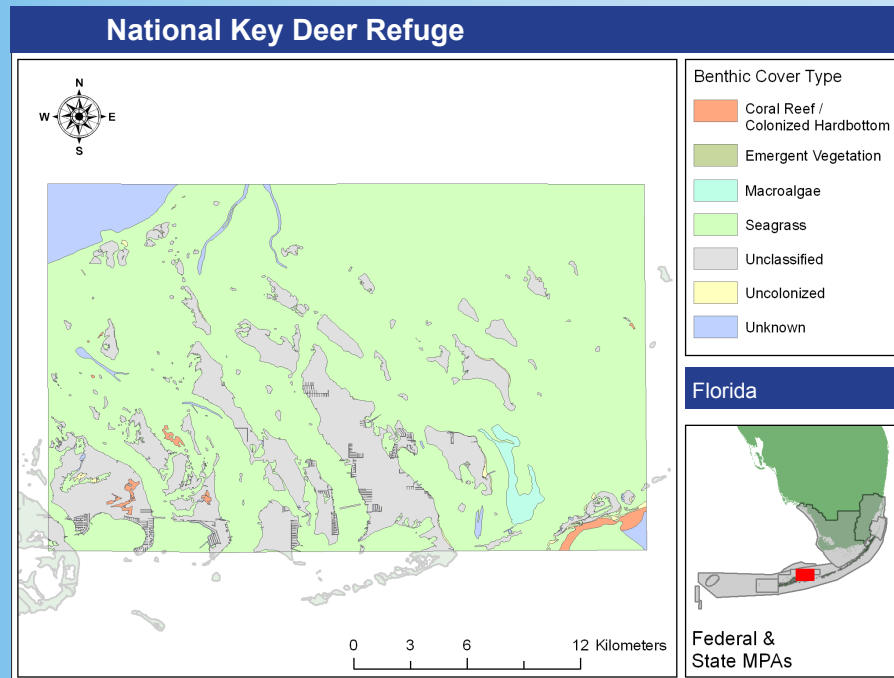
# National Key Deer Refuge & OFW

Management Agency: U.S. Fish and Wildlife Service, and Florida Department of Environmental Protection

## Overview

The National Key Deer Refuge, located in Monroe County, Florida in the Florida Keys, consists of roughly 8,500 acres on Big Pine and No Name Keys and includes other uninhabited small surrounding islands in the lower Florida Keys. The Refuge consists of habitats including the globally endangered pine rockland (slash pinelands) and tropical hardwood hammock, in addition to significant stands of freshwater, mangrove, and transitional wetlands. The Refuge was established in 1957 to protect the endangered Key deer and its habitat.

Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



# Florida Keys National Marine Sanctuary

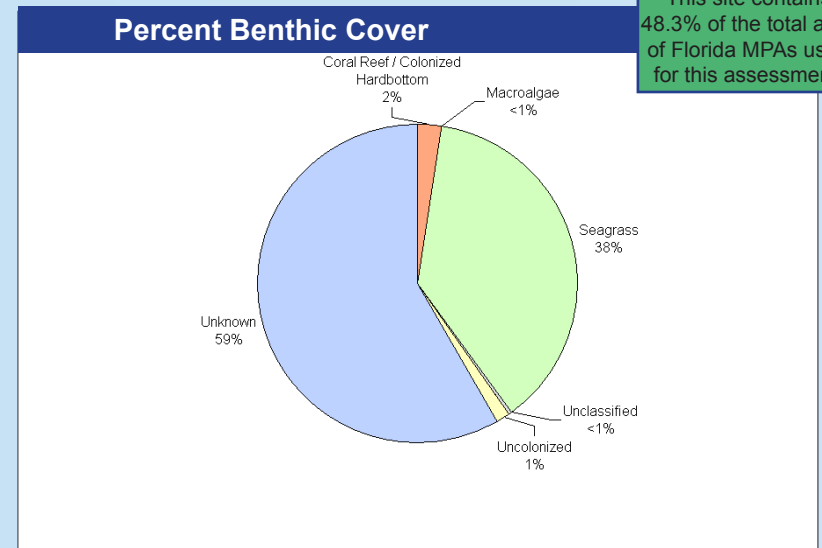
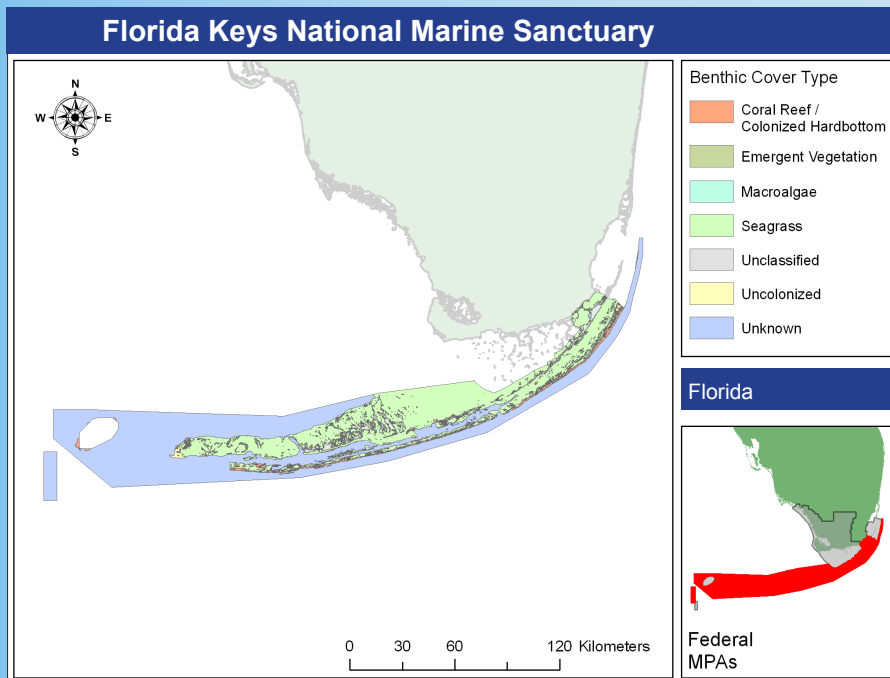
Management Agency: National Oceanic & Atmospheric Administration, and Florida Department of Environmental Protection

## Overview

The Florida Keys marine ecosystem supports one of the most diverse assemblages of underwater plants and animals in North America. Although the Keys are best known for coral reefs, there are many other significant interconnecting and interdependent habitats. These include fringing mangroves, seagrass meadows, hardbottom regions, patch reefs, and bank reefs. This complex marine ecosystem is the foundation for the commercial fishing and tourism based economies that are so important to Florida.

The Florida Keys have diverse stony coral and soft coral species, over 500 species of fish, and unique coral reef formations at many depths.

Source of Overview: U.S. Marine Managed Areas Inventory (2006a), NOAA's National Marine Protected Areas Center.



## Appendix A: National MPA Classification System

The National Classification System was developed by the National MPA Center in an effort to develop a “straightforward and consistent language to accurately describe the many types of MPAs occurring in our waters and to understand their effects on ecosystems and the people that use them” (NOAA National MPA Center, 2006b). A full description of the classification system is available at [www.mpa.gov](http://www.mpa.gov). The system describes MPAs in purely functional terms using five objective characteristics common to most MPAs:

