FDOU Project 26A Part 5 Task 5 – *Our Florida Reefs* (OFR)
Marine Planner Metadata

Florida Department of Environmental Protection
Coral Reef Conservation Program
Project 26A Part 5 Task 5

FDOU Project 26A Part 5 Task 5 – *Our Florida Reefs* (OFR) Marine Planner Metadata

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Coral Reef Conservation Program
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Project 26A Part 5 Task 5

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Executive Summary

Task 5 was to maintain documentation and prepare a report on the treatment and presentation of datasets within the OFR Marine Planner, specifically those layers used to filter planning units. Nova Southeastern University (NSU) coordinated with FDEP-CRCP, and other agency partners, to collate and maintain information regarding those data layers used to filter planning units within the Marine Planner, to be summarized in the report. NSU maintained documentation on the rationale of why datasets were presented in the final chosen format including why that was the most reasonable or applicable way to display and sort the information for the *Our Florida Reefs* Process. For example, in the case of the Reef Visual Census data which had multiple data sites within a planning unit, documenting which data were ultimately displayed and why (in this case the maximum number of fish at any of those given sites was the reported max, i.e. the max was not an average of the three sites). NSU documented limitations, caveats, and considerations of data layers that were summarized to planning units within the marine planner. NSU documented and maintained metadata basics for each layer (including those not used to filter planning units).

This report includes the information tabulated during the OFR Decision Support Tool planning unit grid development and the data layers currently in the online Marine Planner.

List of Acronyms

AP - Aquatic Preserves
AHED - Arc Hydro Enhanced Database
BCA - Broward County Acropora
BAS - Census Bureau's Boundary and Annexation Survey
CAMA - Coastal and Aquatic Managed Areas
CWG - Community Working Group
COGO - COordinate GeOmetry
DRM - Disturbance Response Monitoring
DMF - Division of Marine Fisheries Management
ER - Ecological Reserve
ENC - Electronic Navigational Charts
ESA - Endangered Species Act
ESI - Environmental Sensitivity Index
EFH - Essential Fish Habitat-
EMA - Existing Management Area
FWRI - Fish and Wildlife Research Institute
FDOU - Fishing, Diving, and Other Uses
FCRT - Florida Coral Reef Tract
FDEP - Florida Department of Environmental Protection
FDOR - Florida Department of Revenue
FDOT - Florida Department of Transportation
FWC - Florida Fish and Wildlife Conservation Commission
FGDL - Florida Geographic Data Library
FKNMS - Florida Keys National Marine Sanctuary
FRRP - Florida Reef Resilience Program
GIS - Geographic Information Systems
GWIS - Gulf-Wide Information System
HAPC - Habitat Areas of Particular Concern
ICA - Inlet Contributing Areas
IMO - International Maritime Organization
JCP - Joint Coastal Permit
LADS - Laser Airborne Depth Sounding
LIDAR - Light Detection and Ranging
MTDB - MAF/TIGER database
MPA - Marine Protected Areas
MRGIS - Marine Resource GIS
MICCI - Maritime Industry and Coastal Construction Impacts
NMFS - National Marine Fisheries Service
NFMS-SEFSC - National Marine Fisheries Southeast Fisheries Science Center
NOS - National Ocean Service
NOAA - National Oceanic and Atmospheric Administration
NPS - National Parks Service
NPDES - National Pollutant Discharge Elimination System
NWI - National Wetlands Inventory

NAIS - Nationwide Automatic Identification System
NOAA ENC - NOAA's Electronic Navigational Chart's
NSU - Nova Southeastern University
OTIS - Office of Technology and Information Services
OSC - Operation Systems Center
OFR - Our Florida Reefs
OFW - Outstanding Florida Waters,
PPT - Process Planning Team
POTW - Publicly Owned Treatment Works
RVC - Reef Visual Census
RBNERR - Rookery Bay National Estuarine Research Reserve
SPA - Sanctuary Preservation Area
SSU - Secondary Survey Unit
SORIND - Source Indication
SE FL - Southeast Florida
SFWMD - South Florida Watershed Management District
SECREMP - Southeast Coral Reef Evaluation & Monitoring Project
SEFCRI - Southeast Florida Coral Reef Initiative
SMZ - Special Management Zones
SUA - Special Use Area
SNBS - Statewide Nesting Beach Survey program
TNC - The Nature Conservancy
MAF/TIGER - U.S. Census Bureau's Master Address File / Topologically Integrated Geographic Encoding and Referencing
USCG - United States Coast Guard
USFWS - United States Fish and Wildlife Service
USGS - United States Geological Survey
UM-RSMAS - University of Miami's Rosenstiel School of Marine and Atmospheric Science

1. INTRODUCTION

In 2004 the Southeast Florida Coral Reef Initiative (SEFCRI) identified 140 local action strategies to better understand and manage southeast Florida coral reefs. Within the Fishing, Diving, and Other Uses (FDOU) priority threat area, Project 26 to "Organize and hold public workshops to obtain input on the condition and usage trends, possible resource goals, and the potential (i.e. rationale, effectiveness, alternative approaches, etc.) of traditional fishery management and special management zones to achieve targets…", was developed as a stakeholder driven community planning process called *Our Florida Reefs* (OFR). The OFR process began in June 2013, with a series of informational meetings for the residents and stakeholders of the southeast Florida region from Miami-Dade, Broward, Palm Beach, and Martin counties about the purpose of the process and how they could be involved. Then applications were accepted to select approximately fifty stakeholders from all four counties to serve on a North and South Community Working Group (CWG). Those CWGs of agency and non-agency individuals are spending approximately 24 months representing their stakeholder groups and developing recommended management actions for the reefs of southeast Florida.

At the early stages of OFR, a Process Planning Team (PPT) dedicated to planning the details was formed. The PPT identified the need for a mapping and spatial analysis program or application throughout the decision making process to allow for visual representation of data and information to all stakeholders, to allow for surveying of stakeholders, to provide working group members with a tool to conduct real-time analysis and planning, to model potential outcomes of different management options, and for other needs that may arise throughout the OFR process. Existing software and web based applications were assessed for the ability to incorporate various local datasets, run smoothly on various operating systems, run smoothly on various devices, ease of use for stakeholders and citizens not familiar with mapping or spatial analysis programs, usability and understandability of product outputs for the OFR, probable amount of time required for upkeep and maintenance, and cost (Walker and Costaregni 2013). This analysis determined that Point 97 (formerly Ecotrust) was the only software that could meet all of the OFR needs. Florida Department of Environmental Protection (FDEP) contracted Point 97 and Nova Southeastern University to customize the Point 97 online decision support tool, Marine Planner, for SEFCRI and OFR.

The purpose of this report is to document the pertinent information about the Marine Planner layers including the treatment and presentation of datasets within the decision support tool. If a dataset was used within the decision support software, it will be indicated by having information under the "Filter" heading within this report. If a dataset was not used within the decision support software, it will be indicated by a "None" under the "Filter" heading. Data layer metadata basics for each layer as well as limitation, caveats, and considerations to data that were summarized to planning units within the Marine Planner are documented.

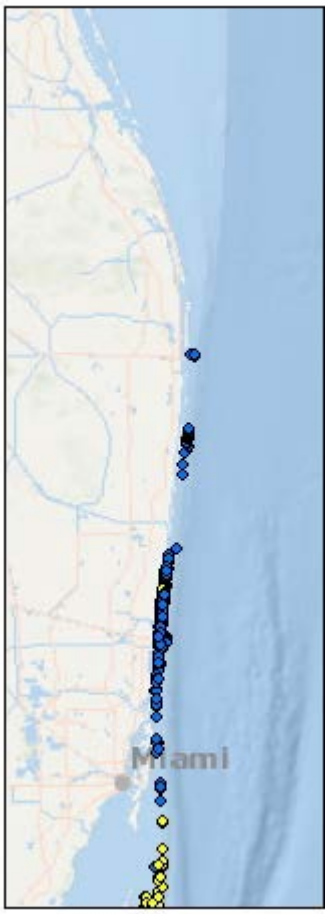
2. CORAL SHAPEFILE METADATA

2.1. Acropora Species Present

Acropora Species Present

Description:

The reported sightings of *Acropora palmata* and *Acropora cervicornis*. The National Oceanic and Atmospheric Administration (NOAA) and the Florida Fish and Wildlife Conservation Commission (FWC) have embarked upon a collaborative effort to produce an online tool to allow for the open dissemination of Acropora-related datasets. An ArcGIS geodatabase has been built with the purpose of effective and accurate depiction of benthic data related to *Acropora palmata* and *A. cervicornis*. The geodatabase has been populated with significant multi-agency data from federal, state, university and non-government organizations. These agencies include NOAA, National Park Service, FWC, University of Miami, University of North Carolina - Wilmington, National Coral Reef Institute and The Nature Conservancy. All datasets include *Acropora spp.* presence/absence and latitudinal /longitudinal coordinates at the minimum. This project was funded by award NA1ONMF4720029 from the National Oceanic and Atmospheric Administration/National Marine Fisheries Service, U.S. Department of Commerce.



Both Acropora species present

Credits:

Florida Fish and Wildlife Conservation Commission.

Use limitations:

Not for distribution without prior consent. This dataset contains data from all previous coral sightings. It should not be assumed that areas devoid of points do not contain *Acropora spp.*. This dataset does not indicate the absence of colonies. Survey effort was not equal among all areas of the dataset and no concerted effort using consistent survey methodology was used. It represents that at some point in the past *Acropora spp.* was found at these locations. There is no indication if the colony still exists.

Filter: None.

2.2. FRRP Coral Data

2.2.1. Coral Colony Bleaching Index (FRRP)

Southeast FL FRRP Coral Data 2010-2012
Coral Colony Bleaching Index

Description:

The Florida Reef Resilience Program (FRRP) Disturbance Response Monitoring (DRM) was developed for monitoring shallow coral reefs from the Florida Keys to Martin County. The DRM consists of a probabilistic sampling design and a stony coral condition monitoring protocol implemented during the annual period of peak thermal stress. Each year since 2005, survey teams from federal, state, and local government agencies, universities and non-governmental organizations cooperate to complete surveys across the south Florida Reef Tract within a six to eight week period. Surveyors include: The Nature Conservancy, Mote Marine Laboratory, University of Miami, Nova Southeastern University, Miami-Dade County, Broward County, Palm Beach County, Florida Fish and Wildlife Conservation Commission, Florida Department of Environmental Protection, National Park Service, and National Oceanic and Atmospheric Administration. Since 2005, 1658 surveys have been completed. This layer is a compilation of data from 2010-2012 illustrating the number of corals identified at each site for the SEFCRI region in southeast Florida.

Credits:

The Nature Conservancy; NOAA Center for Coastal Monitoring and Assessment

Use limitations: These data were created for the southeast Florida region as a recent snapshot of coral bleaching. The three previous years' data were combined and analyzed together. The data show FRRP surveys where the bleaching index was low (0 – 0.01) to high (>1.7). The data were binned and displayed according to the natural breaks. The data were used to spatially visualize sites of relatively low and high disease and possibly target certain areas of the reef for increased management.

Filter: Yes. Contains a Minimum/Maximum slider to include or exclude planning units that contain at least one FRRP site with a value greater than 0 in the site bleaching index.(FRRP data)

2.2.2. Coral Colony Disease Index (FRRP)

SEFCRI FRRP Coral Data 2010-2012
Coral Colony Disease Index

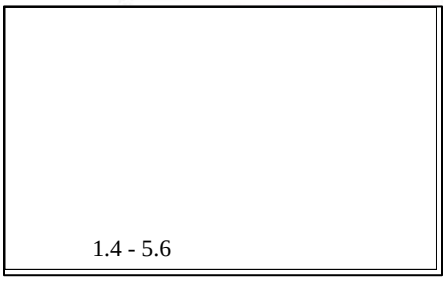
Description:

The Florida Reef Resilience Program (FRRP) Disturbance Response Monitoring (DRM) was developed for monitoring shallow coral reefs from the Florida Keys to Martin County. The DRM consists of a probabilistic sampling design and a stony coral condition monitoring protocol implemented during the annual period of peak thermal stress. Each year since 2005, survey teams from federal, state, and local government agencies, universities and non-governmental organizations cooperate to complete surveys across the south Florida Reef Tract within a six to eight week period. Surveyors include: The Nature Conservancy, Mote Marine Laboratory, University of Miami, Nova Southeastern University, Miami-Dade County, Broward County, Palm Beach County, Florida Fish and Wildlife Conservation Commission, Florida Department of Environmental Protection, National Park Service, and NOAA. Since 2005, 1658 surveys have been completed. This layer is a compilation of data from 2010-2012 illustrating the number of corals identified at each site for the southeast Florida region.

Credits:

The Nature Conservancy; NOAA Center for Coastal Monitoring and Assessment

Use limitations: These data were created for the southeast Florida region as a recent snapshot of coral disease. The three previous years' data were combined and analyzed together. The data show FRRP surveys where the disease index was low (0 – 0.4) to high (>1.4). The data were binned and displayed according to the natural breaks. The data were used to spatially visualize sites of relatively low and high disease and possibly target certain areas of the reef for increased management.



Filter: Yes. Contains a Minimum/Maximum slider to include or exclude planning units that contain at least one FRRP site with a value greater than 0 in the site disease index.(FRRP data)

2.2.3. Coral Resilience Index (FRRP)

SEFCRI FRRP Coral Data 2010-2012
Coral Resilience Index

Description:

The Florida Reef Resilience Program (FRRP) Disturbance Response Monitoring (DRM) was developed for monitoring shallow coral reefs from the Florida Keys to Martin County. The DRM consists of a probabilistic sampling design and a stony coral condition monitoring protocol implemented during the annual period of peak thermal stress. Each year since 2005, survey teams from federal, state, and local government agencies, universities and non-governmental organizations cooperate to complete surveys across the south Florida Reef Tract within a six to eight week period. Surveyors include: The Nature Conservancy, Mote Marine Laboratory, University of Miami, Nova Southeastern University, Miami-Dade County, Broward County, Palm Beach County, Florida Fish and Wildlife Conservation Commission, Florida Department of Environmental Protection, National Park Service, and NOAA. Since 2005, 1658 surveys have been completed. This layer is a compilation of data from 2010-2012 illustrating the number of corals identified at each site for the southeast Florida region. The dataset includes an index of reef resilience (see VanWoesik and Burman 2012) of benthic stony corals collected from multiple habitat types across the south Florida shelf from St. Lucie Inlet to Biscayne Bay for years 2005 through 2014. Resilience Index was the result of Coral density class, minus the Bleaching Index class, minus the Disease Index class. Sites in red have relatively high coral cover and low bleaching and disease prevalence.

Credits:

The Nature Conservancy; NOAA Center for Coastal Monitoring and Assessment

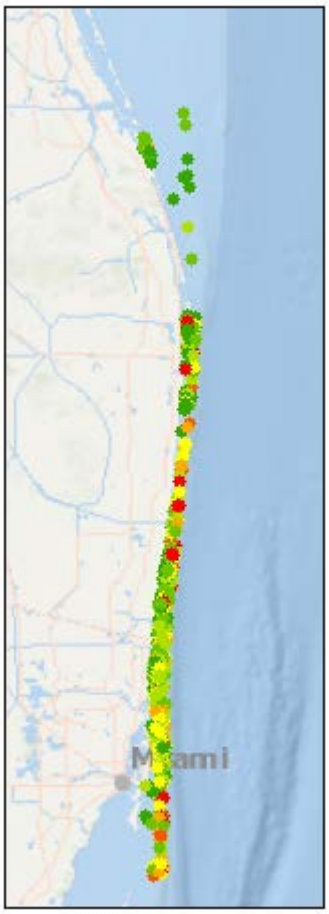
Use limitations: This dataset was compiled to inform the Southeast Florida Coral Reef Initiative "Our Florida Reefs" management process. The data were used to spatially visualize potentially resilient coral sites and possibly target certain areas of the reef for increased management.

Filter:

Yes. Contains a Minimum/Maximum slider to include or exclude planning units where a coral resilience index was estimated based on coral density, bleaching occurrence, and disease prevalence. (FRRP database)

2.3. Coral Density

Coral Density (corals per unit area)



3.1 - 12.8

Description:

Benthic data were compiled from a variety of sources for the southeast Florida region for this layer. The main data source was from a recent FDEP study that conducted a power analysis to understand the level of surveying needed to detect change of certain benthic types including stony coral, soft coral, and sponges (Fauth 2012). This dataset was acquired and updated with the latest information for monitoring stations and other large surveys that took place since. FRRP data were downloaded from TNC's website from 2005 – 2014. SECREMP and Broward monitoring data were updated with 2013 data. Several quantitative surveys for mapping efforts were included. Martin county mapping (2011), Town of Palm Beach nearshore mapping (2014), and SE FL Nearshore Benthic habitat mapping data (2013) were all added. The anchorage sites for the FDEP Port of Miami study were added. Coral density is the number of corals per unit area (m^2). Coral density within each study was calculated where possible with the data in hand. The maximum value of coral density from any given survey within the planning unit.

Credits:

TNC; Fauth, J.; Walker, B.K.; NOAA Center for Coastal Monitoring and Assessment

Use limitations: Because all studies did not use consistent survey methods there are a number of considerations. Some sites were targeted and others were randomized. This may introduce bias if those chosen were known to be high density sites. Different survey footprints may bias outcomes depending on the natural variance in the populations. In planning units with multiple surveys, the maximum density value between all surveys was used because at least that amount had been measured somewhere in that area. In studies where certain information was not collected, those columns received a value of "-9". This is the integer equivalent to Not Applicable.

Filter:

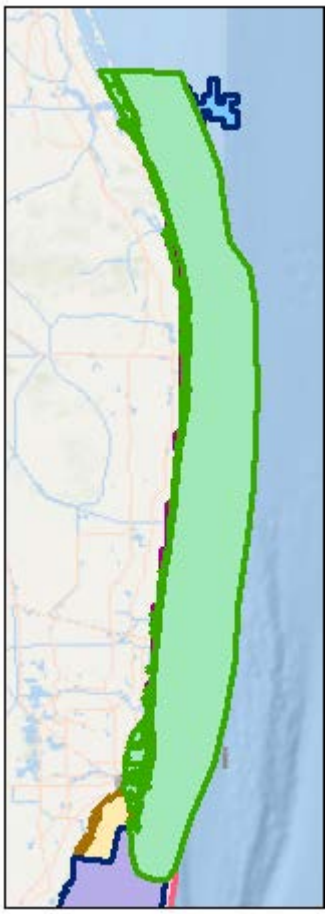
Yes. The maximum value of coral density, from all compiled benthic survey sites within the Planning Unit, is provided. Contains a Minimum/Maximum slider to include or exclude planning units with the defined number of corals per square meter area.

2.4. Coral Reef and Live Hardbottom EFH-HAPC

Coral Reef and Live Hard Bottom EFH-HAPC

Description:

The spatial representation of areas which for Coral, Coral Reef, and Live Hard Bottom ranked high in terms of ecological function, sensitivity, probability of stressor introduction, and/or criteria established for designation of Essential Fish Habitat-Habitat Areas of Particular Concern (EFH-HAPC). This layer is not considered complete at this date.



Essential Fish Habitat (EFH) that is judged to be particularly important to the long-term productivity of populations of one or more managed species, or to be particularly vulnerable to degradation, should be identified as "habitat areas of particular concern" (HAPC) to help provide additional focus for conservation efforts. As a result of the Sustainable Fisheries Act Amendment to the Magnuson-Stevens Fishery Conservation and Management Act in 1996 the Councils and the NMFS have been mandated to use an ecosystem approach in managing the Nation's Fisheries. The Council has taken the first step with the approval of the Habitat Plan identifying and describing in detail essential fish habitat (EFH) for species managed throughout the South Atlantic and with the approval of the Comprehensive Habitat Amendment amending all existing FMPs to include descriptions of EFH and EFH-habitat areas of particular concern (EFH-HAPCs).

Credits:

South Atlantic Fishery Management Council

Use limitations: None. This layer is not considered complete at this date. SAFMC anticipates enhancing this file as more data becomes available.

Filter: None.

SEAMAP Offshore Hard Bottom

2.5. Coral Percent Cover

Coral Percent Cover

Description:

Survey locations where the percent cover of coral species was quantified. Benthic data were compiled from a variety of sources for the SEFCRI region for this layer. The main data source was from a recent FDEP study that conducted a power analysis to understand the level of surveying needed to detect change of certain benthic types including stony coral, soft coral, and sponges (Fauth 2012). This dataset was acquired and updated with the latest information for monitoring stations and other large surveys that took place since. FRRP data were downloaded from TNC's website from 2005 – 2014. SECREMP and Broward monitoring data were updated with 2013 data. Several quantitative surveys for mapping efforts were included. Martin county mapping (2011), Town of Palm Beach nearshore mapping (2014), and SE FL Nearshore Benthic habitat mapping data (2013) were all added. The anchorage sites for the FDEP Port of Miami study were added.

Credits:

TNC; Fauth, J.; Walker, B.K.; NOAA Center for Coastal Monitoring and Assessment

Use limitations: Percent Cover was calculated by determining the area of stony corals as a percentage of the surveyed area. This likely overestimated percent cover because in some cases colony areas outside the survey transect were measured and included. Because all studies did not use consistent survey methods there are a number of considerations. Some sites were targeted and others were randomized. This may introduce bias if those chosen were known to be high percent cover sites. Different survey footprints may bias outcomes depending on the natural variance in the populations. In planning units with multiple surveys, the maximum percent cover value between all surveys was used because at least that amount had been measured somewhere in that area. In studies where certain information was not collected, those columns received a value of "-9". This is the integer equivalent to Not Applicable.

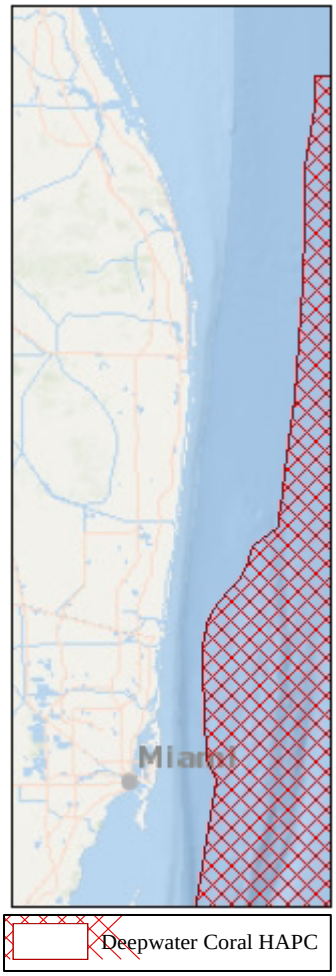
Filter:

Yes. The maximum value of percent coral cover from all compiled benthic survey sites within the Planning Unit is reported. Contains a Minimum/Maximum slider by percent to include or exclude planning units with the defined percent coral cover.

2.6. Deepwater Coral HAPC

Deepwater Coral HAPCs

Description:



The spatial representation of proposed Coral Habitat Area of Particular Concern C-HAPC areas in the South Atlantic Region. In response to research revealing the importance and uniqueness of deepwater coral habitats in the South Atlantic, coupled with new reports prepared for the South Atlantic Fishery Management Council by J. Reed and S. Ross, the Council decided to propose Habitat Area of Particular Concern (HAPC) designation for six deepwater coral areas to extend them a higher level of protection. The Council's Habitat and Coral Advisory Panels proposed these areas at the October 2004 meeting and the Council approved the proposal at their December 2004 meeting. At their joint meeting in Miami in June 2006, the Habitat and Coral Advisory Panels received updates on recent research on the status and distribution of deepwater coral systems in the region. Based on this new information, the Panels proposed to consolidate and expand the 6 original areas into 4. The Council subsequently voted to adopt the Panels' proposal. Action to establish the 4 new deepwater coral HAPCs will be taken through the Comprehensive Fishery Ecosystem Plan Amendment currently under development. At their joint meeting in Charleston in November 2007 Habitat and Coral Advisory Panels received recent research updates on the status and distribution of deepwater coral systems in the region. Based on this new information, the Panels proposed to reaffirm the 4 areas and add a fifth, the Blake Ridge Diapir. The Council subsequently voted to adopt the Panels' proposal for inclusion into the public hearing draft for the Comprehensive Ecosystem Amendment.

Credits: South Atlantic Fishery Management Council

Use limitations: None.

Filter: None.

2.7. Dense Acropora Patches

Dense Acropora Patches

Description:

This shapefile is all dense *Acropora cervicornis* patches mapped in the southeast Florida region and is a combination of the most recent SE FL benthic habitat maps. The nearshore has been updated according to Walker and Klug 2014 and combined with all previous mapping efforts. The SE FL nearshore benthic habitats were mapped using the same combined technique approach as described in Walker, Riegl, and Dodge (2008). Polygons were created by outlining and defining the features at a 1:1,000 scale and minimum mapping unit of 0.1 ha within recent aerial photography and high resolution bathymetric survey data. Southeast Florida benthic habitat maps were produced by delineating seafloor features evident in multiple datasets including the GMR Aerial Surveys, Inc. dba Photo Science imagery collected for this purpose on March 8, 2013, 2008 Broward lidar, and 2009 NOAA bathymetry. This dataset built upon previous regional mapping efforts by Dr. Brian Walker at Nova Southeastern University. The habitats were classified according to established NOAA guidelines in coordination with the NOS Coral Mapping Program and use a similar classification scheme when possible.

Credits:

This work was prepared for the Florida Department of Environmental Protection (Department) by Nova Southeastern University. Funding for this report was provided in part by a Coastal Services Center grant from the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA) National Ocean Service Award No. NA11N0S4820003, and by the Department, through its Office of Coastal and Aquatic Managed Areas.

Use limitations: The dense patches have diffuse boundaries difficult to define in imagery. *In situ* perimeter mapping would provide a more consistent boundary of the patches. This has not been accomplished here. These boundaries are likely to change once *in situ* boundaries can be mapped.

Filter: Yes. Planning units that contain at least part of a known dense Acropora patch can be included or excluded.