- 1) Conservation Focus – each site was assigned one or more of the following three attributes:
  - a. *Natural Heritage* – established and managed to sustain, conserve, restore and understand the biodiversity, populations, communities, habitats, ecosystems, processes and services of an MPA or MPA zone
  - b. *Cultural Heritage* – established and managed to protect and understand submerged cultural resources
  - c. *Sustainable Production* – established and managed to support the continued extraction of renewable living resources
- 2) Level of Protection Afforded – each site was assigned one of the following six attributes:
  - a. *Uniform Multiple-Use* – Consistent level of protection and allowable activities throughout the MPA
  - b. *Zoned Multiple-Use* – Some extractive activities allowed throughout entire site, but use marine zoning to allocate specific uses to compatible places or times
  - c. *Zoned Multiple-Use with No-Take Areas* – Multiple-use MPAs that contain one or more zones where resource extraction is prohibited
  - d. *No-Take* – MPA sites that allow human access but prohibit resource extraction throughout the area
  - e. *No Impact* – MPAs that allow human access but prohibit all activities that could harm the site’s resources or disrupt the service they provide
  - f. *No Access* – MPAs that restrict all human access to the area unless specifically permitted for designated special uses
- 3) Permanence of Protection – each site was assigned one of the following three attributes:
  - a. *Permanent* – MPAs whose legal authorities provide protection in perpetuity
  - b. *Conditional* – MPAs that have the potential to persist over time but

whose legal authority has a finite duration and must be actively renewed

- c. *Temporary* – MPAs that are designed to address relatively short-term conservation and management needs by protecting a specific habitat or species for a finite duration with no expectation or mechanism for renewal
- 4) Constancy of Protection – each site was assigned one of the following three attributes:
    - a. *Year-round* – MPAs that provide constant protection throughout the year
    - b. *Seasonal* – MPAs that protected specific habitats and resources during fixed seasons or periods
    - c. *Rotating* – MPAs that cycle among a set of fixed geographic areas in order to meet short-term conservation and management goals
  - 5) Ecological Scale of Protection – each site was assigned one of the following two attributes:
    - a. *Ecosystem* – MPAs whose legal authorities and management measures are intended to protect all of the components and processes of the ecosystem(s) within its boundaries
    - b. *Focal Resource* – MPAs whose legal authorities and management measures specifically target a particular habitat, species complex, or single resource

## Appendix B: Florida MPA Classification

Site Name	Conservation Goal	Level of Protection	Permanence of Protection	Constancy of Protection	Scale of Protection	Management Plan
<b>Biscayne Bay Aquatic Preserve*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>Biscayne Bay Aquatic Preserve OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Coupon Bight Aquatic Preserve*</b>	Natural Heritage	Zoned Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>Coupon Bight Aquatic Preserve OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Lignumvitae Key Aquatic Preserve*</b>	Natural Heritage	Zoned Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>Bill Sadowski CWA*</b>	Natural Heritage	No Access	Permanent	Year Round	Focal Resource	No
<b>Pelican Shoal CWA*</b>	Natural Heritage	No Access	Permanent	Seasonal	Focal Resource	No
<b>Biscayne Bay–Card Sound Spiny Lobster Sanctuary*</b>	Sustainable Production	Uniform Multiple-Use	Permanent	Year Round	Focal Resource	No
<b>Coupon Bight OFW</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>East Everglades OFW</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Florida Keys OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Key Largo National Marine Sanctuary OFW</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Looe Key National Marine Sanctuary OFW</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>North Key Largo Hammock OFW</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Bahia Honda State Park*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>Bahia Honda State Park OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Bill Baggs Cape Florida State Park*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	Yes

## Appendix B: Florida MPA Classification

Site Name	Conservation Goal	Level of Protection	Permanence of Protection	Constancy of Protection	Scale of Protection	Management Plan
<b>Bill Baggs Cape Florida State Park OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Curry Hammock State Park*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>Curry Hammock State Park OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Fort Zachary Taylor State Historic Site*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>Fort Zachary Taylor State Historic Site OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Indian Key State Historic Site*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>Indian Key State Historic Site OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>John Pennekamp Coral Reef State Park*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>John Pennekamp Coral Reef State Park OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Key Largo Hammock State Botanical Site*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>Key Largo Hammock State Botanical Site OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Lignumvitae Key Botanical State Park*</b>	Natural Heritage	Zoned Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>Lignumvitae Key Botanical State Park OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Long Key State Recreation Area*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>Long Key State Recreation Area OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Oleta River State Park*</b>	Natural Heritage	Zoned Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>Oleta River State Park OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No