2.8. Large Live Coral Located in Planning Unit

Large Live Coral Planning Unit Locations

Description:

The largest corals in a population are the oldest and have exponentially more reproductive capacity than smaller ones making them the one of the most important demographic in a community. A pilot study was conducted by Brian Walker in 2014 to identify the location and condition of the largest corals in southeast Florida. The locations were identified remotely in LIDAR bathymetry and aerial photography. Out of the 195 targets identified, 126 sites were visited at which over 110 were large corals. Of those, 50 were found alive and 40 were estimated at greater than 2 meters wide. This layer depicts the planning units where one or more of the live large corals was documented.

Credits: Brian Walker and Katelyn Klug

Use limitations: These data represent efforts through 2014. In 2015 a funded effort was conducted to assess and measure all of the known corals and potential targets. The number of corals more than doubled to 115 large live colonies. These are not reflected in the present Marine Planner.

Filter:

Yes. Planning units that contain at least one known live coral greater than 2 meters in diameter can be included or excluded.

2.9. Number of Coral Species

Number of Coral Species

Description:

Survey locations where the number of coral species have been quantified. Benthic data were compiled from a variety of sources for the southeast Florida region for this layer. The main data source was from a recent FDEP study that conducted a power analysis to understand the level of surveying needed to detect change of certain benthic types including stony coral, soft coral, and sponges (Fauth 2012). This dataset was acquired and updated with the latest information for monitoring stations and other large surveys that took place since. FRRP data were downloaded from TNC's website from 2005 – 2014. Several quantitative surveys for mapping efforts were included. Martin county mapping (2011), Town of Palm Beach nearshore mapping (2014), and southeast Florida Nearshore Benthic habitat mapping data (2013) were all added. The anchorage sites for the FDEP Port of Miami study were added.

Credits:

TNC; Fauth, J.; Walker, B.K.; NOAA Center for Coastal Monitoring and Assessment

Use limitations:

Because all studies did not use consistent survey methods there are some considerations. Different survey footprints bias the number of species found in a given survey. Studies surveying larger areas will inherently have more species than smaller surveys. In planning units with multiple surveys, the maximum number of species value between all surveys was used because at least that amount had been measured somewhere in that area.

Filter:

Yes. The maximum value of number of coral species from any of the compiled benthic surveys within the Planning Unit was provided. Contains a Minimum/Maximum slider by whole number to include or exclude planning units with the defined number of colonies.

2.10. Pillar Coral Locations

Pillar Coral Locations 2015

Description:

This is a compilation of known pillar coral *Dendrogyra cylindrus* locations (no specified time frame) by FWC updated for 2015. These colonies were being monitored by Dr. Dave Gilliam, Nova Southeastern University. Many of these are now dead after the past disease event.

Credits:

Florida Fish and Wildlife Conservation Commission

Use limitations:

Several of these colonies perished by disease in the fall of 2015. The points do not reflect those changes. Not for distribution without prior consent. This dataset contains data from all previous pillar coral sightings. It should not be assumed that areas devoid of points do not contain *D. cylindrus*. This dataset does not indicate the absence of colonies. Survey effort was not equal among all areas of the dataset and no concerted effort using consistent survey methodology was used. It represents that at some point in the past *D. cylindrus* was found at these locations.

Filter: Yes. Planning units that contain at least one known pillar coral can be included or excluded.

2.11. SECREMP Coral Cover Trend Analysis

SECREMP Coral Cover Trend Analysis

Description:

This GIS data set represents an analysis of Southeast Coral Reef Evaluation & Monitoring Project (SECREMP) data collected by Dave Gilliam at Nova Southeastern University. The analysis looked for temporal trends in coral cover. This product was funded by the Florida's State Wildlife Grants Program under the project "Identification of suitable coral restoration sites and resilient coral reef communities through assessment of existing coral monitoring data." 2014/2016. Principle investigators were Luke McEachron, Kate Lunz, and Katie Wirt. This project used input from the scientific community to predict and assess actionable locations for coral restoration. This layer was one component of a larger modeling effort, but it can be used independently for OFR purposes. The goal was to help show areas where coral cover was changing through time. Only one site, BCA, showed a decrease in cover. All others showed no trend.

Credits:

FWC and Florida's State Wildlife Grants Program. Principle investigators were Luke McEachron, Kate Lunz, and Katie Wirt.

Use limitations:

Data only represent relatively small survey areas along the coast. Coral cover averages about 2% in this region making it extremely challenging to detect any significant differences in cover outside of measurement errors. BCA had one of the highest coral cover in the region. Coral cover has dropped significantly at that site since 2007, however Walker et.al. 2012 also showed it is moving west, away from the permanent monitoring stations.

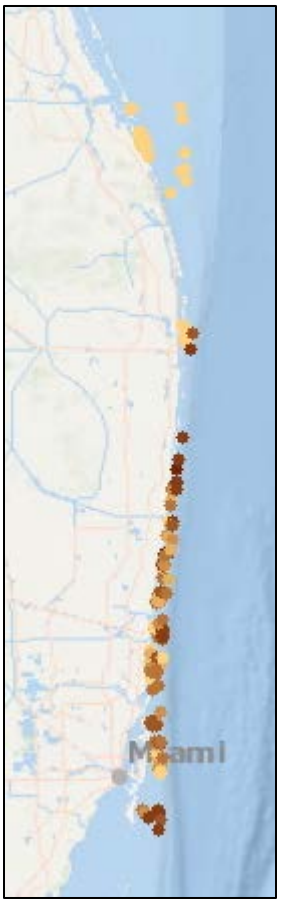
Filter: None

2.12. Soft Coral Percent Cover

Soft Coral Percent Cover

Description:

Survey locations where the percent cover of soft coral has been quantified. Benthic data were compiled from a variety of sources for the southeast Florida region for this layer. The main data source was from a recent FDEP study that conducted a power analysis to understand the level of surveying needed to detect change of certain benthic types including stony coral, soft coral, and sponges (Fauth 2012). This dataset was acquired and updated with the latest information for monitoring stations and other large surveys that took place since. FRRP data were downloaded from TNC's website from 2005 – 2014. SECREMP and Broward monitoring data were updated with 2013 data. Several quantitative surveys for mapping efforts were included. Martin county mapping (2011), Town of Palm Beach nearshore mapping (2014), and southeast Florida Nearshore Benthic habitat mapping data (2013) were all added. The anchorage sites for the FDEP Port of Miami study were added.



Credits:

TNC; Fauth, J.; Walker, B.K.; NOAA Center for Coastal Monitoring and Assessment

Use limitations: Percent cover was calculated by determining the area of soft corals as a percentage of the surveyed area. This likely overestimated percent cover because in some cases colony areas outside the survey transect were measured and included. Because all studies did not use consistent survey methods there are a number of considerations. Some sites were targeted and others were randomized. This may introduce bias if those chosen were known to be high percent cover sites. Different survey footprints may bias outcomes depending on the natural variance in the populations. In planning units with multiple surveys, the maximum percent cover value between all surveys was used because at least that amount had been measured somewhere in that area. In studies where certain information was not collected, those columns received a value of "-9". This is the integer equivalent to Not Applicable.

Filter:

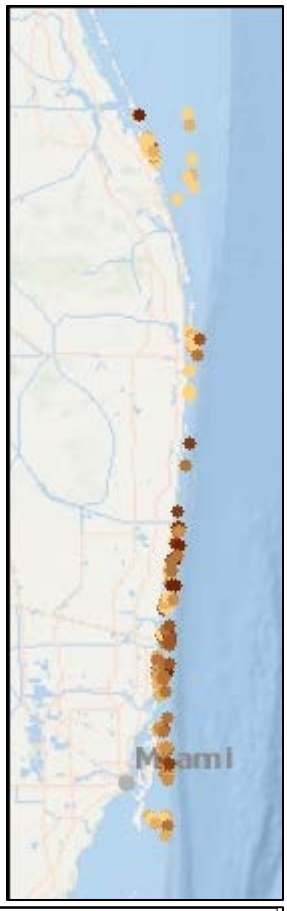
Yes. The maximum value of percent soft coral cover from any of the compiled benthic survey sites within the Planning Unit was provided. Contains a Minimum/Maximum slider to include or exclude planning units with the defined percent soft coral cover.

2.13. Sponge Percent Cover

Sponge Percent Cover

Description:

Survey locations where the percent cover of sponges were quantified. Benthic data were compiled from a variety of sources for the southeast Florida region for this layer. The main data source was from a recent FDEP study that conducted a power analysis to understand the level of surveying needed to detect change of certain benthic types including stony coral, soft coral, and sponges (Fauth 2012). This dataset was acquired and updated with the latest information for monitoring stations and other large surveys that took place since. FRRP data were downloaded from TNC's website from 2005 – 2014. SECREMP and Broward monitoring data were updated with 2013 data. Several quantitative surveys for mapping efforts were included. Martin county mapping (2011), Town of Palm Beach nearshore mapping (2014), and southeast Florida Nearshore Benthic habitat mapping data (2013) were all added. The anchorage sites for the FDEP Port of Miami study were added.



Credits:

TNC; Fauth, J.; Walker, B.K.; NOAA Center for Coastal Monitoring and Assessment

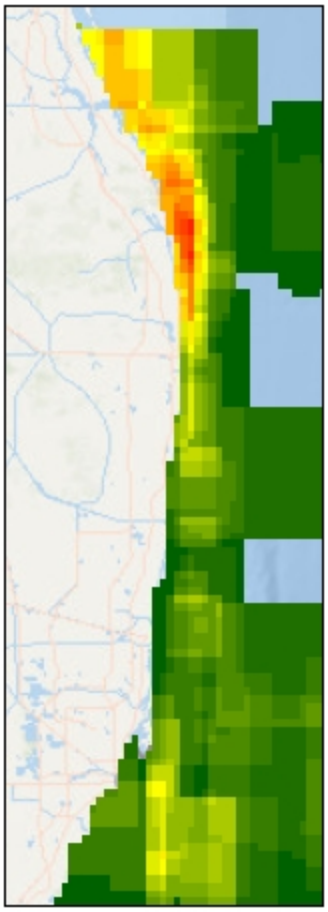
Use limitations:

Percent cover was calculated by determining the area of sponges as a percentage of the surveyed area. This likely overestimated percent cover because in some cases colony areas outside the survey transect were measured and included. Because all studies did not use consistent survey methods there are a number of considerations. Some sites were targeted and others were randomized. This may introduce bias if those chosen were known to be high percent cover sites. Different survey footprints may bias outcomes depending on the natural variance in the populations. In planning units with multiple surveys, the maximum percent cover value between all surveys was used because at least that amount had been measured somewhere in that area. In studies where certain information was not collected, those columns received a value of "-9". This is the integer equivalent to Not Applicable.

Filter: Yes. The maximum value of percent sponge cover from any of the compiled benthic survey sites within the Planning Unit was provided. Contains a Minimum/Maximum slider to include or exclude planning units with the defined percent cover of sponge.

3. FISH SHAPEFILE METADATA

3.1. Dolphin (Shivlani, 2007)



Dolphin

Description:

This SEFCRI commercial fishing study was the first of six study components in FDOU Combined Project 10. The methodology used to identify the study population, develop a survey instrument, and implement the field session served as a model for subsequent studies.

A total of 193 commercial fishers provided information on their fishing activities off the coast of Southeast Florida, off the coast of Miami-Dade, Broward, Palm Beach, and Martin counties. The fishers also provided socio-demographic, economic, and perceptions data.

Credits:

NOAA, M. Shivlani

Use limitations:

There are no access and use limitations for this item. Data were collected in 2007. It is unknown if the use patterns have changed.

Filter: None.

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3.2. Fish Aggregations

Fish Aggregations

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Description:

The locations of fish spawning aggregation reports, identified by collaborating stakeholders, are presented in this file. Species include; goliath grouper (*Epinephelus itajara*) (summer/fall), gag grouper (*Mycteroperca microlepis*) (winter), gray snapper (*Lutjanus griseus*) (summer), cubera snapper (*lutjanus cyanopterus*) (summer/fall), and mutton snapper (*Lutjanus analis*) (spring/summer). Polygons are approximate, and in some cases represent multiple areas of reported aggregation activity. These data provide spatially explicit information intended for consideration in marine spatial planning activities and future management actions in the southeast Florida region.

Further investigation is needed to fully characterize the nature of reported aggregations, but on-site observations by researchers and user reports suggests that the most southerly mutton/cubera aggregations are depleted. Additionally, field efforts to locate the gag grouper aggregations (offshore central/northerly polygon), while in their first season, have been unsuccessful to this point. Goliath grouper aggregations in the upper extent are confirmed and well documented. Gray snapper aggregations have remained elusive, and user reports have been unable to provide specific intel related to location or timing of aggregations.

Credits:

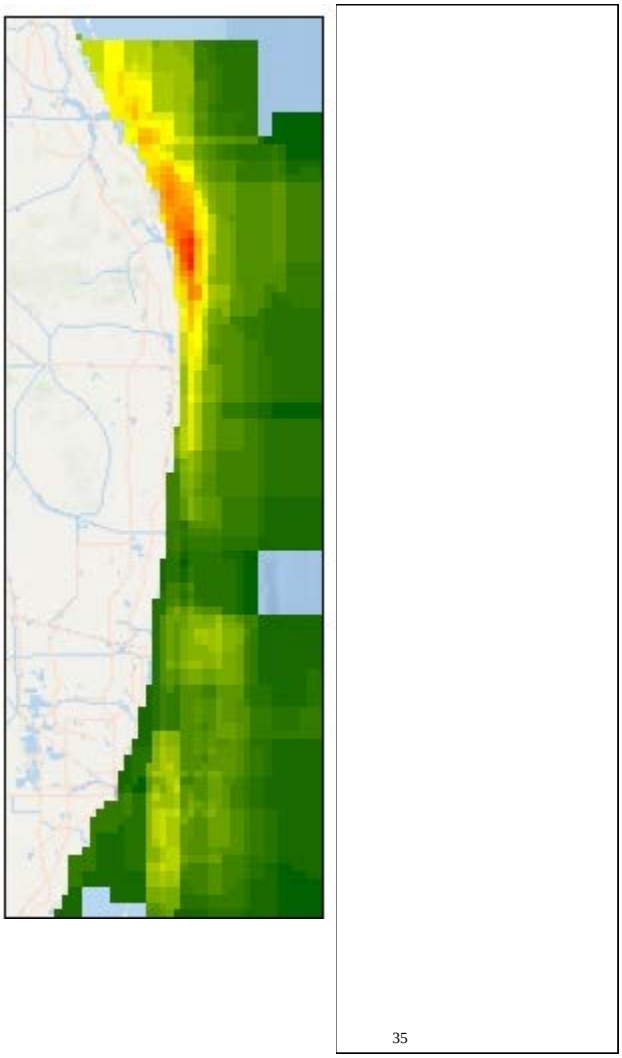
Florida International University; Florida Fish & Wildlife Research Institute, Tequesta, Fl.; West Palm Beach Fishing Club; Bouncer Smith; Dr. Christopher Koenig, Florida State University; Wet Pleasures Dive Outfitters, Lantana, Fl; Spearboard; Bill Parks

Use limitations: Precise locations and temporal information have been omitted by request of the contributing sources

Filter: None.

3.3. King Fish (Shivlani, 2007)

King Fish Landings



Description:

This SEFCRI commercial fishing study was the first of six study components in FDOU Combined Project 10. The methodology used to identify the study population, develop a survey instrument, and implement the field session served as a model for subsequent studies. A total of 193 commercial fishers provided information on their fishing activities off the coast of Southeast Florida, off the coast of Miami-Dade, Broward, Palm Beach, and Martin counties. The fishers also provided socio-demographic, economic, and perceptions data.

Credits:

NOAA, M. Shivlani

Use limitations:

There are no access and use limitations for this item. Data were collected in 2007. It is unknown if the use patterns have changed.

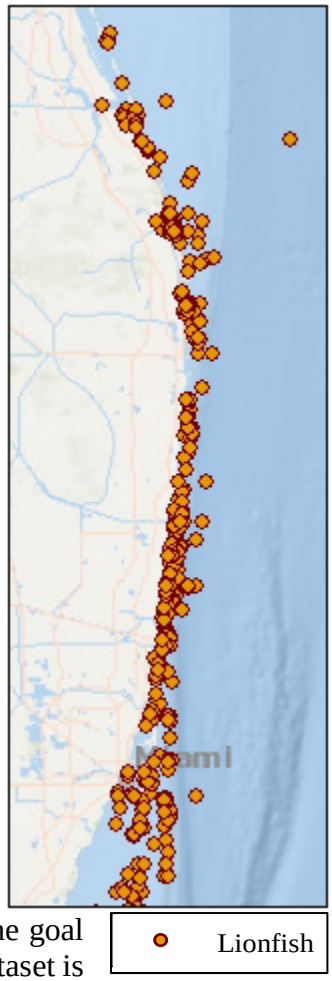
Filter: None.

3.4. Lionfish

Lionfish

Description:

These data show the observed distribution of lion fish in south Florida from 2010-2013 only. They were compiled by Pam Schofield from United States Geological Survey (USGS) and are continually updated and corrected. Please visit (usgs.gov/viewer) to view the real-time map. Lionfish are an invasive species in the United States. They inhabit natural (e.g., reef) and artificial structure (e.g., wrecks) at depths from just a few inches of water to over 300 m. In the invaded range, lionfishes have been found in a variety of habitats, including reefs, wrecks, bridge pilings, seagrass and natural hardbottom. In the U.S., lionfishes have rapidly increased in abundance. The USGS is the national repository for non-native aquatic species, and so the database is compiled of several datasets from partnering agencies and cooperators as well as the general public. It is pieced together from many different sources. Not all sites are sampled in all years, they are opportunistic reports.



Credits:

Pam Schofield, USGS

Use limitations:

This data set should not be assumed to be complete. The data points that are displayed do not constitute the total dataset. The data are not comprehensive of all introductions in all localities. Hence, these data should not be the sole source for analysis. The goal is to show distribution; not to document abundance. Thus, the dataset is not amenable to the same types of analyses that data from a monitoring program would be (e.g., there are no negative values). The data shown on the map accurately depict the extent of the areal coverage of lionfish, but do not include all points for all times. Data is constantly added and corrected, so the dataset changes on a daily basis.

Filter: None.

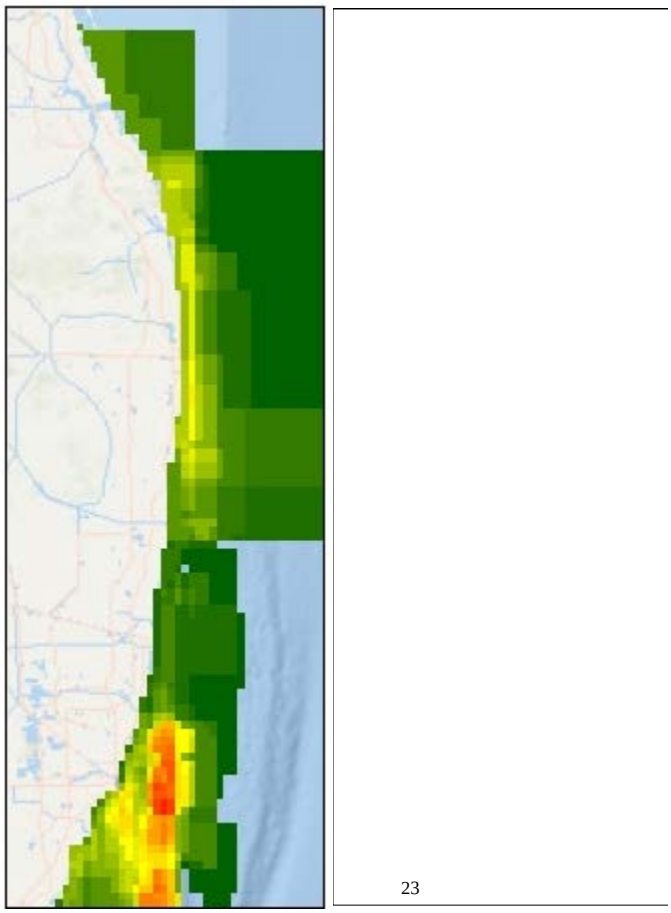
3.5. Lobster (Shivlani, 2007)

Lobster Landings

Description:

This SEFCRI commercial fishing study was the first of six study components in FDOU Combined Project 10. The methodology used to identify the study population, develop a survey instrument, and implement the field session served as a model for subsequent studies.

A total of 193 commercial fishers provided information on their fishing activities off the coast of Southeast Florida, off the coast of Miami-Dade, Broward, Palm Beach, and Martin counties. The fishers also provided socio-demographic, economic, and perceptions data.



Credits:

NOAA, M. Shivlani

Use limitations:

There are no access and use limitations for this item. Data were collected in 2007. It is unknown if the use patterns have changed.

Filter: None.

3.6. Number of Reef Fish Species

RVC Reef Fish Data

Description:

This is a compilation of the 2012 and 2014 data collection from all partner agencies and includes the survey locations, year, fish density, and fish richness for each secondary survey unit (SSU). These assessments for the southeast Florida reef tract (northern Miami-Dade, Broward, Palm Beach, and Martin counties) were designed and conducted through a joint cooperative effort by scientists at the University of Miami Rosenstiel School of Marine and Atmospheric Science, NOAA-Southeast Fisheries Science Center, Nova Southeastern University Oceanographic Center, FDEP, FWC, and County partners. Sites south of Government Cut were supplied by NOAA NMFS as part of the 2012 FL Keys RVC monitoring efforts. This effort was originally funded for three years (2012, 2013, and 2014). Field sampling for each year began in May and ran through October. Data for 2015 have been collected but are not included here. The dataset, in its entirety, provides the opportunity for further mining to examine specific species and assemblage correlations with a host of abiotic and biotic variables. There are significant differences in the current geographic distribution of the regional and local reef fish communities driven by depth and location along shore. The combination of data from all three years provides a regional baseline fishery-independent assessment.

Credits:

NSU, NOAA NMFS, FDEP, FWC, University of Miami.

Use limitations: In planning units with multiple surveys, the maximum value from all of the surveys was used because at least that amount had been measured somewhere in that area. The number of species is an indication of diversity, however it does not indicate which species. Sites in the north and south may have similar number of species but they are likely not the same species because the north is more temperate and the south is more tropical.

Filter:

Yes. The maximum number of fish species per SSU (RVC 2012 & 2014) from any of the surveys within the planning unit is provided. Contains a Minimum/Maximum slider by whole number to include or exclude planning units with the defined number of fish species.

3.7. Recreationally and Commercially Important Reef Fish Species Density

Economically Important Reef Fish Density

Description:

These are a subset of the RVC 2012-13 data. These are the density of only fishes that fishermen target and not for aquaria. The spp included snappers, groupers, hogfish, grunts, jacks, barracuda, mackerel, triggerfish, etc. This is a compilation of all partner agencies and includes the survey locations, year, fish density, and fish richness for each secondary survey unit (SSU). These assessments for the southeast Florida reef tract (northern Miami-Dade, Broward, Palm Beach, and Martin counties) were designed and conducted through a joint cooperative effort by scientists at the University of Miami Rosenstiel School of Marine and Atmospheric Science, NOAA-Southeast Fisheries Science Center, Nova Southeastern University Oceanographic Center, FDEP, FWC, and County partners. Sites south of Government Cut were supplied by NOAA NMFS as part of the 2012 FL Keys RVC monitoring efforts. This effort was originally funded for three years (2012, 2013, and 2014). Field sampling for each year began in May and ran through October. Data for 2015 have been collected but are not included here. The dataset, in its entirety, provides the opportunity for further mining to examine specific species and assemblage correlations with a host of abiotic and biotic variables. There are significant differences in the current geographic distribution of the regional and local reef fish communities driven by depth and location along shore. The combination of data from all three years provides a regional baseline fishery-independent assessment.

Credits:

NSU, NOAA NMFS, FDEP, FWC, University of Miami.

Use limitations:

Fish density varied depending on species present and time of year. These data are all species combined. They are called relative density because the values are means of multiple surveys at a location. The data are standardized to the SSU survey area, not to a common unit (e.g. number/m^2) that is useful to compare across other studies. In planning units with multiple surveys, the maximum value between all surveys was used because at least that amount had been measured somewhere in that area.

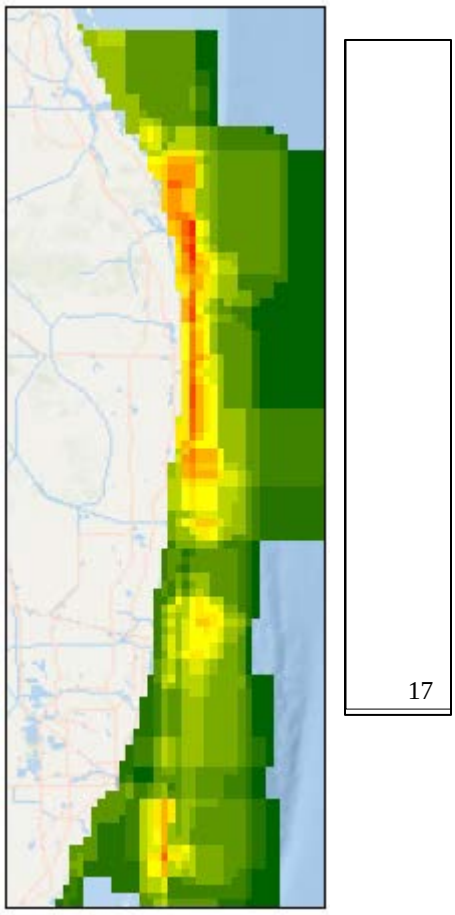
Filter: Yes. Mean density of recreationally and commercially important fish per SSU (RVC 2012 & 2013) is provided. Contains a Min/Max slider by whole number to include or exclude planning units with the defined fish density.

3.8. Reef Fish (Shivlani, 2007)

Reef Fish Landings

Description:

This SEFCRI commercial fishing study was the first of six study components in FDOU Combined Project 10. The methodology used to identify the study population, develop a survey instrument, and implement the field session served as a model for subsequent studies. A total of 193 commercial fishers provided information on their fishing activities off the coast of Southeast Florida, off the coast of Miami-Dade, Broward, Palm Beach, and Martin counties. The fishers also provided socio-demographic, economic, and perceptions data.



Credits:

NOAA, M. Shivlani

Use limitations:

There are no access and use limitations for this item. Data were collected in 2007. It is unknown if the use patterns have changed.

Filter: None.

3.9. Relative Reef Fish Density

RVC Reef Fish Data
Relative reef fish density

Description:

This is a compilation of the 2012 through 2014 data collection from all partner agencies and includes the survey locations, year, fish density, and fish richness for each secondary survey unit (SSU). These assessments for the southeast Florida reef tract (northern Miami-Dade, Broward, Palm Beach, and Martin counties) were designed and conducted through a joint cooperative effort by scientists at the University of Miami Rosenstiel School of Marine and Atmospheric Science, NOAA-NMFS, Nova Southeastern University Oceanographic Center, FDEP, FWC, and County partners. Sites south of Government Cut were supplied by NOAA NMFS as part of the 2012 FL Keys RVC monitoring efforts. This effort was originally funded for three years (2012, 2013, and 2014). Field sampling for each year began in May and ran through October. Data for 2015 have been collected but are not included here. The dataset, in its entirety, provides the opportunity for further mining to examine specific species and assemblage correlations with a host of abiotic and biotic variables. There are significant differences in the current geographic distribution of the regional and local reef fish communities driven by depth and location along shore. The combination of data from all three years provides a regional baseline fishery-independent assessment.

Credits: Nova Southeastern University, NOAA NMFS, FDEP, FWC, University of Miami.

Use limitations: Fish density varied depending on species present and time of year. These data are all species combined. They are called relative density because the values are means of multiple surveys at a location. The data are standardized to the SSU survey area, not to a common unit (e.g. number/m^2) that is useful to compare across other studies. In planning units with multiple surveys, the maximum value between all surveys was used because at least that amount had been measured somewhere in that area. Fish density varied depending on species present and time of year.

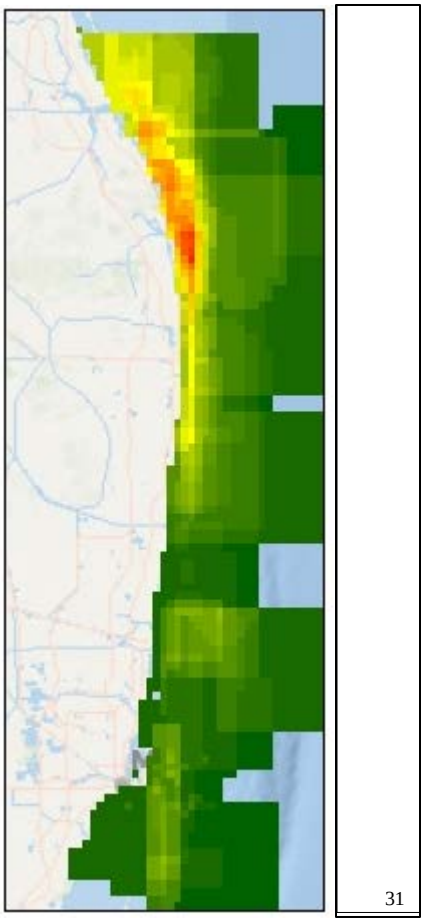
Filter: Yes. Mean fish density per SSU (RVC 2012 & 2014) is provided. Contains a Minimum/Maximum slider by whole number to include or exclude planning units with the defined fish density.

3.10. Spanish Mackerel (Shivlani, 2007)

Spanish Mackerel Landings

Description:

This SEFCRI commercial fishing study was the first of six study components in FDOU Combined Project 10. The methodology used to identify the study population, develop a survey instrument, and implement the field session served as a model for subsequent studies. A total of 193 commercial fishers provided information on their fishing activities off the coast of Southeast Florida, off the coast of Miami-Dade, Broward, Palm Beach, and Martin counties. The fishers also provided socio-demographic, economic, and perceptions data.



Credits:

NOAA, M. Shivlani

Use limitations:

There are no access and use limitations for this item. Data were collected in 2007. It is unknown if the use patterns have changed.

Filter: None.

4. HABITAT SHAPEFILE METADATA

4.1. Artificial Habitat

Artificial Habitat

Description:

This shapefile is the artificial habitat mapped in the region as part of the NSU benthic habitat mapping. The nearshore was updated according to Walker and Klug 2014 and combined with all previous mapping efforts.

Credits:

The benthic habitat maps were prepared for the Florida Department of Environmental Protection (FDEP) by Nova Southeastern University. Funding was provided in part by a Coastal Services Center grant from the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA) National Ocean Service, the Florida Fish and Wildlife Conservation Commission, and by the FDEP, through its Office of Coastal and Aquatic Managed Areas. The NOAA Office of Coast Survey, Broward County Natural Resources Planning and Management Division, and Coastal Planning and Engineering supplied the LIDAR data for Miami-Dade, Broward, and Palm Beach counties. Martin LIDAR was collected as part of a State Wildlife Grant.

Use limitations: The habitat polygons were created as part of the benthic habitat mapping efforts. These efforts contained a minimum mapping unit of 1 acre. Efforts were made to incorporate all visible artificial structures, however small artificial habitats not visible in the aerial photography or LIDAR bathymetry were not depicted. There were no efforts to coordinate these areas with the official FWC State of Florida artificial reef database or other databases. It was recognized that the FWC database locations can vary in accuracy and need correction to more recent locations. Mitigation reefs, inlet channels, sand borrow areas, jetties and other engineered areas were not cross-checked with their official plans. These areas were interpreted to the best ability within the reference data. They do not depict official project extents or boundaries.

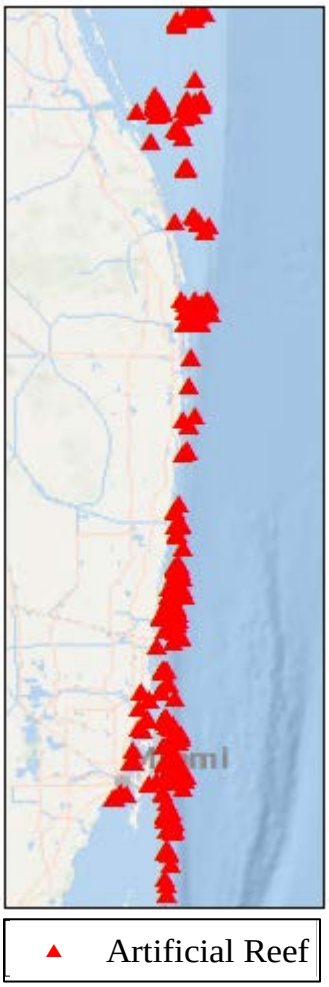
Filter: Yes. The minimum percent of mapped artificial substrate area (including dump sites, outfall pipes, and designated artificial reefs) within each planning unit is provided. Contains a Minimum/Maximum slider by 10 percent intervals to include or exclude planning units with the defined habitat percentage. It was used to summarize the combined amount of artificial habitats in the Marine Planner drawing summaries and statistics as well.

4.2. Artificial Reefs

artificialreef_fl_point

Description:

Each point location is intended to represent a single artificial reef deployment event, defined as either different location coordinates or the same coordinates but on different days. It is important to note that the Division of Marine Fisheries Management (DMF) has not independently confirmed most of the reef locations and this data had been supplied form various sources without verification. Each point in this GIS data set represents a single deployment event (either a uniquely located artificial reef or deployments of the same reef on different days). DMF maintains and updates the source database. This data set represents deployments through March, 2011.



Credits:

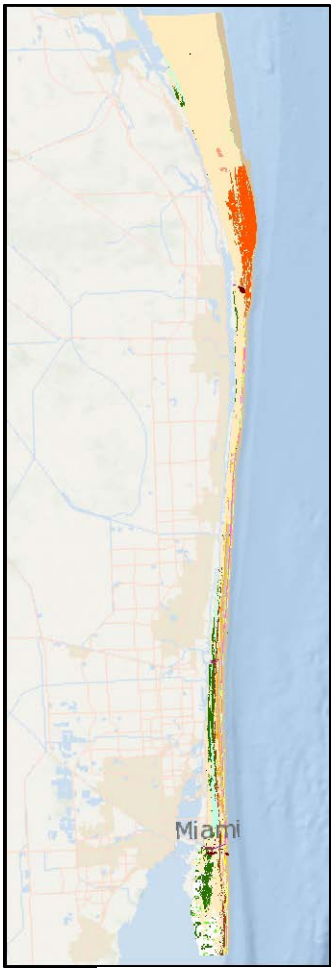
FWC -FWRI Division of Marine Fisheries Management

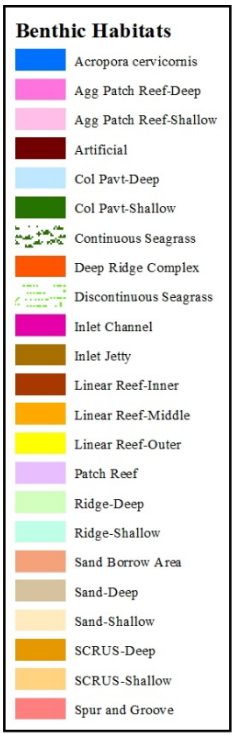
Use limitations: This data set is for display purposes only. Users should be aware that comparison with other data sets for the same area from other time periods may be inaccurate due to inconsistencies resulting from changes in mapping conventions, data collection, and computer processes over time. FWC shall not be liable for improper or incorrect use of this data. These data are not legal documents and are not to be used as such. This is not a survey data set and should not be utilized as such. These data are not to be used for navigation.

Filter: None.

4.3. Benthic Habitat

Benthic Habitat





Description:

This shapefile is a combination of the most recent southeast Florida benthic habitat maps and previous regional mapping efforts. Previous mapping efforts include benthic habitat maps in Broward County (Walker, Riegl, and Dodge 2008), Palm Beach County (Riegl et al 2005), Miami-Dade County (Walker 2009), and Martin County (Walker and Gilliam 2013). The nearshore habitats south of Hillsboro Inlet have been recently updated to a finer resolution (Walker and Klug 2014). Polygons were created by outlining and defining the features at a 1:3,000 scale and minimum mapping unit of 0.4 ha (1:1,000 scale and 0.1 ha mmu for nearshore south of Hillsboro Inlet) using recent aerial photography and high resolution bathymetric survey data including the 2013 nearshore aerial surveys collected for this purpose, 2009 NOAA bathymetry, 2008 Broward LIDAR, 2008 and 2009 Martin County LIDAR, 2002 Miami-Dade and Palm Beach LIDAR. The habitats were classified according to established NOAA guidelines in coordination with the NOS Coral Mapping Program and use a similar classification scheme when possible.

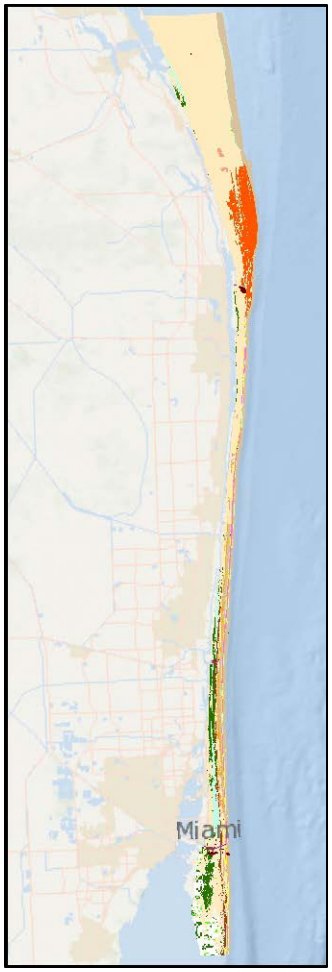
Credits:

This work was prepared by Brian K. Walker at Nova Southeastern University for the FDEP and FWC.

Use limitations: Not to be used for navigation. The maps depict benthic habitats that are larger than the minimum mapping unit. Mitigation reefs, inlet channels, sand borrow areas, jetties, and other engineered areas were not cross-checked with their official plans. These areas were interpreted to the best ability within the reference data. They do not depict official project extents or boundaries.

Filter: Yes. The minimum percent of mapped substrate area (seagrass, hardbottom, sand, and artificial reefs) within each planning unit is provided. Contains a Minimum/Maximum slider by 10 percent intervals to include or exclude planning units with the defined habitat percentage. It was used to summarize the combined amount of benthic habitats in the Marine Planner drawing summaries and statistics as well.

4.4. Benthic Habitat (simplified)



Benthic Habitat (simplified)

Description:

This shapefile is the same as the Benthic Habitat map, except that the polygons were dissolved to simplify the layer and help it draw faster. It is a combination of the most recent southeast Florida benthic habitat maps and previous regional mapping efforts. Previous mapping efforts include benthic habitat maps in Broward County (Walker, Riegl, and Dodge 2008), Palm Beach County (Riegl et al 2005), Miami-Dade County (Walker 2009), and Martin County (Walker and Gilliam 2013). The nearshore habitats south of Hillsboro Inlet have been recently updated to a finer resolution (Walker and Klug 2014). Polygons were created by outlining and defining the features at a 1:3,000 scale and minimum mapping unit of 0.4 ha (1:1,000 scale and 0.1 ha mmu for nearshore south of Hillsboro Inlet) using recent aerial photography and high resolution bathymetric survey data including the 2013 nearshore aerial surveys collected for this purpose, 2009 NOAA bathymetry, 2008 Broward LIDAR, 2008 and 2009 Martin County LIDAR, 2002 Miami-Dade and Palm Beach LIDAR. The habitats were classified according to established NOAA guidelines in coordination with the NOS Coral Mapping Program and use a similar classification scheme when possible

Credits:

This work was prepared by Brian K. Walker at Nova Southeastern University for the FDEP and FWC.

Use limitations: Not to be used for navigation. The maps depict benthic habitats that are larger than the minimum mapping unit. Mitigation reefs, inlet channels, sand borrow areas, jetties and other engineered areas were not cross-checked with their official plans. These areas were interpreted to the best ability within the reference data. They do not depict official project extents or boundaries.

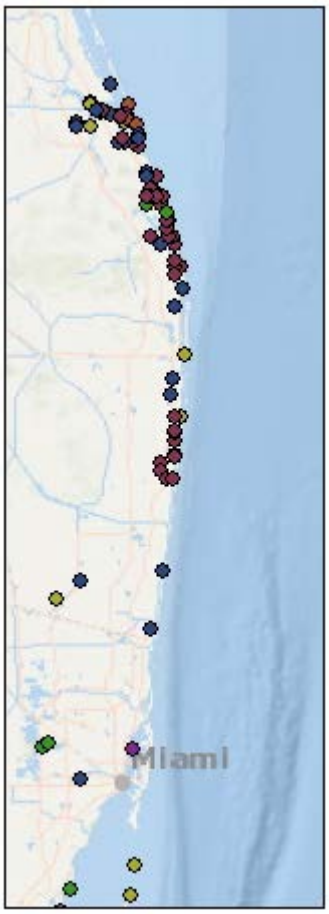
Filter: Yes. The minimum percent of mapped substrate area (seagrass, hardbottom, sand, and artificial reefs) within each planning unit is provided. Contains a Minimum/Maximum slider by 10 percent intervals to include or exclude planning units with the defined habitat percentage. The mapping data were also used to summarize the combined amount of benthic habitats in the Marine Planner drawing summaries and statistics.

4.5. Bird Nests ESI 2012

Bird Nests ESI 2012

Description:

This data set contains sensitive biological resource data for diving birds, gulls, terns, passerine birds, pelagic birds, raptors, shorebirds, wading birds, and waterfowl in South Florida (2013). Vector points in this data set represent bird nesting and wintering sites. Species specific abundance, seasonality, status, life history, and source ID information have been joined to the attribute table. Source details are stored in a separate related SOURCES data table designed to be used in conjunction with this spatial data layer. This data set comprises a portion of the Environmental Sensitivity Index (ESI) data for Florida. ESI data characterize the marine and coastal environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources. See also the BIRDS data layer, part of the larger Florida ESI database, for additional bird information. ESI is more properly known as "Sensitivity of Coastal Habitats and Wildlife to Spilled Oil" Atlases. The term "ESI" is often used in reference to the whole dataset, but the term "ESI" is really a reference to the classification system of shoreline types known as Environmental Sensitivity Index, that classifies a shoreline on a scale from 1 to 10 based upon overall sensitivity to spilled oil. FWRI contracted out updates to Florida's ESI data for the Panhandle and South Florida in the years 2010 through early 2013. These datasets were delivered as coverages in region-polygon format that allow for overlapping polygons in the same manner as FWRI's older ESI GIS data (in Gulf-Wide Information System (GWIS) format/specification). Hundreds of new species were added and the regional products were completed and delivered as promised. This data set is a compilation of the most recent ESI mapping for each area of Florida.



Credits: FWC

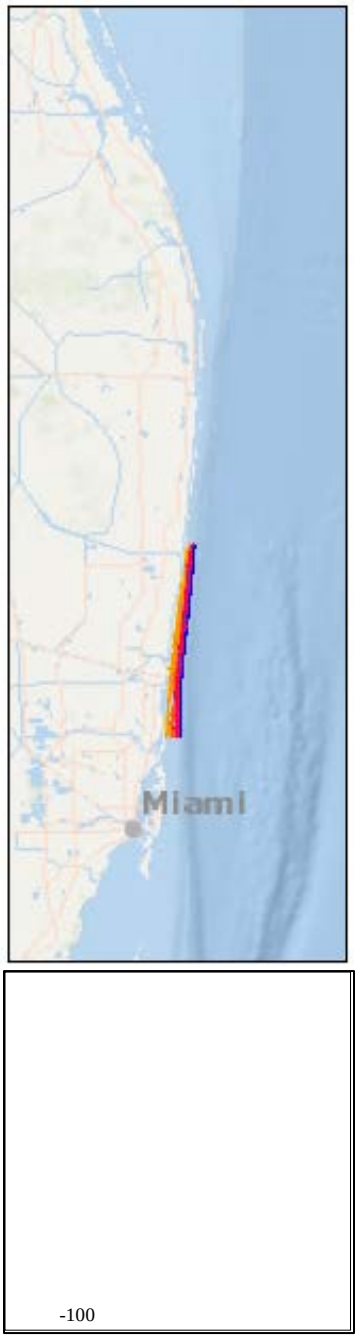
Use limitations: There are no access and use limitations for this item.

Filter: None.

4.6. Broward County Depth Contours

Broward_LADS_2001_5ft_contours_15ftint

Description:
This data was created for engineers and geotechnical personnel to produce a method for the characterization of the hard bottom and reef resources of the Broward County coastline, and to provide a unique basemap for cartographic needs. This is a line GIS data set of detailed bathymetry located offshore northern Broward County, Florida produced using bathymetric data from a Laser Airborne Depth Sounding (LADS) survey. The contour features were spatially manipulated to match the contours of adjacent Broward County. The features were clipped at the 1:24000 Broward County Boundary and edge matched. ArcGIS 9.1 was used to edge match contours using the midpoint of the link. Where the gap was greater than 5 meters, smoothing was applied manually to vertices within a 30 meter radius of the link point.



Credits: FWC-FWRI.

Use limitations: This data set is in the public domain, and the recipient may not assert any proprietary rights thereto nor represent it to anyone as other than a FWC-FWRI produced data set or the appropriate originator; it is provided "as-is" without warranty of any kind, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. The user assumes all responsibility for the accuracy and suitability of this data set for a specific application. In no event will the staff of the Fish and Wildlife Research Institute be liable for any damages, including lost profits, lost savings, or other incidental or consequential damages arising from the use of or the inability to use this data set.

Filter: Yes. The contours were not a filter layer, but the bathymetric data they were created from were a filter. Contains a Minimum/Maximum slider by 1 foot intervals to include or exclude planning units with the defined average depth.

4.7. Coral Reef and Hard Bottom Habitat

Coral Reef and Hard Bottom Habitat

Description:

This is shapefile of the Coral Reef and Hardbottom Habitats from the regional Benthic Habitat maps. It is a combination of the most recent southeast Florida benthic habitat maps and previous regional mapping efforts. Previous mapping efforts include benthic habitat maps in Broward County (Walker, Riegl, and Dodge 2008), Palm Beach County (Riegl et al 2005), Miami-Dade County (Walker 2009), and Martin County (Walker and Gilliam 2013). The nearshore habitats south of Hillsboro Inlet have been recently updated to a finer resolution (Walker and Klug 2014). Polygons were created by outlining and defining the features at a 1:3,000 scale and minimum mapping unit of 0.4 ha (1:1,000 scale and 0.1 ha mmu for nearshore south of Hillsboro Inlet) using recent aerial photography and high resolution bathymetric survey data including the 2013 nearshore aerial surveys collected for this purpose, 2009 NOAA bathymetry, 2008 Broward LIDAR, 2008 and 2009 Martin County LIDAR, 2002 Miami-Dade and Palm Beach LIDAR. The habitats were classified according to established NOAA guidelines in coordination with the NOS Coral Mapping Program.

Credits: This work was prepared by Brian K. Walker at Nova Southeastern University for the FDEP and FWC.

Use limitations: Not to be used for navigation. The maps depict Coral Reef and Hardbottom habitats that are larger than the minimum mapping unit.

Filter: Yes. The minimum percent of mapped Coral Reef and Hardbottom Habitat area within each planning unit is provided. Contains a Minimum/Maximum slider with 10 percent intervals to include or exclude planning units that contained the specified percent of Coral Reef and Hardbottom Habitat.

4.8. Johnson's Seagrass Critical Habitat

Johnson's Seagrass Critical Habitat Area Florida

Description:
This GIS data set was created to spatially represent the parameters of the Johnsons Seagrass Critical Habitat as defined by the Endangered Species Act (ESA). The regulations contained in this part identify those habitats designated by the Secretary of Commerce as critical under section 4 of the ESA, for endangered and threatened species under the jurisdiction of the Secretary of Commerce. Critical habitat is designated to include substrate and water in ten portions of the Indian River Lagoon and Biscayne Bay within the current range of Johnson's seagrass. Definition of Critical Habitat-- Critical habitat is defined in section 3(5)(A) of the ESA as ``(i) the specific areas within the geographical area occupied by the species...on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species...upon a determination by the Secretary of Commerce (Secretary) that such areas are essential for the conservation of the species." The term ``conservation'' as defined in section 3(3) of the ESA, means ``...to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary."

Credits: FWC-FWRI.

Use limitations: Users should be aware that comparison with other data sets for the same area from other time periods may be inaccurate due to inconsistencies resulting from changes in mapping conventions, data collection, and computer processes over time. FWC shall not be liable for improper or incorrect use of this data. These data are not legal documents and are not to be used as such. This is not a survey data set and should not be utilized as such. These data are not to be used for navigation.

Filter: None.

4.9. Manatee Critical Habitat

Manatee Critical Habitat Florida

Description:

Critical habitat is a term in the Endangered Species Act that identifies geographic areas containing features essential for the conservation of a threatened or endangered species, and which may require special management considerations or protection. Designation of critical habitat does not affect land ownership, establish a refuge or preserve and has no impact on private landowners taking actions on their land that do not require federal funding or permits. Federal agencies that undertake, fund, or permit activities that may affect critical habitat are required to consult with the US Fish & Wildlife Service (USFWS) to ensure actions do not adversely modify or destroy designated critical habitat.

These data identify, in general, the areas where final critical habitat for the Florida manatee (Trichechus manatus latirostris) occur, as described in the Federal Register, Vol. 41, No. 187, September 24, 1976. FWRI staff downloaded this GIS data set from the USFWS Critical Habitat Portal.

Credits:

USFWS provided the data and minimal metadata information. FWRI has altered the metadata to include processing done by FWRI.

Use limitations:

There are no access and use limitations for this item.

Filter: None.

4.10. Mangroves

fl_mangrove

Description:

This GIS data set represents mangroves in Florida. The data are reselected from land use and land cover data from Florida's water management districts.

Credits:

The data are reselected from land use land cover data from the Southwest Florida Water Management District, St. Johns River Water Management District, and South Florida Water Management District.

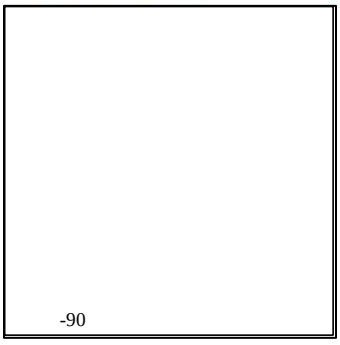
Use limitations:

Acknowledgement of the FWC-FWRI (Florida Fish and Wildlife Conservation Commission-Fish and Wildlife Research Institute) as the data source would be appreciated in any products developed from these data, and such acknowledgment as is standard for citation and legal practices for data source is expected by users of this data. Please cite the original metadata when using portions of the record to create a similar record of slightly altered data, such as reprojection. If any data are modified or adjusted, please share the edited information with FWC. Users should be aware that comparison with other data sets for the same area from other time periods may be inaccurate due to inconsistencies resulting from changes in mapping conventions, data collection, and computer processes over time. FWC shall not be liable for improper or incorrect use of this data. These data are not legal documents and are not to be used as such. This is not a survey data set and should not be utilized as such. These data are not to be used for navigation.

Filter: None.

4.11. Martin County Depth Contours

Martin County 15ft Contours



Description:

This is a line GIS dataset of detailed bathymetry located offshore Martin County, Florida produced using bathymetric data from a LIDAR survey conducted by Blom Aerofilms in 2008 in concert with Nova Southeastern University's Martin County benthic habitat mapping funded by FWC State Wildlife grant. The contours are in 15 ft intervals.

Credits: FWC-FWRI

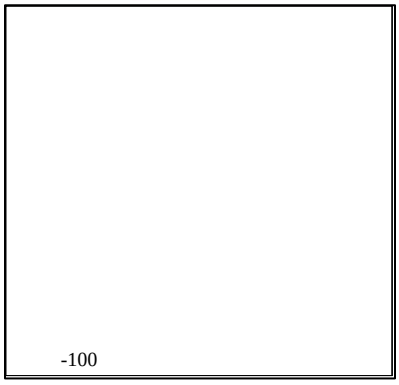
Use limitations:

It is not intended for navigational use. This data set is in the public domain, and the recipient may not assert any proprietary rights thereto nor represent it to anyone as other than a FWC-FWRI produced data set or the appropriate originator; it is provided "as-is" without warranty of any kind, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. The user assumes all responsibility for the accuracy and suitability of this data set for a specific application. In no event will the staff of the Fish and Wildlife Research Institute be liable for any damages, including lost profits, lost savings, or other incidental or consequential damages arising from the use of or the inability to use this data set.