## Appendix B: Florida MPA Classification

Site Name	Conservation Goal	Level of Protection	Permanence of Protection	Constancy of Protection	Scale of Protection	Management Plan
<b>San Pedro Underwater Archaeological Preserve State Park*</b>	Natural & Cultural Heritage	No-Take	Permanent	Year Round	Ecosystem	Yes
<b>San Pedro Underwater Archaeological Preserve State Park OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>The Barnacle Historic State Park*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>Windley Key Fossil Reef Geological State Park*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>Windley Key Fossil Reef Geological State Park OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Biscayne Bay SWIM Area*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>Florida Keys WEA*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>Biscayne National Park**</b>	Natural Heritage & Cultural Heritage	Zoned Multiple- Use	Permanent	Year Round	Ecosystem	Yes
<b>Biscayne National Park OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Biscayne National Park, Sponge Harvest Prohibited Area*</b>	Sustainable Production	Uniform Multiple-Use	Permanent	Year Round	Focal Resource	No
<b>Biscayne National Park, Tropical Ornamental Marine Species Harvest Prohibited Area*</b>	Sustainable Production	Uniform Multiple-Use	Permanent	Year Round	Focal Resource	No
<b>Dry Tortugas National Park**</b>	Natural Heritage & Cultural Heritage	Zoned w/ No Take Areas	Permanent	Year Round	Ecosystem	Yes
<b>Dry Tortugas National Park OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Everglades National Park**</b>	Natural Heritage & Cultural Heritage	Zoned w/ No Take Areas	Permanent	Year Round	Ecosystem	Yes
<b>Everglades National Park OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Florida Keys National Marine Sanctuary***</b>	Natural Heritage & Cultural Heritage	Zoned w/ No Take Areas	Conditional	Year Round	Ecosystem	Yes

## Appendix B: Florida MPA Classification

Site Name	Conservation Goal	Level of Protection	Permanence of Protection	Constancy of Protection	Scale of Protection	Management Plan
<b>Tortugas Marine Reserves**</b>	Natural Heritage & Sustainable Production	No Take	Permanent	Year Round	Ecosystem	Yes
<b>Crocodile Lake National Wildlife Refuge**</b>	Natural Heritage	No Access	Permanent	Year Round	Focal Resource	Yes
<b>Crocodile Lake National Wildlife Refuge OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Great White Heron National Wildlife Refuge**</b>	Natural Heritage & Sustainable Production	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>Great White Heron National Wildlife Refuge OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Key West National Wildlife Refuge**</b>	Natural Heritage & Sustainable Production	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>Key West National Wildlife Refuge OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>National Key Deer Refuge**</b>	Natural Heritage	No Take	Permanent	Year Round	Focal Resource	Yes
<b>National Key Deer Refuge OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No