Filter: The contours were not a filter layer, but the bathymetric data they were created from were a filter. Contains a Minimum/Maximum slider by 1 foot intervals to include or exclude planning units with the defined average depth.

4.12. Miami-Dade County Depth Contours

Miami-Dade County Contours



Description:

This is a line coverage of detailed bathymetry located offshore northern Miami-Dade County, Florida produced using bathymetric data from a Laser Airborne Depth Sounding (LADS) survey. This data was created for engineers and geotechnical personnel to produce a method for the characterization of the hardbottom and reef resources of the Dade County coastline. To provide a unique basemap for cartographic needs. The contours are in 15 ft intervals

Credits: Coastal Planning and Engineering

Use limitations:

It is not intended for navigational use. The data represents the results of data collection/processing for a specific Coastal Planning and Engineering, Inc. activity and indicates the general existing conditions at the time of survey. As such, it is only valid for its intended use, content, time, and accuracy specifications. The user is responsible for the results of an application of the data other than its intended purpose.

Filter: The contours were not a filter layer, but the bathymetric data they were created from were a filter. Contains a Minimum/Maximum slider by 1 foot intervals to include or exclude planning units with the defined average depth.

4.13. Oyster Reef

Oyster Habitats Florida

Description:

This GIS data set was created to represent oysters for general mapping purposes only. Different studies used different methodologies and not all areas have been mapped. This GIS data set represents oyster coverage for available study areas in the state of Florida. Not all areas have been mapped, but this dataset represents the oyster data available to FWRI as of November 2011. Source dates vary and many studies are much older than the compilation date. See the Source Information section for more details.

Credits: FWC-FWRI

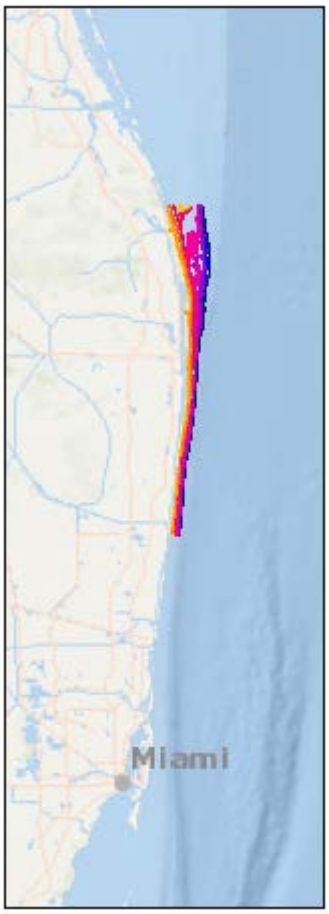
Use limitations:

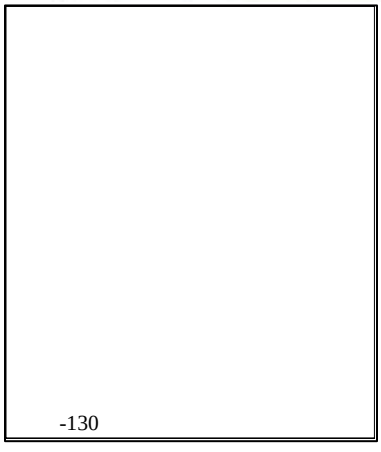
These data are compiled data from various source organizations listed in the Source Citations. Users should be aware that comparison with other data sets for the same area from other time periods may be inaccurate due to inconsistencies resulting from changes in mapping conventions, data collection, and computer processes over time. FWC shall not be liable for improper or incorrect use of this data. These data are not legal documents and are not to be used as such. This is not a survey data set and should not be utilized as such. These data are not to be used for navigation.

Filter: None.

4.14. Palm Beach County Depth Contours

PBC_Contours_merge_15ftint





Description:

This is a line coverage of detailed bathymetry located offshore Palm Beach County, Florida produced using bathymetric data from a Laser Airborne Depth Sounding (LADS) survey. This data was created for engineers and geotechnical personnel to produce a method for the characterization of the hardbottom and reef resources of the Palm Beach County coastline. To provide a unique basemap for cartographic needs. The contours are in 15 ft intervals

Credits: Coastal Planning and Engineering

Use limitations:

It is not intended for navigational use. The data represents the results of data collection/processing for a specific Coastal Planning and Engineering, Inc. activity and indicates the general existing conditions at the time of survey. As such, it is only valid for its intended use, content, time, and accuracy specifications. The user is responsible for the results of an application of the data other than its intended purpose.

Filter: The contours were not a filter layer, but the bathymetric data they were created from were a filter. Minimum, Maximum, and Mean depth per planning unit were filtered using a double slider by foot.

4.15. Salt Marsh

saltmarsh_final

Description:

This data set was created as a statewide compilation of saltwater marsh areas to use for mapping and analysis based on the most current data available. This information is not appropriate for time series analysis with previous compilations since the mapping methodology is different.

This GIS data set represents the saltwater marsh areas in Florida. The data are a compilation of available land use and land cover information mapped by Florida's water management districts. The most recent data available as of April 2014 are used; the photography dates are between 1999 and 2011.

Credits:

Florida's water management districts provided the land use and land cover data.

Use limitations:

This information is not appropriate for time series analysis with previous compilations since the mapping methodology is different.

Filter: None.

4.16. Sand Habitat

Sand Habitat

Description:

This is shapefile of the Sand Habitats from the regional Benthic Habitat maps. It is a combination of the most recent SE FL benthic habitat maps and previous regional mapping efforts. Previous mapping efforts include benthic habitat maps in Broward County (Walker, Riegl, and Dodge 2008), Palm Beach County (Riegl et al 2005), Miami-Dade County (Walker 2009), and Martin County (Walker and Gilliam 2013). The nearshore habitats south of Hillsboro Inlet have been recently updated to a finer resolution (Walker and Klug 2014). Polygons were created by outlining and defining the features at a 1:3,000 scale and minimum mapping unit of 0.4 ha (1:1,000 scale and 0.1 ha mmu for nearshore south of Hillsboro Inlet) using recent aerial photography and high resolution bathymetric survey data including the 2013 nearshore aerial surveys collected for this purpose, 2009 NOAA bathymetry, 2008 Broward LIDAR, 2008 and 2009 Martin County LIDAR, 2002 Miami-Dade and Palm Beach LIDAR. The habitats were classified according to established NOAA guidelines in coordination with the NOS Coral Mapping Program.

Credits: This work was prepared by Brian K. Walker at Nova Southeastern University for the Florida Department of Environmental Protection (FDEP) and Florida Fish and Wildlife Conservation Commission (FWC).

Use limitations: Not to be used for navigation. The maps depict Sand habitats that are larger than the minimum mapping unit.

Filter: Yes. The minimum percent of mapped Sand Habitat area within each planning unit is provided. Contains a Minimum/Maximum slider with 10 percent intervals to include or exclude planning units that contained the specified percent of sand. It was used to summarize the combined amount of benthic habitats in the Marine Planner drawing summaries and statistics as well.

4.17. Sea Turtle Nest Densities

4.17.1. Green Sea Turtle

Green Sea Turtle Nest Densities

Description:
The State of Florida, through the Florida Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute, coordinates the Statewide Nesting Beach Survey program (SNBS). The SNBS was initiated in 1979 under a cooperative agreement between FWC (then DNR) and the U.S. Fish and Wildlife Service. Its purpose is to document the total distribution, seasonality, and abundance of nesting by the green turtle (Chelonia mydas) in Florida. Survey data are derived from observations of tracks and other nesting signs left on the beach by sea turtles. Species identifications and determinations of nesting vs. non-nesting emergences are based on the evaluation of visible features of the track and the nest. Data are gathered on more than 200beaches through a network of permit holders consisting of private conservation groups, volunteers, consultants, academics, local governments, federal agencies, and the Florida Park Service. Nest density classifications of low, medium and high were developed. Ranks for green turtles were on a statewide basis. Surveys in the SNBS program may vary with respect to start/stop dates, frequency, duration and beach length between years for a particular beach, as well as between beaches. Survey results are used by managers to evaluate and minimize impacts to turtles and their nests due to human activities such as coastal construction, beach re-nourishment, and recreation, as well as to identify important areas for enhanced protection or land acquisition.

Credits: FWC-FWRI, Statewide Nesting Beach Survey program coordinator.

Use limitations: FWC makes no claims as to suitability of these data for other purposes. Users should be aware that comparison with other data sets for the same area from other time periods may be inaccurate due to inconsistencies resulting from changes in mapping conventions, data collection, and computer processes over time. FWC shall not be liable for improper or incorrect use of these data. These data are not legal documents and are not to be used as such. It should be noted that shapefiles consisting of statewide survey areas are general representations.

Filter: None

4.17.2. Loggerhead Sea Turtle

Loggerhead Sea Turtle Nest Densities

Description:

The State of Florida, through the Florida Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute, coordinates the Statewide Nesting Beach Survey program (SNBS). The SNBS was initiated in 1979 under a cooperative agreement between FWC (then DNR) and the U.S. Fish and Wildlife Service. Its purpose is to document the total distribution, seasonality, and abundance of nesting by loggerhead (Caretta caretta) sea turtle in Florida. Survey data are derived from observations of tracks and other nesting signs left on the beach by sea turtles. Species identifications and determinations of nesting vs. non-nesting emergences are based on the evaluation of visible features of the track and the nest. Data are gathered on more than 200 beaches through a network of permit holders consisting of private conservation groups, volunteers, consultants, academics, local governments, federal agencies, and the Florida Park Service. Nest density classifications of low, medium and high were developed. For the loggerhead turtle, ranking was done within genetic subunits. Surveys in the SNBS program may vary with respect to start/stop dates, frequency, duration and beach length between years for a particular beach, as well as between beaches. Survey results are used by managers to evaluate and minimize impacts to turtles and their nests due to human activities such as coastal construction, beach re-nourishment, and recreation, as well as to identify important areas for enhanced protection or land acquisition.

Credits: FWC-FWRI, Statewide Nesting Beach Survey program coordinator.

Use limitations: FWC makes no claims as to suitability of these data for other purposes. Users should be aware that comparison with other data sets for the same area from other time periods may be inaccurate due to inconsistencies resulting from changes in mapping conventions, data collection, and computer processes over time. FWC shall not be liable for improper or incorrect use of these data. These data are not legal documents and are not to be used as such. It should be noted that shapefiles consisting of statewide survey areas are general representations.

Filter: None.

4.17.3. Leatherback Sea Turtle

Leatherback Sea Turtle Nest Densities

Description:

The State of Florida, through the Florida Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute, coordinates the Statewide Nesting Beach Survey program (SNBS). The SNBS was initiated in 1979 under a cooperative agreement between FWC (then DNR) and the U.S. Fish and Wildlife Service. Its purpose is to document the total distribution, seasonality, and abundance of nesting by the leatherback (Dermochelys coriacea) sea turtle in Florida. Survey data are derived from observations of tracks and other nesting signs left on the beach by sea turtles. Species identifications and determinations of nesting vs. non-nesting emergences are based on the evaluation of visible features of the track and the nest. Data are gathered on more than 200 beaches through a network of permit holders consisting of private conservation groups, volunteers, consultants, academics, local governments, federal agencies, and the Florida Park Service. Nest density classifications of low, medium and high were developed. Ranks for leatherbacks were on a statewide basis. Surveys in the SNBS program may vary with respect to start/stop dates, frequency, duration and beach length between years for a particular beach, as well as between beaches. Survey results are used by managers to evaluate and minimize impacts to turtles and their nests due to human activities such as coastal construction, beach re-nourishment, and recreation, as well as to identify important areas for enhanced protection or land acquisition.

Credits: FWC-FWRI, Statewide Nesting Beach Survey program coordinator.

Use limitations: FWC makes no claims as to suitability of these data for other purposes. Users should be aware that comparison with other data sets for the same area from other time periods may be inaccurate due to inconsistencies resulting from changes in mapping conventions, data collection, and computer processes over time. FWC shall not be liable for improper or incorrect use of these data. These data are not legal documents and are not to be used as such. It should be noted that shapefiles consisting of statewide survey areas are general representations.

Filter: None.

4.18. Seafloor Topography - LIDAR

Description:

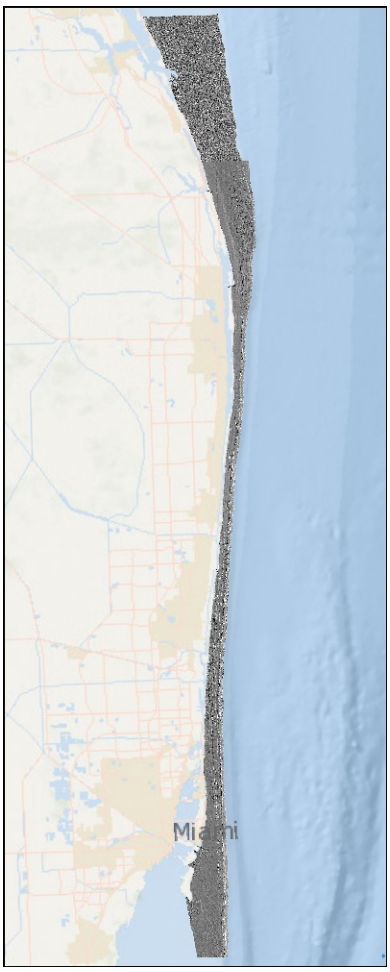
This is a hillshaded layer of high resolution bathymetric data in SE FL. The data depict the topography of the seafloor in a grey scale image that illustrates high and low areas through highlights and shadows. The layer was created with a 45° sun azimuth and angle.

The original source data were from several surveys throughout the region. Palm Beach was collected in 2002 by LADS Tenix, Miami-Dade and Broward were collected in 2008 by LADS Tenix. Martin was collected by Blom Aerofilms in 2009.

Credits: Brian Walker, Nova Southeastern University compiled the data and created the layers.

Use limitations: These data are derived from depth information but do not contain depth information. The legend is just grey-scale pixel values. The layer can be used in concert with the bathymetric contours to understand the depths of features. Not for navigational use.

Filter: None.



4.19. Seagrass Habitat (Florida)

seagrass_fl_poly

Description:
This GIS data set was developed to represent the most recent seagrass mapping available in Florida for current statewide display and analysis. Not all areas have been mapped. This data set includes areas that were not previously mapped in other statewide compilations. This data set has been updated in several areas from the previous compilation, including Indian River Lagoon (2009), Northern Miami-Dade (2009), Biscayne Bay (2005), Dry Tortugas (2006), and Parts of Rookery Bay National Estuarine Research Reserve (2003-2006).

Credits: FWC-FWRI

Use limitations: FWC shall not be liable for improper or incorrect use of this data. These data are not legal documents and are not to be used as such. This is not a survey data set and should not be utilized as such. These data are not to be used for navigation.

These data are not appropriate for time series comparisons to previous statewide compilations. This polygon GIS data set represents a compilation of statewide seagrass data from various source agencies and scales. The data were mapped from sources ranging in date from 1987 to 2010. Not all data in this compilation are mapped from photography; some are the results of field measurements.

The original source data sets were not all classified in the same manner; some used the Florida Land Use Cover and Forms Classification System (FLUCCS) codes 9113 for discontinuous seagrass and 9116 for continuous seagrass; some defined only presence and absence of seagrass, and some defined varying degrees of seagrass percent cover. In order to merge all of these data sources into one compilation data set, FWRI reclassified the various source data attribute schemes into two categories: "Continuous Seagrass" and "Patchy (Discontinuous) Seagrass". In areas where studies overlap, the most recent study where a given area has been interpreted is represented in this data set. This data set is not comparable to previous statewide data sets for time series studies - not all areas have been updated since the previous statewide compilation and some areas previously not mapped are now included. Please contact GIS Librarian to request the source data if you need to do a time series comparison.

Filter: None.

4.20. Seagrass Habitat (Southesat Florida)

Seagrass Habitat
Southeast Florida

Description:
This is shapefile of the Seagrass Habitats from the regional Benthic Habitat maps. It is a combination of the most recent southeast Florida benthic habitat maps and previous regional mapping efforts. Previous mapping efforts include benthic habitat maps in Broward County (Walker, Riegl, and Dodge 2008), Palm Beach County (Riegl et al 2005), Miami-Dade County (Walker 2009), and Martin County (Walker and Gilliam 2013). The nearshore habitats south of Hillsboro Inlet have been recently updated to a finer resolution (Walker and Klug 2014). Polygons were created by outlining and defining the features at a 1:3,000 scale and minimum mapping unit of 0.4 ha (1:1,000 scale and 0.1 ha mmu for nearshore south of Hillsboro Inlet) using recent aerial photography and high resolution bathymetric survey data including the 2013 nearshore aerial surveys collected for this purpose, 2009 NOAA bathymetry, 2008 Broward LIDAR, 2008 and 2009 Martin County LIDAR, 2002 Miami-Dade and Palm Beach LIDAR. The habitats were classified according to established NOAA guidelines in coordination with the NOS Coral Mapping Program.

Credits: This work was prepared by Brian K. Walker at Nova Southeastern University for the Florida Department of Environmental Protection (FDEP) and Florida Fish and Wildlife Conservation Commission (FWC).

Use limitations: Not to be used for navigation. The maps depict Seagrass habitats that are larger than the minimum mapping unit in offshore habitats.

Filter: Yes, the minimum percent of mapped Seagrass Habitat area within each planning unit. Contains a Minimum/Maximum slider with 10 percent intervals to include or exclude planning units that contained the specified percent of seagrass. It was used to summarize the combined amount of benthic habitats in the Marine Planner drawing summaries and statistics as well.

4.21. Tidal Flats

Tidal Flats Florida

Description:

This GIS data set represents tidal flats in Florida for cartographic and analytical purposes. Source years vary.
Tidal flats are non-vegetated areas of sand or mud protected from wave action and composed primarily of mud transported by tidal channels. An important characteristic of the tidal flat environment is its alternating tidal cycle of submergence and exposure to the atmosphere. This GIS data set was created to show a statewide representation of unvegetated tidal flats, compiled from the best available sources. The sources included individual seagrass mapping studies and National Wetlands Inventory (NWI) data for Florida. The NWI was ERASEd using more recent data sources that showed some areas were indeed vegetated.

Credits: FWC-FWRI

Use limitations:

The methodology is different from previous statewide tidal flats data sets; this data set is not intended for temporal statewide comparisons. Users should be aware that comparison with other data sets for the same area from other time periods may be inaccurate due to inconsistencies resulting from changes in mapping conventions, data collection, and computer processes over time. FWC shall not be liable for improper or incorrect use of this data. These data are not legal documents and are not to be used as such. This is not a survey data set and should not be utilized as such. These data are not to be used for navigation.

Filter: None.

4.22. Worm Reef Habitat

Worm Reef Habitats Florida East Coast

Description:

This GIS data set represents known locations of annelid worm reefs. It is not a comprehensive mapping effort. The Nature Conservancy created a worm reef shapefile, containing the locations of annelid worm reefs (Phragmaopoma lapidosa) on Florida's east coast as identified from available literature and location information obtained from worm reef experts in Florida. FGDL - Digital Orthophoto Quarter Quad 3 Meter aerial images were used in some cases to identify sites from previous sources. FWRI staff added worm reefs from the Broward County benthic habitat mapping (2004). Sources Used by TNC include: Kirtley, D. and W. Tanner. 1968. Sabellariid Worms: Builders of a major reef type. Journal of Sedimentary Petrology, Vol. 38, No. 1, pp. 73-38. McCarthy, D. 2004. Smithsonian Marine Station at Fort Pierce. Personal communication. Stauble, D. and D. McNeil. 1985. Coastal geology and the occurrence of beachrock: central Florida Atlantic coast. Field Guide for the Annual Meeting of the Geological Society of America, part 1. 27 p.

Credits:

The Nature Conservancy provided the original worm reefs shapefile. FWRI added reefs in Broward County.

Use limitations:

Users should be aware that comparison with other data sets for the same area from other time periods may be inaccurate due to inconsistencies resulting from changes in mapping conventions, data collection, and computer processes over time. FWC shall not be liable for improper or incorrect use of this data. These data are not legal documents and are not to be used as such. This is not a survey data set and should not be utilized as such. These data are not to be used for navigation.

Filter: None.

5. MANAGEMENT SHAPEFILE METADATA

5.1. Aquatic Preserves

Aquaticpreserves_fl_poly

Description:

Divisions within the Florida Department of Environmental Protection (FDEP) have felt the need to develop digital coverages for the state-owned or managed properties they oversee and are in the process of reducing the legal descriptions on deeds into a digital form by interpreting and transferring the legal description to a quad sheet or using one or another of the COordinate GeOmetry (COGO) systems. These lands include the Aquatic Preserves and the State Park boundaries. Where possible, to minimize duplication of effort, the Department acquired the boundaries already created for the Aquatic Preserves. This GIS data set represents aquatic preserves (AP) in the State of Florida. The Fish and Wildlife Research Institute (FWRI) originally created Aquatic Preserves (AP) in the State of Florida from legal descriptions using 1:24000 scale shoreline. Florida Department of Environmental Protection (FDEP) Coastal and Aquatic Managed Areas (CAMA) now maintains the data set. Aquatic preserves are ecologically significant submerged lands maintained in relatively pristine condition.

Credits: FWC-FWRI

Use limitations:

Users should be aware that comparison with other data sets for the same area from other time periods may be inaccurate due to inconsistencies resulting from changes in mapping conventions, data collection, and computer processes over time. FWC shall not be liable for improper or incorrect use of this data. These data are not legal documents and are not to be used as such. This is not a survey data set and should not be utilized as such. These data are not to be used for navigation.

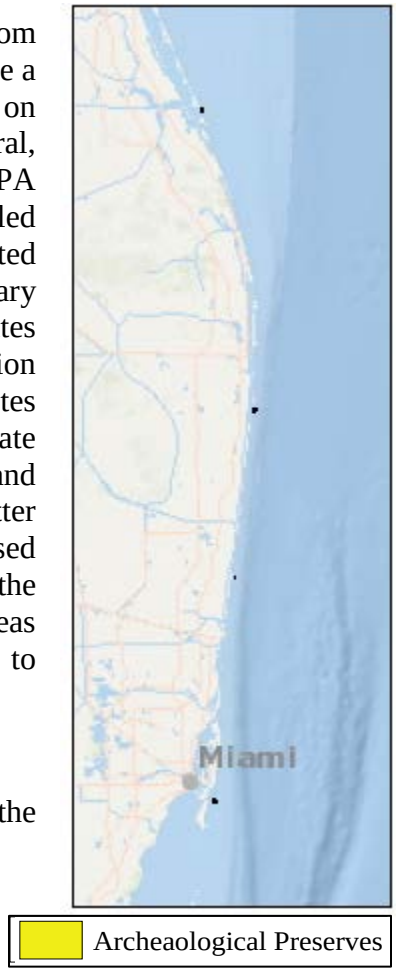
Filter: None.

5.2. Archaeological Preserves

Arch_preserves_mpa_may13

Description:

The inventory represents a collection of data compiled from various federal, state, tribal and territorial entities to provide a publicly available source of comprehensive information on place-based marine conservation efforts under U.S. federal, state, territorial, local, and tribal jurisdiction. The MPA Inventory is a comprehensive catalog that provides detailed information for existing marine protected areas in the United States. The inventory provides geospatial boundary information (in polygon format) and classification attributes that seek to define the conservation objectives, protection level, governance and related management criteria for all sites in the database. The comprehensive inventory of federal, state and territorial MPA sites provides governments and stakeholders with access to information to make better decisions about the current and future use of place-based conservation. The information also will be used to inform the development of the national system of marine protected areas as required by Executive Order 13158. This is an update to the FGDL layer MPA_MAR11.shp



Credits:

NOAA Marine Protected Areas Center in joint effort with the US Department of the Interior

Use limitations:

The MPA Center shall not be held liable for improper or incorrect use of the data described and/or contained in this database. These data and related graphics are not legal documents and are not intended to be used as such. The information contained in these data is dynamic and may change over time. The data are not better than the original sources from which they were derived. It is the responsibility of the data user to use the data appropriately and within the limitations of geospatial data in general, and these data in particular.

Filter: None.

5.3. Beach Nourishment Projects

Southeast Beach Nourishment

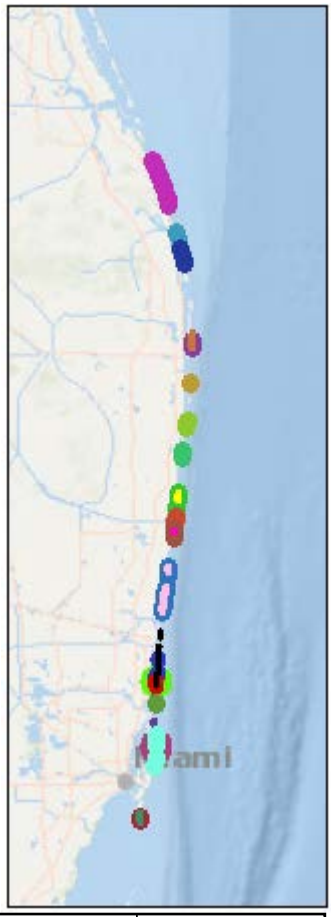
Description:
These data are intended to be used as a visual to locate and identify the issued beach nourishment projects in the southeast region of the state.

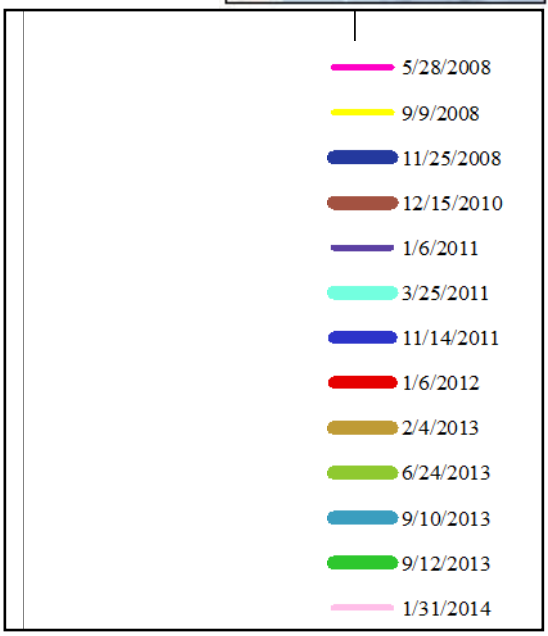
Project lines have been established in a still ongoing effort to identify specific areas of the counties where active or expired projects exist. Considering this effort is still on going and in draft form the information contained within the layers are subject to change and should not be used for any surveying, engineering, or legal determinations. The information used to determine the project line locations have been translated and taken from the Final Orders issued for each project.