\* State MPA

\*\* Federal MPA

\*\*\* Joint State/Federal MPA



## Appendix C: Benthic Cover (km<sup>2</sup>) by Site

	Coral	Macroalgae	Seagrass	Unclassified	Uncolonized	Unknown	Total
<b>Biscayne Bay Aquatic Preserve &amp; OFW*</b>	0.000	0.223	200.031	10.161	3.362	66.049	279.826
<b>Coupon Bight Aquatic Preserve &amp; OFW*</b>	0.058	0.000	18.175	0.498	0.003	0.051	18.786
<b>Lignumvitae Key Aquatic Preserve &amp; OFW*</b>	0.000	0.000	33.411	0.192	0.028	0.000	33.631
<b>Bill Sadowski CWA*</b>	0.000	0.000	1.898	0.445	0.039	0.019	2.401
<b>Pelican Shoal CWA*</b>	0.000	0.000	0.000	0.001	0.000	0.000	0.001
<b>Biscayne Bay–Card Sound Spiny Lobster Sanctuary*</b>	0.000	0.000	478.605	22.832	0.403	27.512	529.352
<b>Coupon Bight OFW*</b>	0.029	0.000	12.373	12.710	0.006	0.223	25.341
<b>East Everglades OFW*</b>	0.000	0.000	0.000	157.181	0.000	0.000	157.181
<b>Florida Keys OFW*</b>	89.414	6.569	2811.832	331.184	36.439	1141.725	4417.162
<b>Key Largo National Marine Sanctuary OFW*</b>	50.559	0.000	120.318	0.000	14.956	181.788	367.620
<b>Loe Key National Marine Sanctuary OFW*</b>	2.735	0.000	7.532	0.000	1.793	5.128	17.188
<b>North Key Largo Hammock OFW*</b>	0.000	0.000	1.153	15.743	0.000	0.811	17.708
<b>Bahia Honda State Park &amp; OFW*</b>	0.000	0.000	0.561	1.362	0.038	0.036	1.996
<b>Bill Baggs Cape Florida State Park &amp; OFW*</b>	0.000	0.000	0.003	1.673	0.000	0.077	1.754
<b>Curry Hammock State Park &amp; OFW*</b>	0.000	0.000	1.484	2.454	0.000	0.006	3.943
<b>Fort Zachary Taylor State Historic Site &amp; OFW*</b>	0.000	0.000	0.055	0.155	0.000	0.011	0.221
<b>Indian Key State Historic Site &amp; OFW*</b>	0.000	0.000	0.383	0.066	0.000	0.000	0.449
<b>John Pennekamp Coral Reef State Park &amp; OFW*</b>	4.208	0.000	235.407	14.974	0.927	0.675	256.191
<b>Key Largo Hammock State Botanical Site &amp; OFW*</b>	0.000	0.000	0.523	10.073	0.000	0.169	10.765
<b>Lignumvitae Key Botanical State Park &amp; OFW*</b>	0.000	0.000	40.115	2.459	0.017	0.005	42.595
<b>Long Key State Recreation Area &amp; OFW*</b>	0.000	0.000	0.839	3.127	0.000	0.000	3.965

## Appendix C: Benthic Cover (km<sup>2</sup>) by Site

	Coral	Macroalgae	Seagrass	Unclassified	Uncolonized	Unknown	Total
Oleta River State Park & OFW*	0.000	0.000	0.093	3.566	0.006	0.532	4.197
San Pedro Underwater Archaeological Preserve State Park & OFW*	0.000	0.000	2.616	0.000	0.000	0.000	2.616
The Barnacle Historic State Park & OFW*	0.000	0.000	0.016	0.022	0.000	0.000	0.038
Windley Key Fossil Reef Geological State Park & OFW*	0.000	0.000	0.000	0.131	0.000	0.000	0.131
Biscayne Bay SWIM Area & OFW*	0.492	0.223	835.200	2536.284	9.173	175.001	3556.373
Florida Keys WEA & OFW*	0.000	0.000	0.419	10.093	0.001	0.018	10.531
Biscayne National Park, OFW, SHPA, & TOMSHPA*	36.202	0.000	566.090	31.765	27.975	51.585	713.617
Dry Tortugas National Park & OFW**	93.411	0.000	44.736	0.393	3.565	138.007	280.112
Everglades National Park & OFW**	0.000	0.000	1255.900	4120.293	8.569	868.595	6253.356
Florida Keys National Marine Sanctuary***	245.163	5.146	3707.510	26.919	143.345	5772.722	9900.805
Tortugas Marine Reserves**	0.460	0.000	0.000	0.000	0.000	348.402	348.402
Crocodile Lake National Wildlife Refuge & OFW**	0.000	0.000	0.219	28.565	0.000	0.539	29.323
Great White Heron National Wildlife Refuge & OFW**	1.390	0.208	638.485	39.128	4.179	160.479	843.870
Key West National Wildlife Refuge & OFW**	32.969	0.396	442.896	10.587	15.231	347.616	849.696
National Key Deer Refuge & OFW**	3.268	4.564	434.885	95.338	1.614	21.350	541.018