Credits:
Department of Environmental Protection, Beaches, Mining, and ERP Support Program.

Use limitations:
Should this information be used in any reports, articles, or databases it should be noted that this is not a final product and is still in draft form and subject to change.

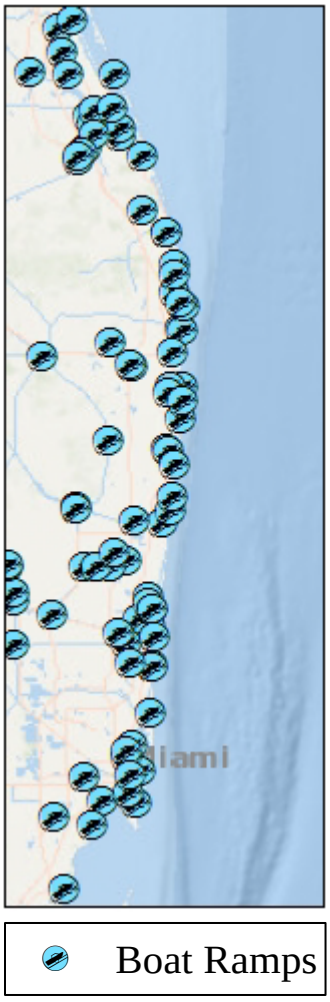
Filter: None.





5.4. Boat Ramps

boat_ramps



Description:
The original data set was produced during the Statewide Boating Access Facilities Inventory and Economic Study and delivered on August 30, 2009. The purpose of the study was to create a comprehensive inventory of publicly accessible boat access facilities and conduct several economic studies to quantify economic impact of recreational boating; estimate present and projected supply/demand; conduct site suitability analysis for potential or expanded facilities; and estimate capital costs for new or improved facilities. This data set is modified from the original format and supplemented by additional data maintained by FWC. These data will eventually evolve into a planned integrated boating access facilities inventory system. This data set is a selection of facilities from the raw data set that the contractor identified to be in operation and accessible to the general public during the time of data compilation. This data set includes both government managed facilities accessible to the general public and commerciality operated facilities accessible to the general public. This modified data set is meant to be an interim data set for public dissemination until a more robust database application is constructed to provide interactive access to the original data via web services. Currently these data are considered preliminary and are not verified by FWC as to accuracy and completeness.

Credits: Original data compilation conducted under sub-contract to the Urban Harbors Institute at the University of Massachusetts at Boston. FWC-FWRI, US Fish and Wildlife Service, and Lee County commissioned the body of work from which these data are derived. Bordner Research Associates conducted field inspections. The project was commissioned in 2005 and titled the Florida Boating and Access Facilities Inventory and Economic Study.

Use limitations: Users should be aware that comparison with other data sets for the same area from other time periods may be inaccurate due to inconsistencies resulting from changes in mapping conventions, data collection, and computer processes over time. FWC shall not be liable for improper or incorrect use of this data. These data are not legal documents and are not to be used as such. This is not a survey data set and should not be utilized as such. These data are not to be used for navigation.

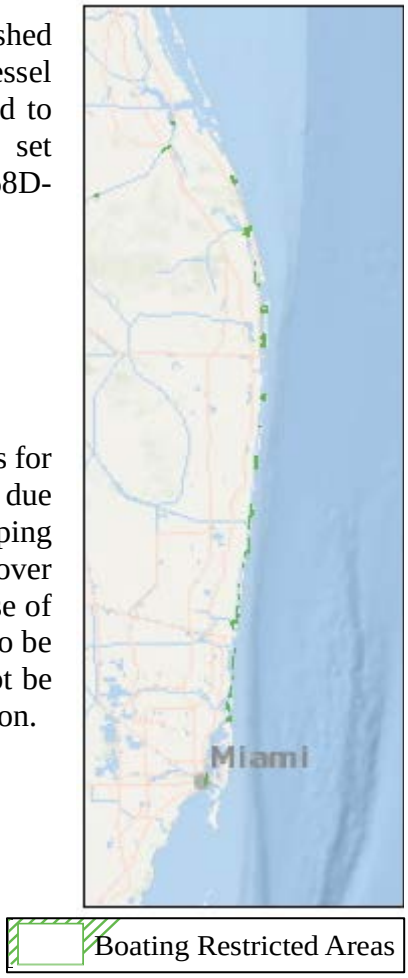
Filter: None.

5.5. Boating Restricted Areas

boating_restricted_areas_pol

Description:

This dataset depicts the boating restricted areas as established for the purpose of regulating the speed and operation of vessel traffic for the safety of the public. This data is provided to assist in located boating restricted areas. This data set represents the FWC Boating Restricted Areas, Chapter 68D-24.



Credits:

FWC-FWRI.

Use limitations:

Users should be aware that comparison with other data sets for the same area from other time periods may be inaccurate due to inconsistencies resulting from changes in mapping conventions, data collection, and computer processes over time. FWC shall not be liable for improper or incorrect use of this data. These data are not legal documents and are not to be used as such. This is not a survey data set and should not be utilized as such. These data are not to be used for navigation.

Filter: None.

5.6. City Limits

City Limits

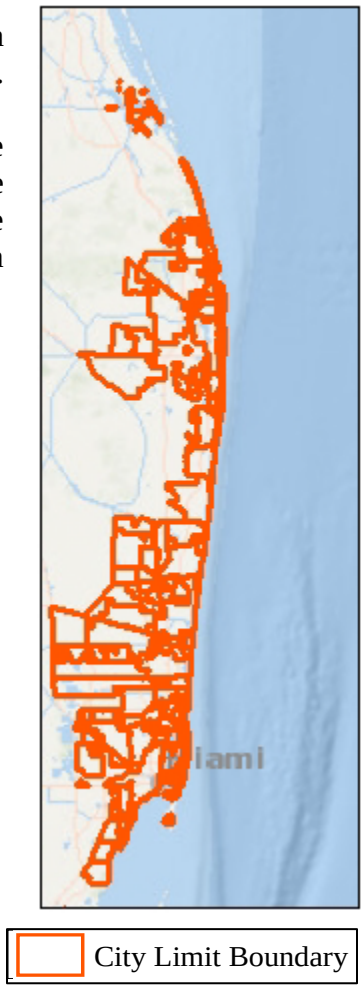
Description:
The data was created to serve as base information for use in GIS systems for a variety of planning and analytical purposes.

This dataset contains city limits for the State of Florida. The data was compiled by the GeoPlan Center using tax code boundaries as defined in 2010 county parcel data from the Florida Department of Revenue (FDOR). This dataset is an update to the city limits shapefile par_citylm_2010.shp.

Credits: GeoPlan

Use limitations: None

Filter: None.



5.7. Coastal Cable Submarine Lines

Coastal Cable Submarine Lines

Description:

These data were derived from National Oceanic and Atmospheric Administration (NOAA) Offshore Installations Electronic Navigational Charts (ENC). A polyline submarine cable GIS layer was downloaded and then clipped to illustrate only the submarine cables in Florida.

Credits:

NOAA

Use limitations: None

Filter: None.

5.8. Commercial Anchorage Areas

Commercial Anchorage Areas

Description:

The purpose of this data is to provide a single map layer covering the Anchorage Areas for the United States contained in the Code of Federal Regulation documentation. This layer represents Anchorage Areas as specified by the U.S. Coast Guard in 2008 CFR Title 33 Part 110 and additional anchorage areas provided by 2000 NOAA data.

Credits:

Operation Systems Center (OSC), United States Coast Guard (USCG),

Use limitations:

Not recommended for navigation

Filter:

Yes. Include or exclude planning units that overlap with designated anchorages.

5.9. County Boundary

county_boundary

Description:

In order for others to use the information in the Census MAF/TIGER database in a geographic information system (GIS) or for other geographic applications, the Census Bureau releases to the public extracts of the database in the form of TIGER/Line Shapefiles. The TIGER/Line Files are shapefiles and related database files (.dbf) that are an extract of selected geographic and cartographic information from the U.S. Census Bureau's Master Address File / Topologically Integrated Geographic Encoding and Referencing (MAF/TIGER) Database (MTDB). The MTDB represents a seamless national file with no overlaps or gaps between parts, however, each TIGER/Line File is designed to stand alone as an independent data set, or they can be combined to cover the entire nation. The primary legal divisions of most States are termed counties. The 2010 Census boundaries for counties and equivalent entities are as of January 1, 2010, primarily as reported through the Census Bureau's Boundary and Annexation Survey (BAS).

Credits:

U.S. Census Bureau.

Use limitations:

The TIGER/Line Shapefile products are not copyrighted however TIGER/Line and Census TIGER are registered trademarks of the U.S. Census Bureau. These products are free to use in a product or publication, however acknowledgement must be given to the U.S. Census Bureau as the source. The boundary information in the TIGER/Line Shapefiles are for statistical data collection and tabulation purposes only; their depiction and designation for statistical purposes does not constitute a determination of jurisdictional authority or rights of ownership or entitlement and they are not legal land descriptions. Coordinates in the TIGER/Line shapefiles have six implied decimal places, but the positional accuracy of these coordinates is not as great as the six decimal places suggest.

Filter: None.

5.10. Erosion Locations 2014

Florida Critical Erosion Areas 2014

Description:
This dataset shows the areas and severity of beach erosion as determined by our engineering staff. Based on the Critical Erosion Report for 2014. Indicates the condition of shoreline, determined by our staff of Coastal Engineers. This report is used to document areas of change and to help the beach management staff with prioritizing projects and resources to the areas of greatest need.

Credits:
Florida Dept. of Environmental Protection, Water Resources Division.

Use limitations:
Florida Dept. of Environmental Protection, Water Resources Division must be given credit if used in any presentation, printed or digital.

Filter: None.

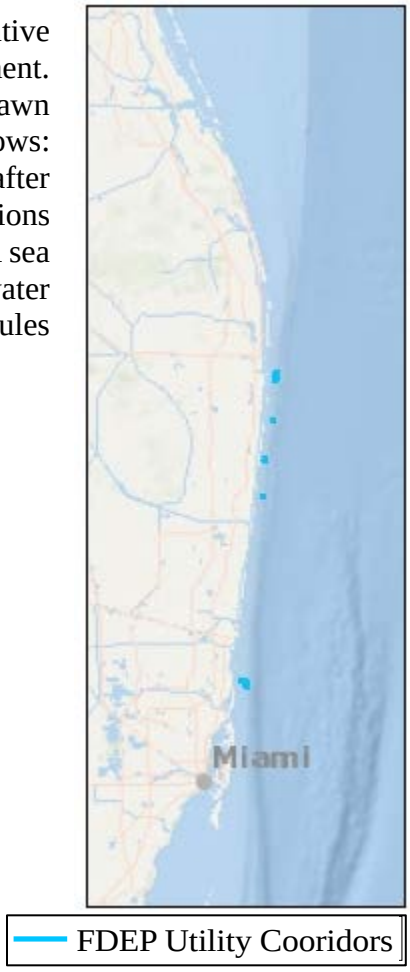
Noncritical Inlet

5.11. FDEP Utility Corridor

FDEP Utility Corridors

Description:

This layer was created from the 2012 Florida Administrative Code 18-21 Sovereignty Submerged Lands Management. Points were plotted from the code and lines were drawn between them to illustrate the gaps. The code reads as follows: (l) Applications for telecommunication lines received after October 29, 2003 that originate from or extend to locations outside of the state's territorial limits through the territorial sea including the area between mean high and mean low water lines and any associated conduits shall be subject to the rules specified in said document



Credits:

Walker, B.K. Nova Southeastern University

Use limitations:

There are no access and use limitations for this item.

Filter: None.

5.12. Fish Haven

Fish Havens

Description:

Fish Havens are areas established by private interests, usually sport fishermen, to simulate natural reefs and wrecks that attract fish. The reefs are constructed by placing assorted materials on the sea floor in areas which may be of very small extent or may stretch a considerable distance along a depth contour. Fish Havens are outlined and labeled on charts. Also, called Fishery Reefs. They are added or changed fairly frequently.

This data layer was digitized from the raster charts rather than having coordinates manually entered in from a Corps of Engineers Permit.

You can tell where they came from by looking at the "SORIND" field (SORIND stands for "Source Indication" in S-57 protocol and refers to the origin of the data.) In most cases, you will see a chart listed as the source (meaning it was digitized from there). In other cases, you may see a document like "L-1444-2013". The letter means that the coordinates were manually entered from a permit or other original source rather than being digitized from a raster chart.

Credits:

NOAA

Use limitations:

There are no access and use limitations for this item. Not for navigation.

Filter: None.

5.13. FKNMS Boundary

Florida Keys National Marine Sanctuary Boundary

Description:
These data were created to represent the boundary of the Florida Keys National Marine Sanctuary. These GIS data represent the boundary of the Florida Keys National Marine Sanctuary (FKNMS) in polygon format. These data were generated from latitude and longitude coordinates in degrees, minutes, and seconds as given in the Federal Register. The first version of this data set was created at FWRI in 1998. The current version includes the January 2001 changes, including the Tortugas Ecological Reserve North and South areas as part of the FKNMS, in the boundary description. This version of the file does not include the shoreline. Because the FKNMS shares boundaries with other existing managed areas, every effort was made to use the most precise coordinates available for these boundaries. However, due to precision differences in the definitions, these shared boundaries may appear different in GIS layers that were created based on definitions of the other managed areas. This edition was created using the most precise coordinates available. The following sources were used to make these data: 1) boundary of FKNMS, Federal Register 2) boundary of Everglades National Park, National Park Service (based on 1:24k USGS Quads) 3) boundary of Biscayne Bay National Park, National Park Service (based on 1:24k USGS Quads).

Credits: FWC-FWRI

Use limitations:
Users should be aware that comparison with other data sets for the same area from other time periods may be inaccurate due to inconsistencies resulting from changes in mapping conventions, data collection, and computer processes over time. FWC shall not be liable for improper or incorrect use of this data. These data are not legal documents and are not to be used as such. This is not a survey data set and should not be utilized as such. These data are not to be used for navigation.

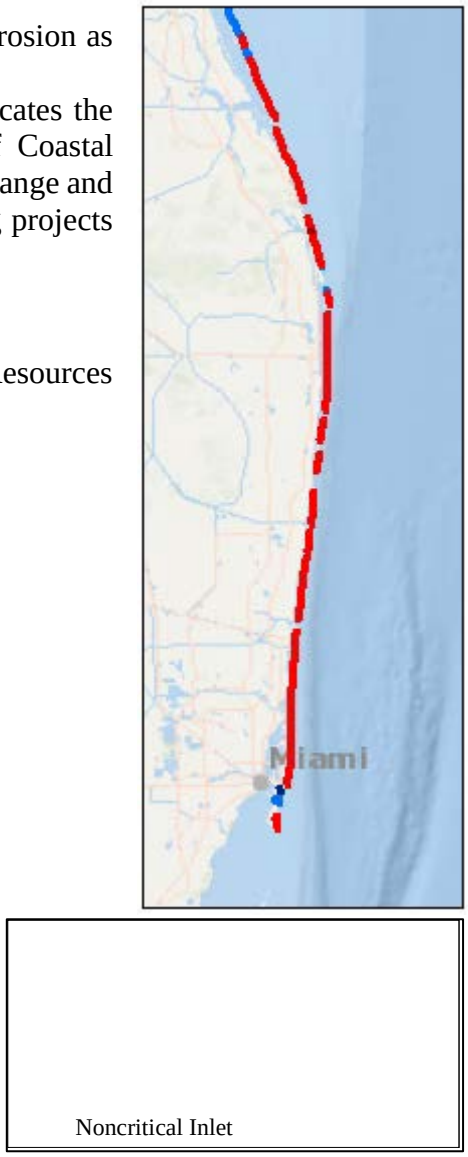
Filter: None.

5.14. Florida Critical Erosion Areas 2013

Florida_Critical_Erosion_Areas_2013

Description:

This dataset shows the areas and severity of beach erosion as determined by our engineering staff.
Based on the Critical Erosion Report for 2013. Indicates the condition of shoreline, determined by our staff of Coastal Engineers. This report is used to document areas of change and to help the beach management staff with prioritizing projects and resources to the areas of greatest need.



Credits:

Florida Dept. of Environmental Protection, Water Resources Division

Use limitations:

None.

Filter: None.

5.15. Inlets and Passes

Inlets_and_passes

Description:

This GIS data set references major water features for cartographic purposes. Only named features are represented along the outer coastline, so this is not a complete listing of all inlets, passes, rivers, etc. This GIS data set represents inlets, passes, and major rivers along the coast of Florida. Point location of major features are heads-up digitzed using 2004 DOQQ imagery as reference. The names of features are taken from GNIS, when available or from NOAA Nautical Charts.

Credits: FWC-FWRI

Use limitations:

Users should be aware that comparison with other data sets for the same area from other time periods may be inaccurate due to inconsistencies resulting from changes in mapping conventions, data collection, and computer processes over time. FWC shall not be liable for improper or incorrect use of this data. These data are not legal documents and are not to be used as such. This is not a survey data set and should not be utilized as such. These data are not to be used for navigation.

Filter: Yes. Distance from inlet was calculated for every planning unit and provided. Contains a Minimum/Maximum slider with 0.5 mile intervals to include or exclude planning units from the specified distance from the inlets.

5.16. Joint Coastal Construction Permits

Joint Coastal Construction Permits

Description:
This information was gathered by FDEP for Maritime Industry and Coastal Construction Impacts (MICCI) projects.

On October 13, 1995, the Department of Environmental Protection implemented Section 161.055, of the Florida Statutes, initiating concurrent processing of applications for coastal construction permits, environmental resource permits and sovereign submerged lands authorizations. These permits and authorizations, which were previously issued separately, and by different state agencies, have now been consolidated into a "joint coastal permit" or JCP. The consolidation of these reviews and the assignment of responsibility into a single program has eliminated the potential for conflict between permitting agencies and helped ensure that reviews are conducted in a timely manner. A copy of each permit application is forwarded to the United States Army Corps of Engineers for separate processing of the federal dredge and fill permit, if necessary.

Activities that require a JCP include beach restoration or nourishment; construction of erosion control structures such as groins and breakwaters; public fishing piers; maintenance of inlets and inlet-related structures; and dredging of navigation channels that include disposal of dredged material onto the beach or in the nearshore area.

Palm Beach County

Credits: FDEP

Use limitations: None

Filter: None.

5.17. Key Biscayne Special Management Zone

Special_Management_Zones

Description:
Since 1983, the South Atlantic Fisheries Management Council has allowed the designation of Special Management Zones (SMZs) as an incentive to create artificial reefs and fish attraction devices to increase the numbers of fish in an area and/or create fishing opportunities that would not otherwise exist. Anyone in possession of an Army Corps of Engineers permit to create an artificial reef, may request that the South Atlantic Council designate the area as an SMZ. Designation of an area as a SMZ allows for fishing gear restrictions to prevent overexploitation of fishery resources. Such a designation promotes orderly use of the fishery resources on and around the artificial reefs, reduces potential user group conflicts, and maintains the intended socioeconomic benefits of the artificial reefs. Many of these areas have been established through cooperation with fishing organizations and local governments and serve as a means to promote localized conservation and positive fishing experiences. These are also designated as Essential Fish Habitat – Habitat Areas of Particular Concern (EFH-HAPC). A total of 51 SMZs have been designated off South Carolina, Georgia and Florida.

Credits: South Atlantic Fisheries Management Council

Use limitations: The data herein are based on interpretation of available information and should not be construed as legally binding.

Filter: None.

5.18. Marine Facility

marine_facilities

Description:
This GIS data set shows the locations of marine facilities in the state of Florida. These data were created by FWRI staff referencing various sources. Attributes include type of facility and location (address). Please note that with the exception of a few areas, these data were compiled in 2001 or prior.

Credits: FWC-FWRI

Use limitations:
Users should be aware that comparison with other data sets for the same area from other time periods may be inaccurate due to inconsistencies resulting from changes in mapping conventions, data collection, and computer processes over time. FWC shall not be liable for improper or incorrect use of this data. These data are not legal documents and are not to be used as such. This is not a survey data set and should not be utilized as such. These data are not to be used for navigation.

Filter: None.

5.19. National Parks

nps

Description:
This dataset contains National Park and Seashore Service boundaries in the State of Florida. The data are created to serve as base information for use in GIS systems for a variety of planning and analytical purposes.

Credits: NPS Water Resources Division

Use limitations: These digital national park unit boundaries should not be used for any legal boundary disputes. To obtain the most accurate, current boundary, users should contact the specific park. The National Park Service shall not be held liable for improper or incorrect use of the park boundary data described and/or contained herein. These data are not legal documents and are not intended to be used as such. The information contained in these data is dynamic and may change over time. The data are no better than the original sources from which they were derived. In fact, the data are likely less accurate than the original sources as no attempt has been made to thoroughly error check the data. It is the responsibility of the data user to use the data appropriately and consistent within the limitations of geospatial data in general and these data in particular. The National Park Service gives no warranty, expressed or implied, as to the accuracy, reliability, or completeness of these data. Users must assume responsibility to determine the appropriate use of these data.

Filter: None.

5.20. National Wildlife Refuges

nwrfla_jun13_HobeSound

Description:
This data layer depicts the external boundaries of lands and waters that are approved for acquisition by the U.S. Fish and Wildlife Service (USFWS) in North America, U.S. Trust Territories and Possessions. The primary source for this information is the USFWS Realty program.

The intended application of this data layer is as a cadastral framework for use with other data layers in GIS and mapping applications. It is specifically not intended to be used as a land survey or representation of land for conveyance or tax purposes.

Credits:
U.S. Fish and Wildlife Service, Division of Realty, Cadastral Data Working Work.

Use limitations:
Although these data and information have been processed successfully on a computer system at the U.S. Fish and Wildlife Service, USFWS, no warranty expressed or implied is made regarding the accuracy or utility of the data and information on any other system or for general or scientific purposes, nor shall the act of distribution constitute any such warranty. Inherent in any data set used to develop graphical representations are limitations of accuracy as determined by, among others, the source, scale and resolution of the data. The USFWS is not liable for the user's improper or incorrect use of the data and information described and/or contained herein. These data and any derived products are not legal documents and are not intended to be used as such. The information contained in these data may be dynamic and could change over time. The data are not better than the original sources from which they are derived. It is the responsibility of the data user to use the data appropriately and consistent with the limitations of geospatial data in general and these data in particular. It is strongly recommended that the data described or contained herein be acquired directly from an authorized USFWS source and not indirectly through some other sources which may have changed the data in some way. The USFWS is not liable for data or information that indirectly acquired through other sources.

Filter: None.

5.21. Navy Restricted Area

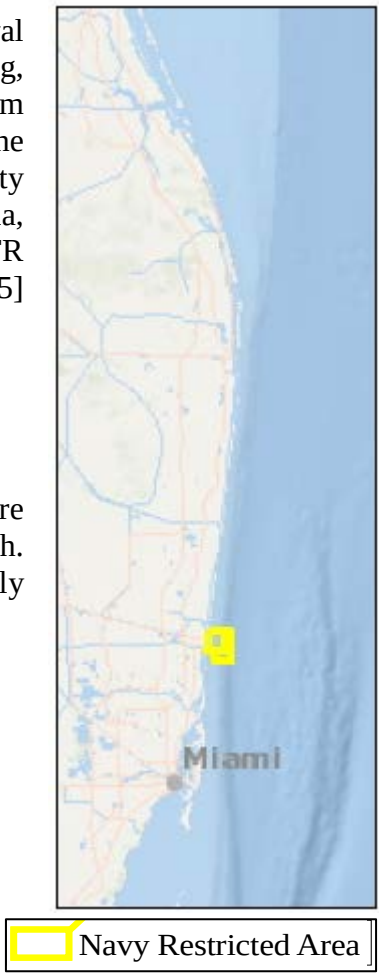
Navy Restricted Area

Description:
These data represent the regulations that apply to the Naval Exclusion Zone which are as follows: (1) Anchoring, trawling, dredging, or attaching any object to the submerged sea bottom shall be prohibited in the above described area. (2) The regulations of this section shall be enforced by the Facility Director, Naval Surface Warfare Center, Detachment Dania, Florida, and such agencies as he/she may designate. [51 FR 1370, Jan. 13, 1986, as amended at 70 FR 67371, Nov. 7, 2005]

Credits:
United States Coast Guard Electronic Raster data.

Use limitations:
Not for navigation. These data and any derived products are not legal documents and are not intended to be used as such. The USFWS is not liable for data or information that indirectly acquired through other sources.

Filter: None.



5.22. NMFS Marine Protected Areas

nmfs_mpa_mpa_may13

Description:
The NMFS MPA in southeast Florida is the St. Lucie Hump MPA. Located east of Jupiter, FL, it is habitat-rich and harbors speckled hind, juvenile snowy grouper, warsaw grouper, and mid-shelf species such as sea bass, red porgy, and red snapper. Water depths range from 216 ft. to 234 ft. The area is heavily targeted by fishermen trolling for pelagic species and experiences a high level of vessel traffic. This MPA is located between fishing areas to the north and south that are more popular or just as popular; it is anticipated this will help reduce the potential socio-economic impacts to fishermen. The area has high potential for protecting deepwater snapper grouper species as well as some mid-shelf species. The MPA Inventory is a comprehensive catalog that provides detailed information for existing marine protected areas in the United States. The inventory provides geospatial boundary information and classification attributes that seek to define the conservation objectives, protection level, governance and related management criteria for all sites in the database. The comprehensive inventory of federal, state and territorial MPA sites provides governments and stakeholders with access to information to make better decisions about the current and future use of place-based conservation. The information also will be used to inform the development of the national system of marine protected areas as required by Executive Order 13158. This is an update to the FGDL layer MPA_MAR11.shp

Credits:
NOAA Marine Protected Areas Center and the US Department of the Interior.

Use limitations:
The MPA Center shall not be held liable for improper or incorrect use of the data described and/or contained in this database. These data and related graphics are not legal documents and are not intended to be used as such. The information contained in these data is dynamic and may change over time. It is the responsibility of the data user to use the data appropriately and within the limitations of geospatial data in general, and these data in particular.

Filter: None.

5.23. No Lobster Trapping Area

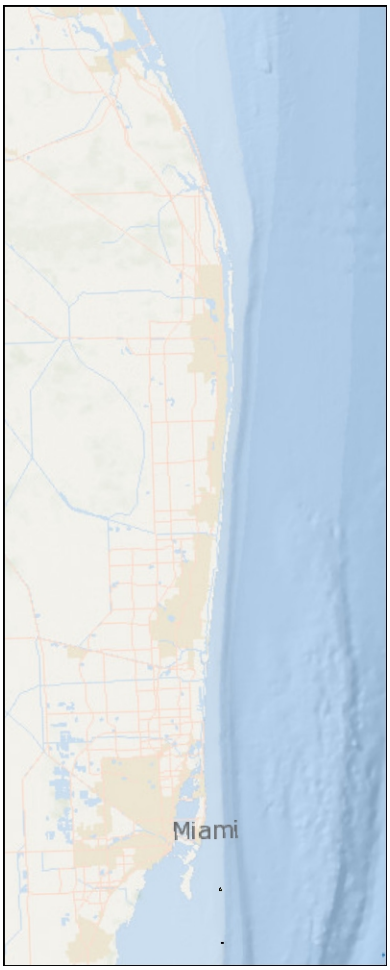
No Lobster Trapping Area

Description: No information came with this layer. A request to NOAA Center for Coastal Monitoring and Assessment was made.

Credits:

Use limitations:

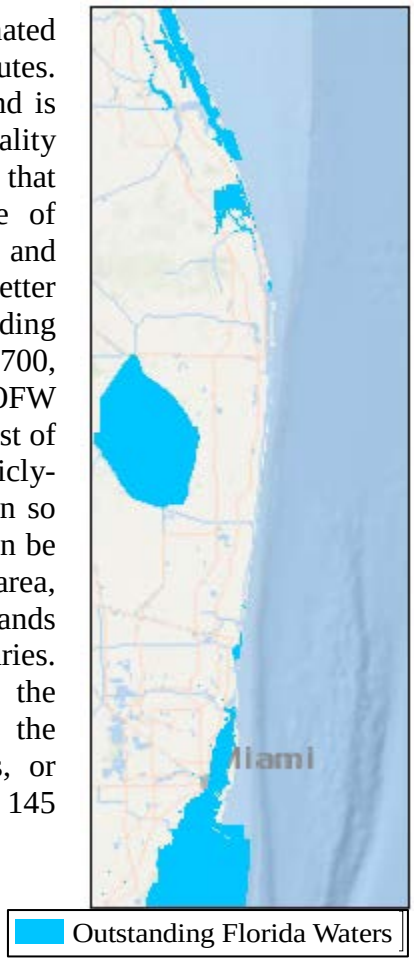
Filter: None.



5.24. Outstanding Florida Waters

Outstanding Florida Waters

zDescription:
Outstanding Florida Waters, (OFW), are waters designated worthy of special protection because of their natural attributes. This special designation is applied to certain waters, and is intended to protect and maintain existing acceptable quality standards. The OFW layer is a GIS spatial dataset that represents the OFW boundaries throughout the state of Florida. This project involves adding new data to and modifying existing data within the OFW data layer for better accuracy and representation. Boundaries for Outstanding Florida Waters (OFWs) as described in Section 62-302.700, F.A.C. This layer includes all three types of OFWs: OFW Aquatic Preserves, Special OFWs, and Other OFWs. Most of the OFWs are contained within the boundaries of publicly-owned lands managed for conservation and/or recreation so that the extent of the water features that are protected can be defined by the legal boundary of the park, recreation area, preserve, or other publicly-owned property. These lands include the Aquatic Preserves and the State Park boundaries. Where possible, to minimize duplication of effort, the Division of Environmental Permitting either acquired the boundaries already created for the Aquatic Preserves, or entered into a joint venture to create boundaries for the 145 lands managed by the Division of Parks and Recreation.



Credits: FDEP

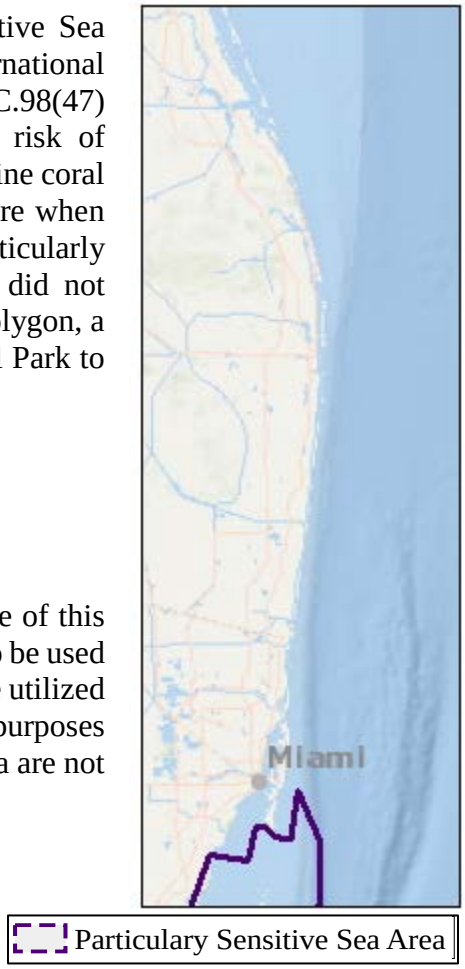
Use limitations:
This dataset should not be considered a complete and comprehensive representation. The Special Waters boundaries are provisional. Until FDEP receives full funding to finalize this data, they will evaluate the boundaries, record needed changes, and make the appropriate adjustments to the boundaries as an on-going programmatic effort. These boundaries are stored in the OFW spec data layer. Currently, all aquatic preserves are also OFWs. This was not the case in the past and may change again in the future, but an Aquatic Preserve was dropped. It's important to note that there are three aquatic preserves whose OFW boundaries differ from the aquatic preserve boundary.

Filter: None.

5.25. Particularly Sensitive Sea Area

Particularly Sensitive Sea Area around the Florida Keys

Description:
This GIS data set represents the Particularly Sensitive Sea Area around the Florida Keys as defined by the International Maritime Organization (IMO) Resolution MEPC.98(47) adopted on 8 March 2002. In order to avoid the risk of pollution and damage to this unique, fragile, and pristine coral reef ecosystem, mariners should exercise extreme care when navigating in the area which is designated as a Particularly Sensitive Sea Area: The definition given by IMO did not create a closed polygon. In order to create a closed polygon, a straight line was drawn from the Everglades National Park to the starting point of the boundary.



Credits:
FWC-FWRI

Use limitations:
FWC shall not be liable for improper or incorrect use of this data. These data are not legal documents and are not to be used as such. This is not a survey data set and should not be utilized as such. This data set is intended for cartographic purposes only. It is not intended as a legal boundary. These data are not to be used for navigation.

Filter: None.

5.26. Piers

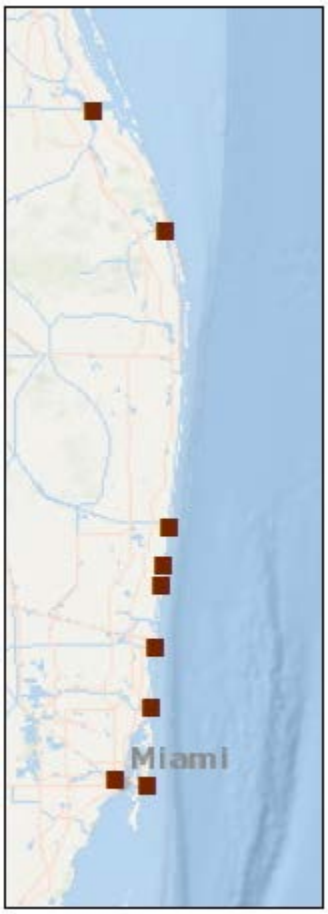
Piers

Description:
This is a point layer of all of the pier locations in the SEFCRI region. These were created for the Our Florida Reefs Decision Support Tool.

Credits: NSU

Use limitations:
NSU shall not be liable for improper or incorrect use of this data. These data are not legal documents and are not to be used as such. This is not a survey data set and should not be utilized as such. This data set is intended for cartographic purposes only. It is not intended as a legal location. These data are not to be used for navigation.

Filter: Yes. Distance from piers was calculated for every planning unit and provided. Contains a Minimum/Maximum slider with 0.5 mile intervals to include or exclude planning units from the specified distance from the piers.



5.27. Planning Grid

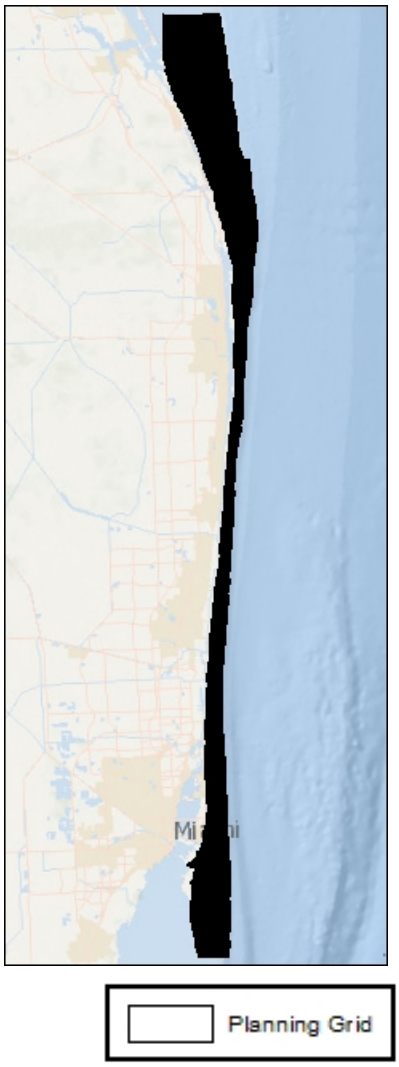
Planning Grid

Description:
This is the polygon planning grid layer used in the *Our Florida Reefs* Decision Support Tool. This grid was adopted from the southeast Florida Reef fish Visual Census Research Sampling Grid (see below). The grid is an array of adjacent square polygons 200 m on a side. Each cell was assigned a unique ID and data from other GIS layers were associated with it. All the filter layers in this report are data associated with this grid.

Credits: NSU

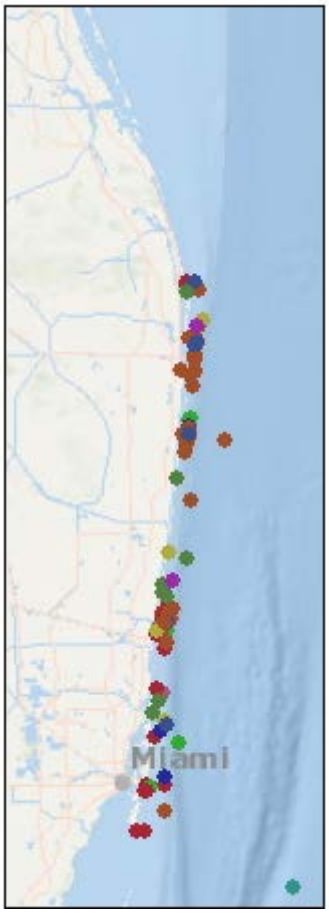
Use limitations: NSU shall not be liable for improper or incorrect use of this data. This data set is intended for cartographic purposes only. These data are not to be used for navigation. The use limitations of the grid are outlined with the individual data layers that had some filtering aspect.

Filter: None. However this grid was the basis behind all of the filtering data in the OFR planning unit filtering design.



5.28. Reef Injury Site

Reef_Injuries



Description:
This is a layer of all known previous reef injury events logged by state and local southeast Florida partners. These range from massive ship groundings to small vessel impacts as well as cable drags and other injury types. As the state's lead trustee for coral reef resources, the Florida Department of Environmental Protection (FDEP) is charged with response and recovery for coral reef injuries on sovereign submerged lands. The Florida Fish and Wildlife Conservation Commission, county governments with reefs in their jurisdiction, and federal agencies assume roles in response to coral reef injuries, depending on the specifics of the event. Where damages to reef resources do occur, the goal is to ensure that appropriate and adequate restoration and/or mitigation is carried out on impacted coral reef resources and that those responsible for damages are held accountable.

Credits: FDEP and FWC-FWRI

Use limitations:
Users should be aware that comparison with other data sets for the same area from other time periods may be inaccurate due to inconsistencies resulting from changes in mapping conventions, data collection, and computer processes over time. FDEP and FWC shall not be liable for improper or incorrect use of this data. These data are not legal documents and are not to be used as such. This is not a survey data set and should not be utilized as such. These data are not to be used for navigation.

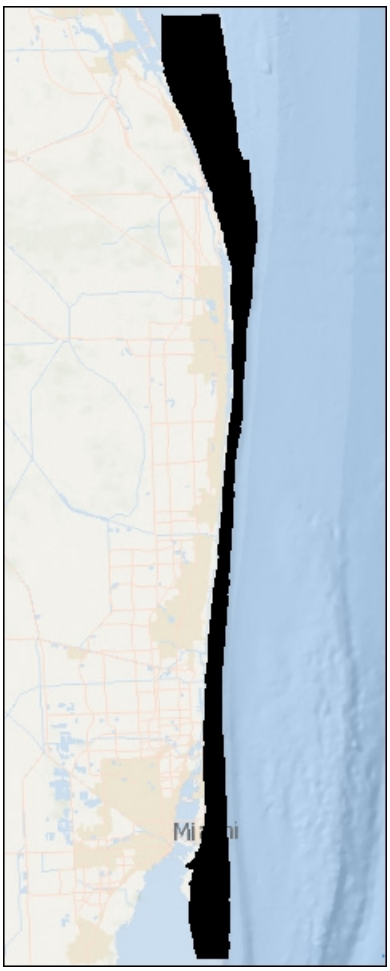
Filter:
Yes. Include or exclude planning units that overlap with known reef injury sites.

unknown

5.29. Research Sampling Grid

Research Sampling Grid

Description:
This dataset is a 200-m x 200-m polygon grid developed by The University of Miami's Rosenstiel School of Marine and Atmospheric Science (UM-RSMAS) and the National Marine Fisheries Southeast Fisheries Science Center (NFMS-SEFSC). The grid forms the basis for a two-stage stratified random sampling allocation scheme that was developed to estimate important metrics for living resource populations (e.g., corals and reef fishes) in Southwest Florida (extending from Martin County in the northeast through the Florida Keys to the Dry Tortugas in the southwest). This dataset is part of an spatial analytical framework that was developed: 1) to describe the spatial distribution patterns of living resources (reef fish, algae, corals, gorgonians, sponges, and other benthic invertebrates along the Florida Coral Reef Tract (FCRT); 2) document temporal changes in benthic communities throughout the region; 3) inform the Florida Keys National Marine Sanctuary Marine Zoning and Regulatory Review process (November 2011 through Summer 2015), and 4) the Southeast Florida Coral Reef Initiative Management Options and Implementations Process.



Credits: Steven Smith, University of Miami Rosenstiel School of Marine and Atmospheric Science

Use limitations: For use in the Florida Keys National Marine Sanctuary Marine Zoning and Regulatory Review Process only or by permission from the Principal Investigators Steven G. Smith (sgsmith@rsmas.miami.edu) or Jerald S. Ault (jault@rsmas.miami.edu) University of Miami Rosenstiel School of Marine and Atmospheric Science. Note: NOT TO BE USED FOR NAVIGATION.

Filter: None. This grid was the basis behind all of the filtering data in the OFR planning unit filtering design.

5.30. Seawall

Seawalls

Description:
This data set contains vector lines representing the shoreline and coastal habitats of South Florida (2012) classified according to the Environmental Sensitivity Index (ESI) classification system. The data symbolized in this layer indicate shore-line and coastal structures including exposed, solid, man-made structures and sheltered, solid, man-made structures. ESI data characterize the marine and coastal environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources. Environmental Sensitivity Index (ESI) is more properly known as "Sensitivity of Coastal Habitats and Wildlife to Spilled Oil" Atlases. The term "ESI" is often used in reference to the whole dataset, but the term "ESI" is really a reference to the classification system of shoreline types known as Environmental Sensitivity Index, that classifies a shoreline on a scale from 1 to 10 based upon overall sensitivity to spilled oil.

Credits:
FWC

Use limitations:
The ESI rankings progress from low to high susceptibility to oil spills. To determine the sensitivity of a particular intertidal shoreline habitat, the following factors are integrated: 1) Shoreline type (substrate, grain size, tidal elevation, origin); 2) Exposure to wave and tidal energy; 3) Biological productivity and sensitivity; 4) Ease of cleanup. Prediction of the behavior and persistence of oil in intertidal habitats is based on an understanding of the dynamics of the coastal environments, not just the substrate type and grain size. The intensity of energy expended upon a shoreline by wave action, tidal currents, and river currents directly affects the persistence of stranded oil. The need for shoreline cleanup activities is determined, in part, by the slowness of natural processes in removal of oil stranded on the shoreline. The potential for biological injury, and ease of cleanup of spilled oil are also important factors in the ESI ranking. Generally speaking, areas exposed to high levels of physical energy, such as wave action and tidal currents, and low biological activity rank low on the scale, whereas sheltered areas with associated high biological activity have the highest ranking.

Filter: None.

5.31. SEFCRI Boundary

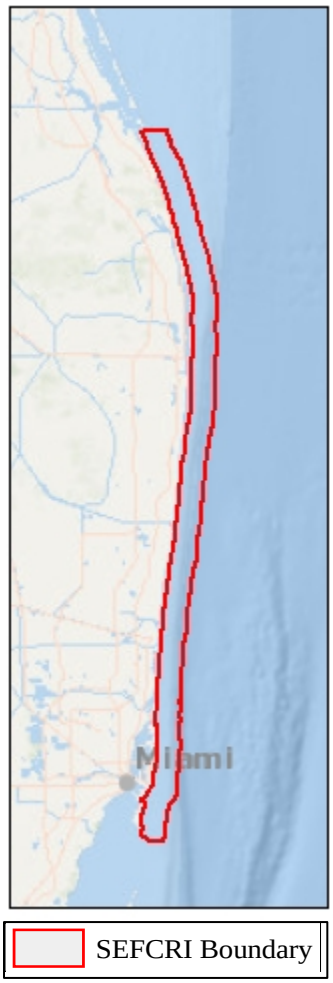
SEFCRI_boundary

Description:
This polygon describes the working boundary of the Southeast Florida Coral Reef Initiative (SEFCRI). It extends from the Biscayne National Park boundary north to St. Lucie inlet encompassing from the beach out to the 3 mile limit for the State Waters.

Credits: FDEP

Use limitations:
FDEP shall not be liable for improper or incorrect use of this data. These data are not legal documents and are not to be used as such. This is not a survey data set and should not be utilized as such. This data set is intended for cartographic purposes only. It is not intended as a legal boundary. These data are not to be used for navigation.

Filter: None.



5.32. Spear Fishing Regulated Areas (Federal)

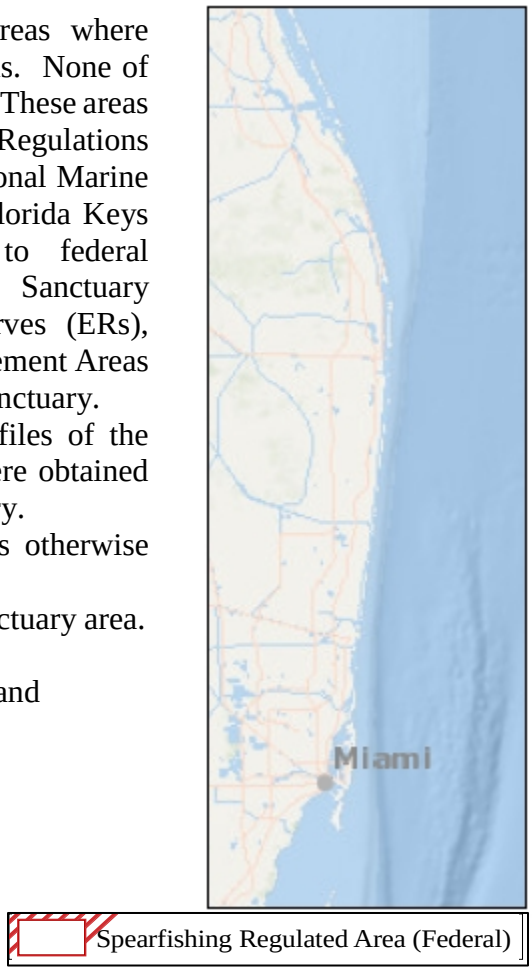
Spearfishing_regs

Description:
The purpose of this layer is to illustrate areas where spearfishing is prohibited per federal regulations. None of these areas currently exist in the SEFCRI region. These areas are defined in the Electronic Code of Federal Regulations Title 15: Commerce and Trade, Part 222 - National Marine Sanctuary Program Regulations, Subpart P - Florida Keys National Marine Sanctuary. According to federal regulations, spearfishing is prohibited in Sanctuary Preservation Areas (SPAs), Ecological Reserves (ERs), Special Use Areas (SUAs), and Existing Management Areas (EMAs) in the Florida Keys National Marine Sanctuary.
This layer was created by merging the shapefiles of the abovementioned FKNMS Zones. Shapefiles were obtained from the Florida Keys National Marine Sanctuary.
· Source: 62 FR 32161, June 12, 1997, unless otherwise noted.
· 922.164 Additional activity regulations by Sanctuary area.

Credits: NOAA Center for Coastal Monitoring and Assessment Branch

Use limitations: None Listed.

Filter: None.



5.33. Spiny Lobster Sanctuary

Spiny_lobster_sanctuary

Description:
This Spiny Lobster sanctuary map was created to match the legal description. The purpose is to graphically represent the Biscayne Bay Card Sound Spiny Lobster Sanctuary for cartographic purposes. The Biscayne National Park contains this area of Biscayne Bay known as Card Sound Lobster Sanctuary. The sanctuary boundary is defined by Florida Administrative Code Chap 68B-11 Biscayne Bay/Card Sound Spiny Lobster Sanctuary.

Credits: FWC-FWRI

Use limitations:
FWC shall not be liable for improper or incorrect use of this data. These data are not legal documents and are not to be used as such. This is not a survey data set and should not be utilized as such. These data are not to be used for navigation.

Filter: None.

5.34. Spoil Dumping Area

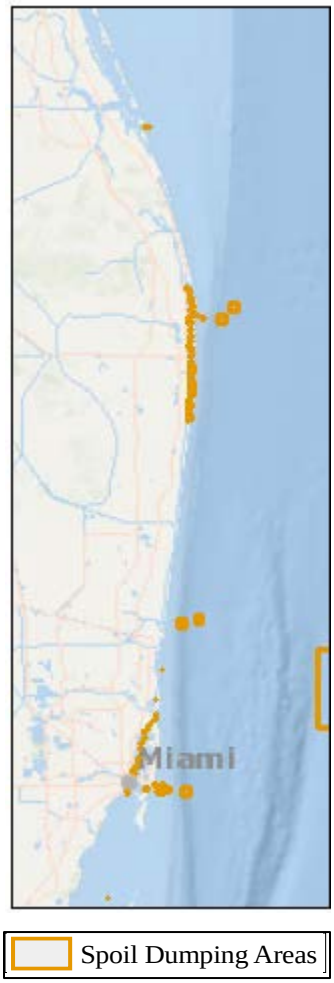
Spoil_dumping_areas

Description:
A sea area where dredged material or other potentially more harmful material, e.g. explosives, chemical waste, is deliberately deposited. (Derived from IHO Chart Specifications, M-4). NOAA ENC Direct to GIS Internet Mapping Service is designed to allow for the visualization, querying and downloading of NOAA's Electronic Navigational Chart's (NOAA ENC) data in common Geographic Information System (GIS) formats. Dumping Areas from Approach and Harbor Charts. NOAA's ENC Direct to GIS web portal provides comprehensive access to display, query, and download all available NOAA ENC data in a variety of GIS/CAD formats for non-navigational purposes using Internet mapping service technology.

Credits: NOAA ENC Direct

Use limitations:
NOAA ENC Direct to GIS data is not intended for navigational purposes. This data is provided for use in GIS software packages for coastal planning and research.

Filter: None.



5.35. State Park Management Zones

Stpark_Mzones_aug13_SEFCRI

Description:
State Park Management Zones were created to sub-divide park lands into areas that best facilitate the management of the park lands for conservation and recreation.

State Park Management Zones are divisions of land within Florida State Parks based on factors such as Natural Community types, physical boundaries, land use and geography. This is an update to the FGDL layer STPARK_MZONES_DEC12.shp

Credits:
Florida DEP Division of Recreation and Parks

Use limitations:
The data set is NOT a survey document and should not be utilized as such. Florida Department of Environmental Protection (FDEP) Projection Information and Data Disclaimer FDEP GIS data is provided as a public service by OTIS/GIS Section. FDEP OTIS/GIS Section makes every effort to provide accurate and complete data. Metadata is provided for all datasets and no data should be used without first reading and understanding the limitations of the data. The Florida Department of Environmental Protection (FDEP) provides NO WARRANTY as to the accuracy of this data or any corresponding attributes or metadata. Data is provided in an "as is" condition, without warranty of any kind, either expressed or implied, including any assurance that the data is fit for a particular purpose. FDEP shall have no liability, in any case, to the use of provided data (including redistribution and reproduction). Full liability, responsibility, and consequence relating to the use of provided data rest with the user.

Filter: None.

5.36. State Water Boundary

st_waters_fl

Description:
This GIS data set represents the approximate outer extent of Florida waters for general mapping purposes and analyses, based on the Submerged Lands Act. As interpreted from the U.S. code, the Submerged Lands Act gives states authority to control the use of resources from state submerged lands, which include lands under estuarine waters out to the Federal-State boundary delineated by the Minerals Management Service.

Credits:
FWRI extracted the Florida portion of the submerged lands act line from data downloaded from NOAA. FWRI used NOAA's metadata as a base for this document and included FWRI standard information and information about processing done by FWRI.

Use limitations:
Not intended for legal use. FWC shall not be liable for improper or incorrect use of this data. These data are not legal documents and are not to be used as such. This is not a survey data set and should not be utilized as such. These data are not to be used for navigation. It is recommended that this boundary be qualified as approximate if used in a cartographic product.