\* State MPA

\*\* Federal MPA

\*\*\* Joint State/Federal MPA

Note: Area calculated in Eckert IV, WGS84 using XTools Pro 3.2.0 extension for ArcMap™ 9.1

## Appendix D: MPAs Not Included In Assessment

Site Name	Conservation Goal	Level of Protection	Permanence of Protection	Constancy of Protection	Scale of Protection	Management Plan
<b>Biscayne Canal No Entry Zone*</b>	Natural Heritage	No Access	Permanent	Seasonal	Focal Resource	No
<b>Black Creek Canal No Entry Zone*</b>	Natural Heritage	No Access	Permanent	Year Round	Focal Resource	No
<b>Coral Gables Canal No Entry Zone*</b>	Natural Heritage	No Access	Permanent	Seasonal	Focal Resource	No
<b>Fisher Island Motorboats Prohibited Zone*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Focal Resource	No
<b>FPL Riviera Beach Power Plant Motorboats Prohibited Zone*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Seasonal	Focal Resource	No
<b>Hobe Sound National Wildlife Refuge OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Hugh Taylor Birch State Recreation Area*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>Hugh Taylor Birch State Recreation Area OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Jensen Beach to Jupiter Inlet Aquatic Preserve*</b>	Natural Heritage	Zoned Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>Jensen Beach to Jupiter Inlet Aquatic Preserve OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>John D. MacArthur Beach State Park*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>John D. McArthur Beach State Park OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>John U. Lloyd Beach State Park*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>John U. Lloyd Beach State Park OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Jonathan Dickinson State Park*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>Jonathan Dickinson State Park OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Lauderdale Power Plant No Entry Zone*</b>	Natural Heritage	No Access	Permanent	Year Round	Focal Resource	No
<b>Little River No Entry Zone*</b>	Natural Heritage	No Access	Permanent	Seasonal	Focal Resource	No
<b>Loxahatchee River–Lake Worth Creek Aquatic Preserve*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	Yes

## Appendix D: MPAs Not Included In Assessment

Site Name	Conservation Goal	Level of Protection	Permanence of Protection	Constancy of Protection	Scale of Protection	Management Plan
<b>Loxahatchee River–Lake Worth Creek Aquatic Preserve OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Manatee Speed Zones*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round & Seasonal	Focal Resource	No
<b>Martin County Tracts OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>North Beach OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>North Fork, St. Lucie Aquatic Preserve*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>North Fork, St. Lucie Aquatic Preserve OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Port Everglades Power Plant No Entry Zone*</b>	Natural Heritage	No Access	Permanent	Year Round	Focal Resource	No
<b>Seabranh OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Seabranh Preserve State Park*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>St. Lucie Inlet Preserve State Park*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>St. Lucie Inlet Preserve State Park OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>Virginia Key No Entry Zone*</b>	Natural Heritage	No Access	Permanent	Year Round	Focal Resource	No
<b>Westlake OFW*</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	No
<b>East Florida Coast Closed Area**</b>	Natural Heritage & Sustainable Production	Uniform Multiple-Use	Permanent	Year Round	Focal Resource	Yes
<b>Hobe Sound National Wildlife Refuge**</b>	Natural Heritage	Uniform Multiple-Use	Permanent	Year Round	Ecosystem	Yes
<b>Southeastern United States Observer Area**</b>	Natural Heritage & Sustainable Production	Uniform Multiple-Use	Permanent	Seasonal	Focal Resource	Yes

\* State MPA

\*\* Federal MPA

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## For More Information

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