Filter: None.

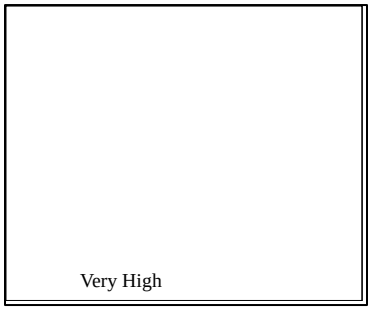
6. PEOPLE SHAPEFILE METADATA

6.1. Anchored Boat Density 2008-2009

Anchored Boat Density 2008-2009

Description: This layer shows the density of anchored vessels in 2008 and 2009 which is the number of boats within a 500 m radius of each logged location. This project conducted aerial (helicopter) surveys to map vessel locations and characteristics to determine use intensity, anchoring pressure, and predominant activities over the Southeast Florida region, and to associate use level with specific areas of the coral reef tract and other submerged habitat types. Vessel information (location, type, length, and activity) and passenger information (activity) were collected for 3579 vessels that were observed off of Miami-Dade and Broward counties during periods of low, medium, and high use between 4/29/2008 and 11/19/2009 (CRUPS project) and between 7/4/2012 and 7/30/2014 (Mooring Buoy Project, or MBP). Three data collection (helicopter) flights occurred during each use level, and for each project. For each use level (and project) one flight occurred in the spring, one in the summer, and one in the fall. The design was selected to determine if a seasonal component in use patterns exists. An additional (10th) flight was added for the Florida spiny lobster "mini-season" during both projects. The dataset was used in two studies. The first study had as its goal an initial assessment of vessel use patterns on the natural reefs of the southeast Florida region.

Credits: Data collected by the University of Florida. Density layer created by Amanda Costaregni at NSU Oceanographic Center.



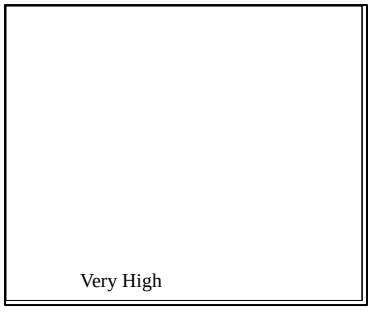
Use limitations: The data collected were sparse relative to total use. It must be understood that interpreting use pressure from a few select surveys may bias the results and many uses that happen throughout a year were not captured. Data were classified using the Natural Breaks and then modifying the class to more standard categories. For example Low was a density of 1 – 5, Medium was 5 – 10, High was 10 – 25, and Very High was 25 – 50.

Filter: Yes. Filtering returned the planning grid units with "at least" the selected density level. For example if one chose at least "Medium", then only areas of Medium, High, and Very High will display. The 2009 data were used for the north and the 2014 data for the south.

6.2. Anchored Boat Density 2012-2014

Anchored Boat Density 2012-2014

Description:
This layer shows the density of anchored vessels in 2012 and 2014 which is the number of boats within a 500 m radius of each logged location. This project conducted aerial (helicopter) surveys to map vessel locations and characteristics to determine use intensity, anchoring pressure, and predominant activities over the Southeast Florida region, and to associate use level with specific areas of the coral reef tract and other submerged habitat types. Vessel information (location, type, length, and activity) and passenger information (activity) were collected for 3579 vessels that were observed off of Miami-Dade and Broward counties during periods of low, medium, and high use between 4/29/2008 and 11/19/2009 (CRUPS project) and between 7/4/2012 and 7/30/2014 (Mooring Buoy Project, or MBP). Three data collection (helicopter) flights occurred during each use level, and for each project. For each use level (and project) one flight occurred in the spring, one in the summer, and one in the fall. The design was selected to determine if a seasonal component in use patterns exists. An additional (10th) flight was added for the Florida spiny lobster "mini-season" during both projects. The dataset was used in two studies. The first study had as its goal an initial assessment of vessel use patterns on the natural reefs of the southeast Florida region (Miami-Dade, Broward, Palm Beach, and Martin counties).



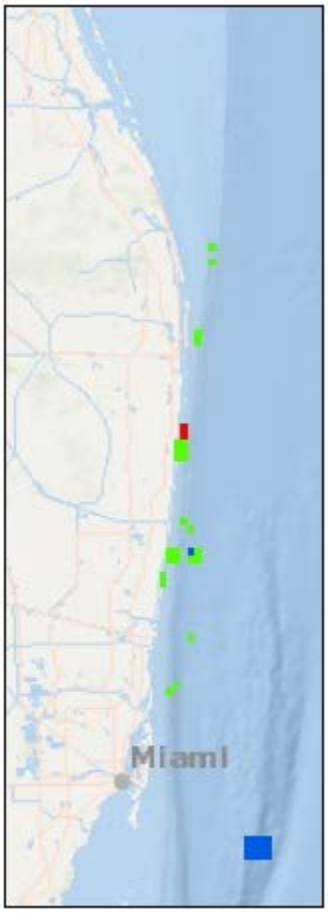
Credits: Data collected by the University of Florida. Density layer created by Amanda Costaregni at NSU Oceanographic Center.
Use limitations: The data collected were sparse relative to total use. It must be understood that interpreting use pressure from a few select surveys may bias the results and many uses that happen throughout a year were not captured. Data were classified using the Natural Breaks and then modifying the class to more standard categories. For example Low was a density of 1 – 5, Medium was 5 – 10, High was 10 – 25, and Very High was 25 – 50.

Filter: Yes. Filtering returned the planning grid units with "at least" the selected density level. For example if one chose at least "Medium", then only areas of Medium, High, and Very High will display. The 2009 data were used for the north filtering and the 2014 data for the south.

6.3. Areas of Use Conflicts for Divers (Shivlani, 2007)

User Conflict Divers

Description:
"Dive operations comprise an important industry providing the means by which visitors can access dive sites and their associated flora and fauna (Green and Donnelly, 2003; Orams, 1999; Davis and Tisdell, 1995). The visitor base has grown considerably in the few decades since the advent of SCUBA, and diving and snorkeling activities have emerged as an important (and integrated) component of the coastal tourism economy." (Shivlani, 2007)
The dive operator study used a field-based approach to survey dive operators, whose population was determined using a variety of sources. A survey instrument was developed and modeled after the commercial fishing study survey instrument3, and initial contact with each operation via telephone to describe the study and a field session to complete the surveys was conducted. Generally, dive operations did not identify many use conflicts. The only areas that were identified tended to nearshore dive sites that operators described as having too many users. Otherwise, most dive operations believed that their activities were not affected by other users, with the exception of recreational boaters. (Shivlani, 2007).



Credits:
Shivlani, M., 2007

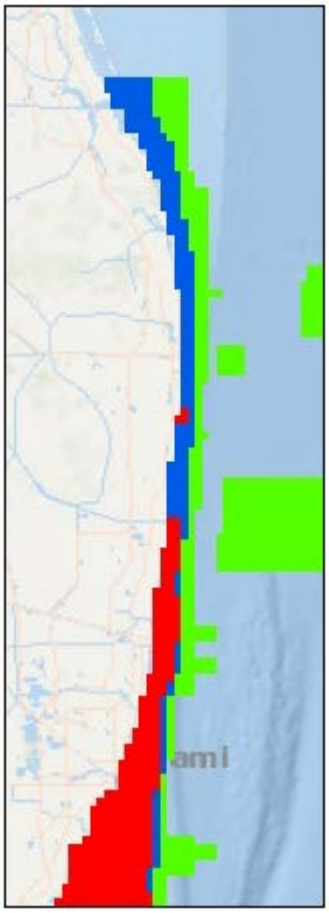
Use limitations: The results are dependent on those surveyed and their responses. Please note the date of the survey. The survey resolution was 1 square km.

Filter: None.

3

6.4. Areas of Use Conflicts for Researchers and Managers (Shivlani, 2007)

User Conflict Researchers



Description:
The researcher and manager study used a field-based approach to survey researchers and managers. The study relied mainly on a directed sample that was obtained from a variety of sources. The study effort consisted of the development of a survey instrument that was modeled after the commercial fishing study survey instrument but also included several questions on research and management issues. Initial contact with each individual was via email or telephone to describe the study, and a face-to-face interview was performed to the conduct surveys. The researcher and manager study led to the completion of 55 surveys. The researcher and manager study used a field-based approach to survey researchers and managers. The study relied mainly on a directed (as opposed to a random) sample that was obtained from a variety of sources. The study effort consisted of the development of a survey instrument that was modeled after the commercial fishing study survey instrument but also included several questions on research and management issues. Initial contact with each individual was via email or telephone to describe the study, and a face-to-face interview was performed to the conduct surveys. It should be noted that when the researcher or manager was either not located in the SEFCRI region or was otherwise unavailable for a direct interview a phone interview was conducted.

7 - 14

Credits:
Shivlani, M., 2007

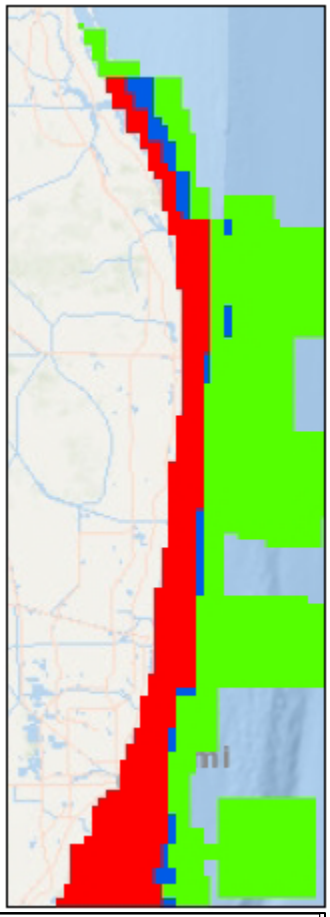
Use limitations: The results are dependent on those surveyed and their responses. Please note the date of the survey. The survey resolution was 1 square km.

Filter: None.

6.5. Areas Used by Researchers and Managers

present_res

Description:
The researcher and manager study used a field-based approach to survey researchers and managers. The study relied mainly on a directed sample that was obtained from a variety of sources. The study effort consisted of the development of a survey instrument that was modeled after the commercial fishing study survey instrument but also included several questions on research and management issues. Initial contact with each individual was via email or telephone to describe the study, and a face-to-face interview was performed to the conduct surveys. The researcher and manager study led to the completion of 55 surveys. The researcher and manager study used a field-based approach to survey researchers and managers. The study relied mainly on a directed (as opposed to a random) sample that was obtained from a variety of sources. The study effort consisted of the development of a survey instrument that was modeled after the commercial fishing study survey instrument but also included several questions on research and management issues. Initial contact with each individual was via email or telephone to describe the study, and a face-to-face interview was performed to the conduct surveys. It should be noted that when the researcher or manager was either not located in the SEFCRI region or was otherwise unavailable for a direct interview a phone interview was conducted.



7 - 25

Credits:
Shivlani, M., 2007

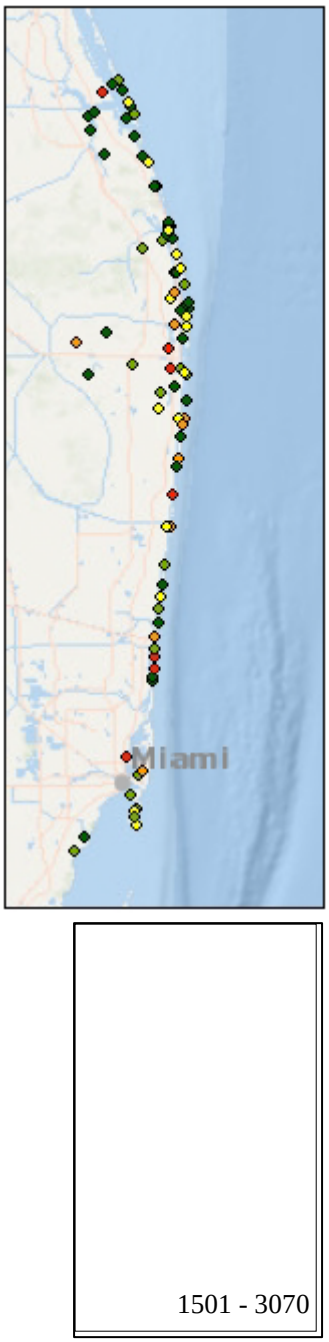
Use limitations: The results are dependent on those surveyed and their responses. Please note the date of the survey. The survey resolution was 1 square km.

Filter: None.

6.6. Beach Debris

Beach Debris (International Coastal Clean-ups)

Description:
This data was gathered from The Ocean Conservancy International Coastal Clean-up efforts in 2014. It shows the locations of the clean-up efforts in southeast Florida and the weight of trash in pounds collected at each location. Most trash was collected on the beaches however a small amount was also collected from diving and boating efforts. All of these efforts were combined to get a total weight for the clean-up location.



Credits:
The Ocean Conservancy

Use limitations: None listed. Data were displayed into several bins based on the "Natural Breaks" distribution of the data and rounded to the nearest 50 pounds.

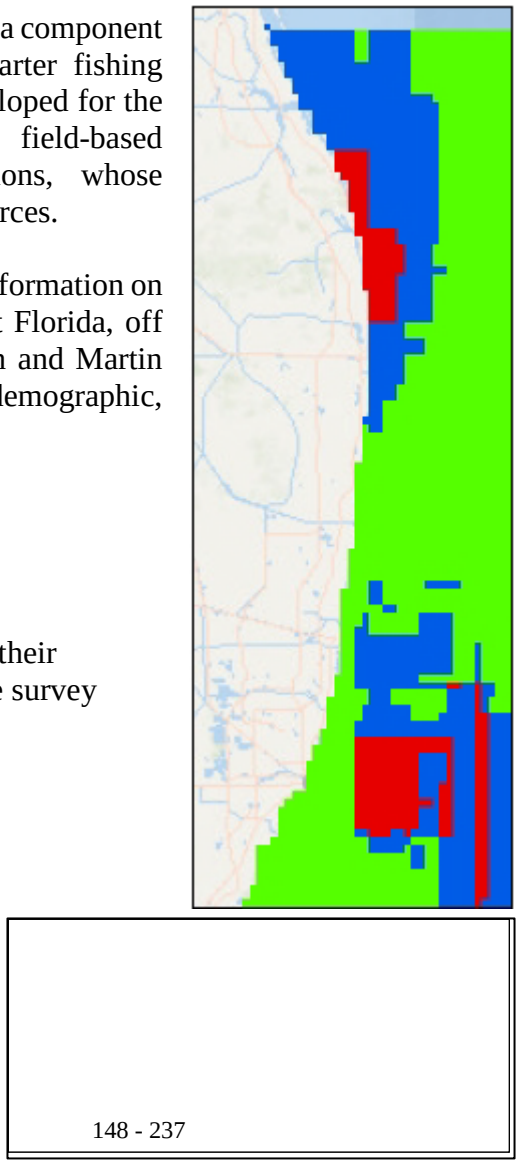
Filter: None.

6.7. Charter Fishing Areas (Shivlani, 2007)

all_charter_Dissolve

Description:
The SEFCRI charter fishing operations study was a component of the FDOU Combined Project 10. The charter fishing operations study followed the methodology developed for the commercial fishing study, in that it used a field-based approach to survey charter fishing operations, whose population was determined using a variety of sources.

A total of 59 charter fishing operators provided information on their fishing activities off the coast of Southeast Florida, off the coast of Miami-Dade, Broward, Palm Beach and Martin counties. The fishers also provided socio-demographic, economic, and perceptions data.



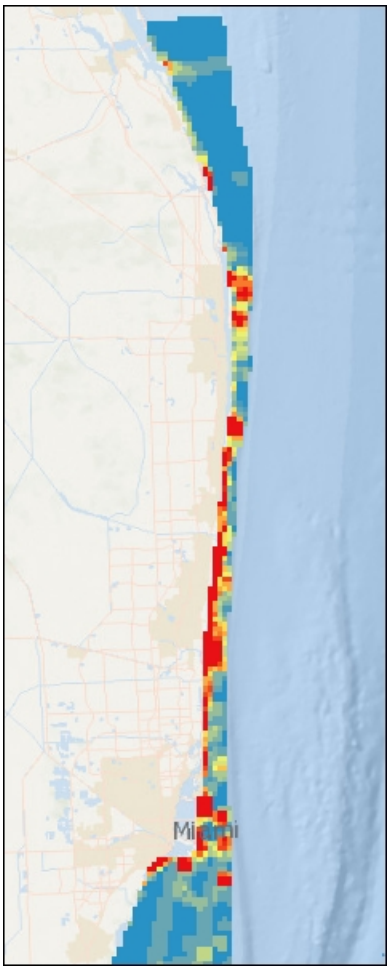
Credits:
NOAA, M. Shivlani

Use limitations:
The results are dependent on those surveyed and their responses. Please note the date of the survey. The survey resolution was 1 square km

Filter: None.

6.8. Degree of Anthropogenic Stress

Anthropogenic Stress



Description:
This data represents varying levels of anthropogenic stress relevant to corals. Anthropogenic stressors were identified and compiled by FWRI staff. These include outfalls (FDEP), popular dive sites (created by FWRI, derived fromhttp://www.divespots.com/scuba-diving-spots/florida/florida-keys/), dredge disposal sites (FWRI - MRGIS), ship lanes (FWRI - MRGIS), vessel corridors (FWRI - MRGIS), marinas (FWRI - MRGIS), anchorages (FWRI - MRGIS), and reef injuries (FWRI - MRGIS).

A 1 kilometer grid was created using XTools Pro and the resulting grid was clipped to the study area boundary. One kilometer buffers were created for all stress layers, and a "Stress_Ind" field was added. The "Stress_Ind" field was calculated as "1" for all stressors. For the reef injuries layer, groundings were isolated and classified as a "1," whereas the remaining injuries were classified as "0.5" to represent the less severe nature of the remaining injuries (i.e. anchorings).

All stress layers were merged and the spatial join tool (using a sum merge rule) was used to append the total number of intersections of stressors (found in the "Stress_Ind" field) with the grid.

The resulting polygonal grid was converted to a raster and a 1km cell output was ensured.

Credits: FWC-FWRI

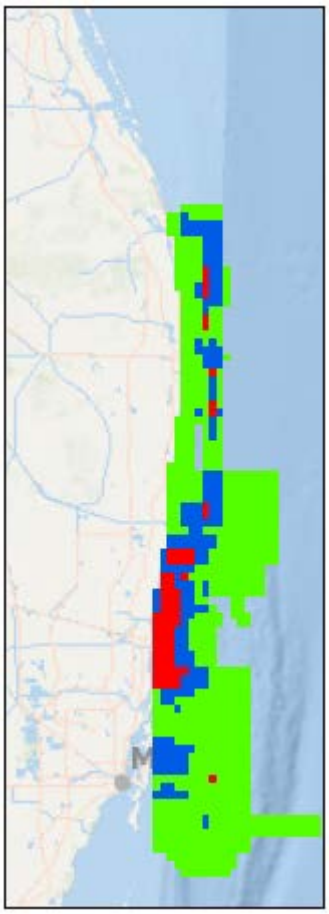
Use limitations:
Not for distribution without prior consent. FWC-FWRI must be credited. This is not a survey data set and should not be utilized as such. These data are not to be used for navigation.

Filter: None.

6.9. Dive Use Areas (Shivlani, 2007)

Dive Use Areas

Description:
Dive operations comprise an important industry providing the means by which visitors can access dive sites and their associated flora and fauna (Green and Donnelly, 2003; Orams, 1999; Davis and Tisdell, 1995). The visitor base has grown considerably in the few decades since the advent of SCUBA, and diving and snorkeling activities have emerged as an important (and integrated) component of the coastal tourism economy.



The dive operator study used a field-based approach to survey dive operators, whose population was determined using a variety of sources. A survey instrument was developed and modeled after the commercial fishing study survey instrument, and initial contact with each operation via telephone to describe the study and a field session to complete the surveys was conducted.

Credits:
Shivlani, M., 2007

Use limitations: The results are dependent on those surveyed and their responses. Please note the date of the survey. The survey resolution was 1 square km

Filter: None.

7 - 21

6.10. Land Use

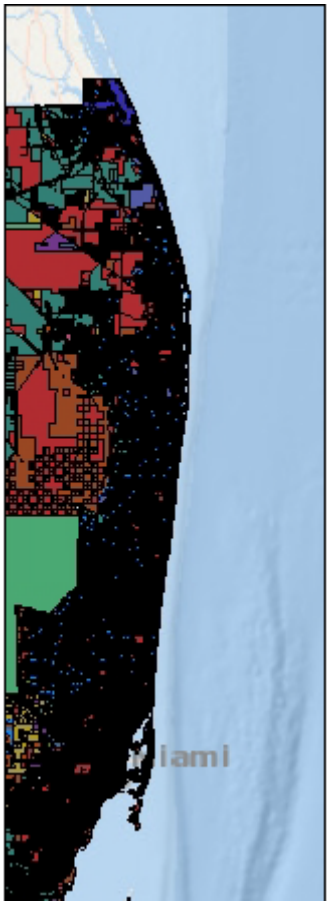
Land Use 2012

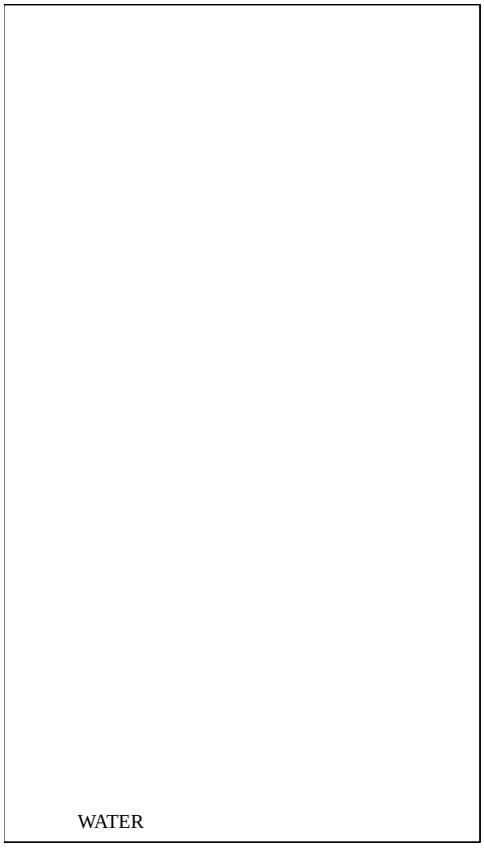
Description:
This dataset contains generalized land use derived from parcel specific land use for Florida Department of Transportation (FDOT) District 4 and District 6. The original 99 land use classes from the parcel data have been collapsed into 15 generalized classes. This data has been updated for 2012

Credits:
Florida Department of Revenue

Use limitations: None listed.

Filter: None

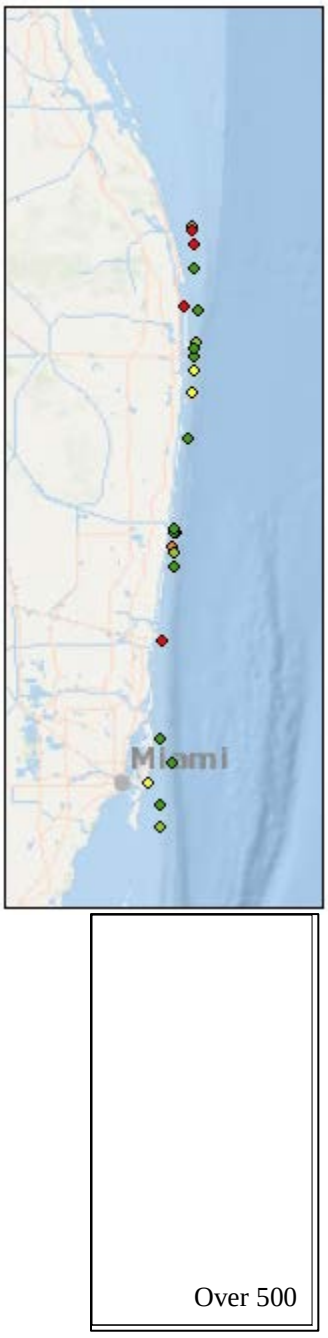




6.11. Marine Debris

Marine Debris

Description:
These data were gathered from the 2013 and 2014 "Dive Against Debris" reef clean-ups at various reef sites around southeast Florida. It indicates the number of pieces of debris collected at each location. In response to the onslaught of marine debris Project AWARE launched Dive Against Debris. Created by divers for divers, this global, underwater survey of rubbish is designed to increase debris removal efforts, prevent harm to marine life and connect your underwater actions to policy changes and prevention.



Credits:
Project AWARE

Use limitations: None listed. The data are pieces of debris and do not indicate the size or weight. Data were displayed into several bins based on the "Natural Breaks" distribution of the data and rounded to the nearest 50 pieces.

Filter: None.

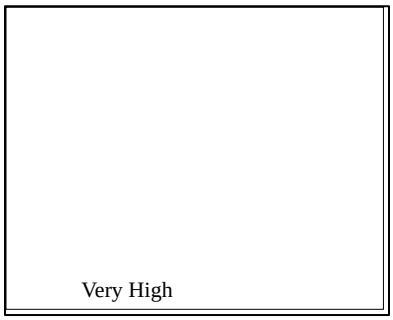
6.12. Moored Boat Density 2008-2009

Moored Boat Density 2008-2009

Description:

This layer shows the density of moored vessels in 2008 and 2009 which is the number of boats within a 500 m radius of each logged location. This project conducted aerial (helicopter) surveys to map vessel locations and characteristics to determine use intensity, anchoring pressure, and predominant activities over the Southeast Florida region, and to associate use level with specific areas of the coral reef tract and other submerged habitat types. Vessel information (location, type, length, and activity) and passenger information (activity) were collected for 3579 vessels that were observed off of Miami-Dade and Broward counties during periods of low, medium, and high use between 4/29/2008 and 11/19/2009 (CRUPS project) and between 7/4/2012 and 7/30/2014 (Mooring Buoy Project, or MBP). Three data collection (helicopter) flights occurred during each use level, and for each project. For each use level (and project) one flight occurred in the spring, one in the summer, and one in the fall. The design was selected to determine if a seasonal component in use patterns exists. An additional (10th) flight was added for the Florida spiny lobster "mini-season" during both projects. The dataset was used in two studies. The first study had as its goal an initial assessment of vessel use patterns on the natural reefs of the southeast Florida region.

Credits: Data collected by the University of Florida. Density layer created by Amanda Costaregni at NSU Oceanographic Center.



Use limitations: The data collected were sparse relative to total use. It must be understood that interpreting use pressure from a few select surveys may bias the results and many uses that happen throughout a year were not captured. Data were classified using the Natural Breaks and then modifying the class to more standard categories. For example Low was a density of 1 – 5, Medium was 5 – 10, High was 10 – 25, and Very High was 25 – 50.

Filter: Yes. Filtering returned the planning grid units with "at least" the density level selected. For example if one chose at least "Medium", then only areas of Medium, High, and Very High will display. The 2009 data were used for the north and the 2014 data for the south.

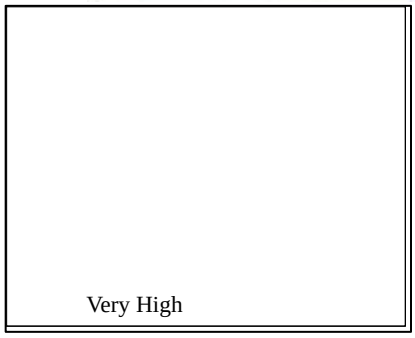
6.13. Moored Boat Density 2012-2014

Moored Boat Density 2012-2014

Description:

This layer shows the density of moored vessels in 2012 and 2014 which is the number of boats within a 500 m radius of each logged location. This project conducted aerial (helicopter) surveys to map vessel locations and characteristics to determine use intensity, anchoring pressure, and predominant activities over the Southeast Florida region, and to associate use level with specific areas of the coral reef tract and other submerged habitat types. Vessel information (location, type, length, and activity) and passenger information (activity) were collected for 3579 vessels that were observed off of Miami-Dade and Broward counties during periods of low, medium, and high use between 4/29/2008 and 11/19/2009 (CRUPS project) and between 7/4/2012 and 7/30/2014 (Mooring Buoy Project, or MBP). Three data collection (helicopter) flights occurred during each use level, and for each project. For each use level (and project) one flight occurred in the spring, one in the summer, and one in the fall. The design was selected to determine if a seasonal component in use patterns exists. An additional (10th) flight was added for the Florida spiny lobster "mini-season" during both projects. The dataset was used in two studies. The first study had as its goal an initial assessment of vessel use patterns on the natural reefs of the southeast Florida region (Miami-Dade, Broward, Palm Beach, and Martin counties).

Credits: Data collected by the University of Florida. Density layer created by Amanda Costaregni at NSU Oceanographic Center.



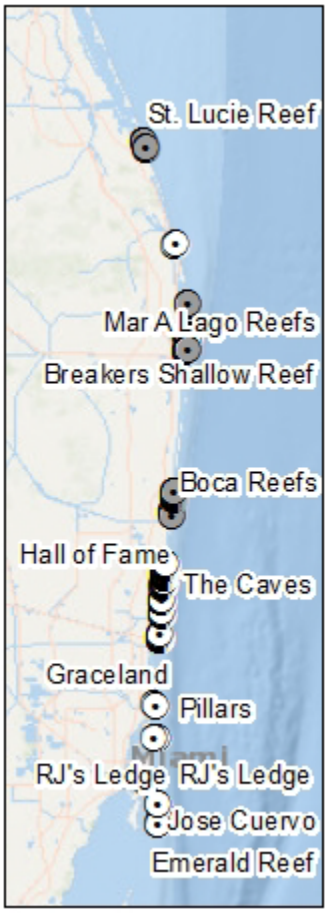
Use limitations: The data collected were sparse relative to total use. It must be understood that interpreting use pressure from a few select surveys may bias the results and many uses that happen throughout a year were not captured. Data were classified using the Natural Breaks and then modifying the class to more standard categories. For example Low was a density of 1 – 5, Medium was 5 – 10, High was 10 – 25, and Very High was 25 – 50.

Filter: Yes, filtering showed at least a certain density level. For example if one chose at least "Medium", then only areas of Medium, High, and Very High will display. The 2009 data were used for the north filtering and the 2014 data for the south.

6.14. Mooring Buoys

Mooring_buoys_updated_Oct15

Description:
Locations of mooring buoys in the SEFCRI region provided by various sources. To help protect our coral reefs, Florida law prohibits dropping an anchor onto living corals. As further protection, a mooring buoy system was installed so that boaters can moor on reefs without using an anchor and avoid violating the law or damaging the reef.



Miami-Dade County mooring buoys are maintained by the Restoration and Enhancement Section in the Regulatory and Economic Resources Department. Funding was provided by the County and the FDEP Coral Reef Conservation Program with a grant from the NOAA Coral Reef Conservation Program and the FWC Florida Boater Improvement Program. Broward County mooring buoys are maintained by the Natural Resources Planning and Management Division. Funding was provided by the County and the Florida Department of Environmental Protection Coral Reef Conservation Program with a grant from the National Oceanic and Atmospheric Administration Coral Reef Conservation Program. The Palm Beach County mooring buoy program is a partnership between Palm Beach County Department of Environmental Resources Management and the FWC. Funding was provided by the FDEP Coral Reef Conservation Program with a grant from the NOAA Coral Reef Conservation Program. Mooring buoys in Palm Beach County at Mar A Lago and Boca Raton Patch reefs are rotated every year to spread the pressure out of divers and fishermen over different parts of the reefs. The St. Lucie Inlet Park Preserve Mooring Buoys are maintained by the Florida Park Service. Funding was provided by the Florida Department of Environmental Protection Coral Reef Conservation Program with a grant from the National Oceanic and Atmospheric Administration Coral Reef Conservation Program.

Credits: Amanda Costaregni compiled the data from various sources into this one layer.

Use limitations: These data were compiled in 2015. They may not reflect the latest buoy condition if the "not in use" become active or vice versa.

Filter: Yes. Filtering would include or exclude planning units that overlap with mooring buoy sites.

6.15. OFR Survey Results

6.15.1. All Activities

Description: The Our Florida Reefs survey collected data on how and where southeast Florida's coral reefs are being visited by residents and guests. All survey participants' data have been combined to create maps that show a summary of where people are visiting the reefs, what activities they are participating in, and how often those areas are visited. The survey used a non-probability based "Opt-In" sample methodology that engaged ocean and coastal recreation stakeholders by deploying targeted outreach strategies to solicit participation in an opt-in method of data collection. Respondents were asked to provide information and map their coastal and ocean recreation activities from the last 12 months. Collecting data using an internet "opt-in" mode provides many advantages. It gathers data from populations that are not well defined and in which a robust probability based sample cannot be developed or feasibly collected. It provides a participatory approach and engages and builds stakeholder investment. It also provides the ability to collect data and obtain larger sample sizes from specific user groups (e.g. SCUBA divers, kayakers, etc.) that are difficult to adequately capture in general population surveys. Lastly, it increases the likelihood that stakeholders will trust the survey results and therefore accept their use in policy-making processes. Maps depicting spatial patterns of use (extent and intensity of use) for specific coastal recreational activities were created. These maps are aggregated into activity groupings requested by the Community Working Group members to help facilitate their use in planning and policy contexts. The final activity groupings are boating, recreational fishing, SCUBA diving, spearfishing, extractive diving, and water sports. An overlap layer has also been created to show locations where both fishers and divers frequent and the estimated intensity of this overlap.

Credits: NSU, Amanda Costaregni.

Use limitations: The data cannot be extrapolated to the general population, however it provides spatial data on many activities, as well as activity participation rates, and average expenditure profiles. These data were compiled in 2015. The results are dependent on those surveyed and their responses. Please note the date of the survey.

Filter: Yes. Use intensity was calculated for every planning unit using a Minimum/Maximum slider by 10 activity days to include or exclude planning units with the specified activity intervals.

6.15.2. Boating Activities

Description: The Our Florida Reefs survey collected data on how and where southeast Florida's coral reefs are being visited by residents and guests. All survey participants' data have been combined to create maps that show a summary of where people are visiting the reefs, what activities they are participating in, and how often those areas are visited. The survey used a non-probability based "Opt-In" sample methodology that engaged ocean and coastal recreation stakeholders by deploying targeted outreach strategies to solicit participation in an opt-in method of data collection. Respondents were asked to provide information and map their coastal and ocean recreation activities from the last 12 months. Collecting data using an internet "opt-in" mode provides many advantages. It gathers data from populations that are not well defined and in which a robust probability based sample cannot be developed or feasibly collected. It provides a participatory approach and engages and builds stakeholder investment. It also provides the ability to collect data and obtain larger sample sizes from specific user groups (e.g. SCUBA divers, kayakers, etc.) that are difficult to adequately capture in general population surveys. Lastly, it increases the likelihood that stakeholders will trust the survey results and therefore accept their use in policy-making processes. Maps depicting spatial patterns of use (extent and intensity of use) for specific coastal recreational activities were created. These maps are aggregated into activity groupings requested by the Community Working Group members to help facilitate their use in planning and policy contexts. The final activity groupings are boating, recreational fishing, SCUBA diving, spearfishing, extractive diving, and water sports. An overlap layer has also been created to show locations where both fishers and divers frequent and the estimated intensity of this overlap.

Credits: NSU, Amanda Costaregni.

Use limitations: The data cannot be extrapolated to the general population, however it provides spatial data on many activities, as well as activity participation rates, and average expenditure profiles. These data were compiled in 2015. The results are dependent on those surveyed and their responses. Please note the date of the survey.

Filter: Yes. Use intensity was calculated for every planning unit using a Minimum/Maximum slider by 10 activity days to include or exclude planning units with the specified activity intervals.

6.15.3. Extractive Diving (SCUBA and free) Activities

Description: The Our Florida Reefs survey collected data on how and where southeast Florida's coral reefs are being visited by residents and guests. All survey participants' data have been combined to create maps that show a summary of where people are visiting the reefs, what activities they are participating in, and how often those areas are visited. The survey used a non-probability based "Opt-In" sample methodology that engaged ocean and coastal recreation stakeholders by deploying targeted outreach strategies to solicit participation in an opt-in method of data collection. Respondents were asked to provide information and map their coastal and ocean recreation activities from the last 12 months. Collecting data using an internet "opt-in" mode provides many advantages. It gathers data from populations that are not well defined and in which a robust probability based sample cannot be developed or feasibly collected. It provides a participatory approach and engages and builds stakeholder investment. It also provides the ability to collect data and obtain larger sample sizes from specific user groups (e.g. SCUBA divers, kayakers, etc.) that are difficult to adequately capture in general population surveys. Lastly, it increases the likelihood that stakeholders will trust the survey results and therefore accept their use in policy-making processes. Maps depicting spatial patterns of use (extent and intensity of use) for specific coastal recreational activities were created. These maps are aggregated into activity groupings requested by the Community Working Group members to help facilitate their use in planning and policy contexts. The final activity groupings are boating, recreational fishing, SCUBA diving, spearfishing, extractive diving, and water sports. An overlap layer has also been created to show locations where both fishers and divers frequent and the estimated intensity of this overlap.

Credits: NSU, Amanda Costaregni.

Use limitations: The data cannot be extrapolated to the general population, however it provides spatial data on many activities, as well as activity participation rates, and average expenditure profiles. These data were compiled in 2015. The results are dependent on those surveyed and their responses. Please note the date of the survey.

Filter: Yes. Use intensity was calculated for every planning unit using a Minimum/Maximum slider by 10 activity days to include or exclude planning units with the specified activity intervals

6.15.4. Recreational Fishing Activities

Description: The Our Florida Reefs survey collected data on how and where southeast Florida's coral reefs are being visited by residents and guests. All survey participants' data have been combined to create maps that show a summary of where people are visiting the reefs, what activities they are participating in, and how often those areas are visited. The survey used a non-probability based "Opt-In" sample methodology that engaged ocean and coastal recreation stakeholders by deploying targeted outreach strategies to solicit participation in an opt-in method of data collection. Respondents were asked to provide information and map their coastal and ocean recreation activities from the last 12 months. Collecting data using an internet "opt-in" mode provides many advantages. It gathers data from populations that are not well defined and in which a robust probability based sample cannot be developed or feasibly collected. It provides a participatory approach and engages and builds stakeholder investment. It also provides the ability to collect data and obtain larger sample sizes from specific user groups (e.g. SCUBA divers, kayakers, etc.) that are difficult to adequately capture in general population surveys. Lastly, it increases the likelihood that stakeholders will trust the survey results and therefore accept their use in policy-making processes. Maps depicting spatial patterns of use (extent and intensity of use) for specific coastal recreational activities were created. These maps are aggregated into activity groupings requested by the Community Working Group members to help facilitate their use in planning and policy contexts. The final activity groupings are boating, recreational fishing, SCUBA diving, spearfishing, extractive diving, and water sports. An overlap layer has also been created to show locations where both fishers and divers frequent and the estimated intensity of this overlap.

Credits: NSU, Amanda Costaregni.

Use limitations: The data cannot be extrapolated to the general population, however it provides spatial data on many activities, as well as activity participation rates, and average expenditure profiles. These data were compiled in 2015. The results are dependent on those surveyed and their responses. Please note the date of the survey.

Filter: Yes. Use intensity was calculated for every planning unit using a Minimum/Maximum slider by 10 activity days to include or exclude planning units with the specified activity intervals.

6.15.5. Recreational Fishing and Diving Activity Overlap

Description: The Our Florida Reefs survey collected data on how and where southeast Florida's coral reefs are being visited by residents and guests. All survey participants' data have been combined to create maps that show a summary of where people are visiting the reefs, what activities they are participating in, and how often those areas are visited. The survey used a non-probability based "Opt-In" sample methodology that engaged ocean and coastal recreation stakeholders by deploying targeted outreach strategies to solicit participation in an opt-in method of data collection. Respondents were asked to provide information and map their coastal and ocean recreation activities from the last 12 months. Collecting data using an internet "opt-in" mode provides many advantages. It gathers data from populations that are not well defined and in which a robust probability based sample cannot be developed or feasibly collected. It provides a participatory approach and engages and builds stakeholder investment. It also provides the ability to collect data and obtain larger sample sizes from specific user groups (e.g. SCUBA divers, kayakers, etc.) that are difficult to adequately capture in general population surveys. Lastly, it increases the likelihood that stakeholders will trust the survey results and therefore accept their use in policy-making processes. Maps depicting spatial patterns of use (extent and intensity of use) for specific coastal recreational activities were created. These maps are aggregated into activity groupings requested by the Community Working Group members to help facilitate their use in planning and policy contexts. The final activity groupings are boating, recreational fishing, SCUBA diving, spearfishing, extractive diving, and water sports. An overlap layer has also been created to show locations where both fishers and divers frequent and the estimated intensity of this overlap.

Credits: NSU, Amanda Costaregni.

Use limitations: The data cannot be extrapolated to the general population, however it provides spatial data on many activities, as well as activity participation rates, and average expenditure profiles. These data were compiled in 2015. The results are dependent on those surveyed and their responses. Please note the date of the survey.

Filter: Yes. Use intensity was calculated for every planning unit using a Minimum/ Maximum slider by 10 activity days to include or exclude planning units with the specified activity intervals.

6.15.6. SCUBA Diving Activities

Description: The Our Florida Reefs survey collected data on how and where southeast Florida's coral reefs are being visited by residents and guests. All survey participants' data have been combined to create maps that show a summary of where people are visiting the reefs, what activities they are participating in, and how often those areas are visited. The survey used a non-probability based "Opt-In" sample methodology that engaged ocean and coastal recreation stakeholders by deploying targeted outreach strategies to solicit participation in an opt-in method of data collection. Respondents were asked to provide information and map their coastal and ocean recreation activities from the last 12 months. Collecting data using an internet "opt-in" mode provides many advantages. It gathers data from populations that are not well defined and in which a robust probability based sample cannot be developed or feasibly collected. It provides a participatory approach and engages and builds stakeholder investment. It also provides the ability to collect data and obtain larger sample sizes from specific user groups (e.g. SCUBA divers, kayakers, etc.) that are difficult to adequately capture in general population surveys. Lastly, it increases the likelihood that stakeholders will trust the survey results and therefore accept their use in policy-making processes. Maps depicting spatial patterns of use (extent and intensity of use) for specific coastal recreational activities were created. These maps are aggregated into activity groupings requested by the Community Working Group members to help facilitate their use in planning and policy contexts. The final activity groupings are boating, recreational fishing, SCUBA diving, spearfishing, extractive diving, and water sports. An overlap layer has also been created to show locations where both fishers and divers frequent and the estimated intensity of this overlap.

Credits: NSU, Amanda Costaregni.

Use limitations: The data cannot be extrapolated to the general population, however it provides spatial data on many activities, as well as activity participation rates, and average expenditure profiles. These data were compiled in 2015. The results are dependent on those surveyed and their responses. Please note the date of the survey.

Filter: Yes. Use intensity was calculated for every planning unit using a Minimum/Maximum slider by 10 activity days to include or exclude planning units with the specified activity intervals.

6.16. Popular Dive Sites

Popular_dive_sites_SEFCRI

Description:
This layer shows locations of popular dive sites in the SEFCRI region including natural and artificial reef sites. This list is not comprehensive. These sites were selected based on their popularity with dive shops. They were created to give some spatial reference to sites offshore.

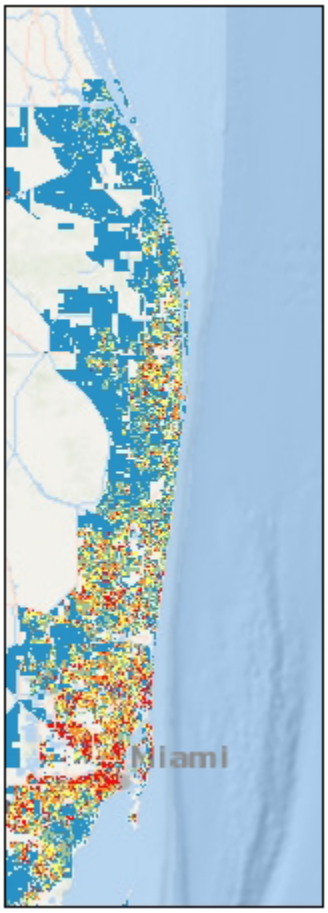
Credits:
NSU, Amanda Costaregni

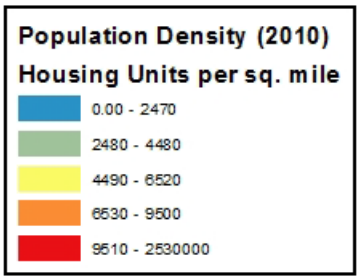
Use limitations: NSU shall not be liable for improper or incorrect use of this data. These data are not legal documents and are not to be used as such. This is not a survey data set and should not be utilized as such. This data set is intended for cartographic purposes only. It is not intended as a legal location. These data are not to be used for navigation.

Filter: None.

6.17. Population Density (2010)

population_block_2010





Description: Depicts total population, housing units, and density of population and housing units per square mile by U.S. Census Block for the year 2010. Information on population and housing units was downloaded from the American Factfinder website of the U.S. Census Bureau. This information was joined to tabblock TIGER/Line files (see below) using unique block geoid codes. Shapefiles depicting water features (areawater.shp) for each county were erased from the tabblock shapefiles, and the area in square miles was calculated for each Census block. To calculate population and housing unit density, total population and housing units were divided by the area (sqmi) values.

Census Blocks are statistical areas bounded on all sides by visible features, such as streets, roads, streams, and railroad tracks, and/or by nonvisible boundaries such as city, town, township, and county limits, and short line-of-sight extensions of streets and roads. Census blocks are relatively small in area; for example, a block in a city bounded by streets. However, census blocks in remote areas are often large and irregular and may even be many square miles in area. A common misunderstanding is that data users think census blocks are used geographically to build all other census geographic areas, rather all other census geographic areas are updated and then used as the primary constraints, along with roads and water features, to delineate the tabulation blocks. As a result, all Census 2000 blocks nest within every other Census 2000 geographic area, so that Census Bureau statistical data can be tabulated at the block level and aggregated up to the appropriate geographic areas.

Credits: U.S. Census Bureau

Use limitations: The TIGER/Line Shapefile products are not copyrighted however TIGER/Line and Census TIGER are registered trademarks of the U.S. Census Bureau. These products are free to use in a product or publication, however acknowledgement must be given to the U.S. Census Bureau as the source. The boundary information in the TIGER/Line Shapefiles are for statistical data collection and tabulation purposes only; their depiction and designation for statistical purposes does not constitute a determination of jurisdictional authority or rights of ownership or entitlement and they are not legal land descriptions.

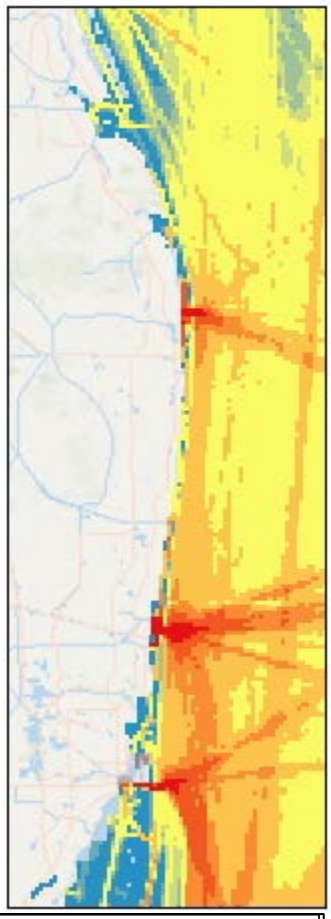
Filter: None

6.18. Vessel Traffic Patterns – AIS

AIS

Description:

To support coastal and ocean planning and other activities pursuant to the Energy Policy Act, Coastal Zone Management Act, Magnuson-Stevens Fishery Conservation and Management Act, National Environmental Policy Act, Rivers and Harbors Act and the Submerged Lands Act." These data were generated to provide insight into traffic patterns on a macro scale so they could be analyzed across the coastal waters of the Continental United States. For this dataset a transit is counted for every unique vessel intersecting a 1 kilometer square grid cell each day. This data represents the total number of vessel transits from October 2009 - October 2010. There were some grid cells which were unable to be processed, but we do not believe this interferes with the integrity of this dataset. Please note multiple connection errors occurred during the time frame of this study. In most cases data gaps were filled by making subsequent request to the coastguard or other groups receiving the same data feed. However, due to resource constraints uninterrupted coverage was not obtained. Overall data outages were minimal on the order less than a day per month and because random and affect all areas uniformly do not has a significant effect on the integrity of the data. Also as stated on the USCG NAIS website AIS data is not representative of all vessel traffic and USCG NAIS receivers do not fully cover the entire extent of this study area. Please take time to understand both of these limitations.



Credits:

NOAA Center for Coastal Monitoring and Assessment

Use limitations:

These data are intended for coastal and ocean use planning. Not for navigation.

Filter: None.

7. WATER SHAPEFILE METADATA

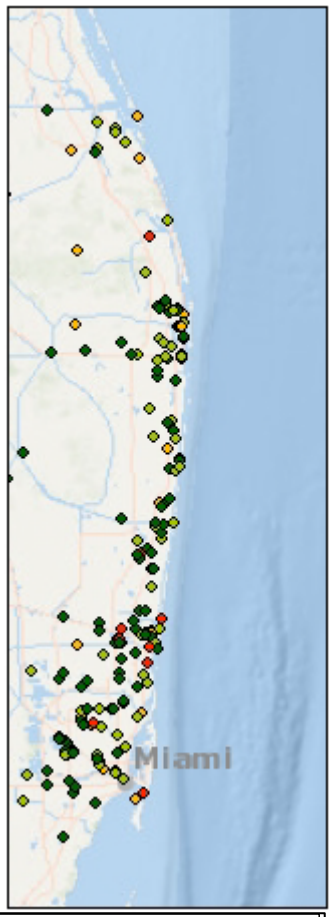
7.1. EPA Pollutant Facilities

EPA Pollutant Facilities

Description:
ECHO data focuses on compliance- and enforcement-related information for regulated facilities, including:

- •Permit data
- •Inspection/compliance evaluation dates and findings
- •Violations of environmental regulations
- •Enforcement actions
- •Penalties assessed

Quarters of Non-Compliance (3 yrs) [fac_qtrs_in_nc] is the count of the number of quarters, out of the last twelve quarters, in which the permit or site is considered either with violations, in non-compliance status, or in Significant Non-compliance or High Priority Violation status. A quarter is any of the following 3-month calendar periods: January-March, April-June, July-September, or October-December.



Credits:
United States EPA

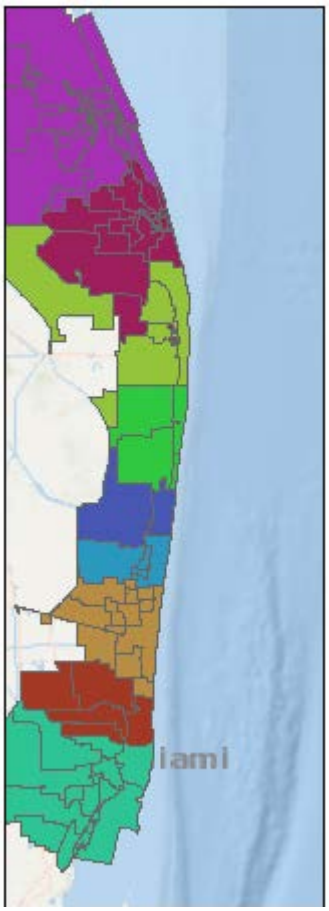
Use limitations:
There are no access and use limitations for this item.

Filter: None.

7.2. Inlet Contributing Areas

Inlet_contributing_areas

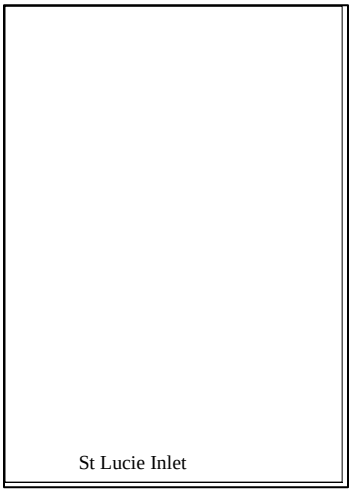
Description:
The inlet contributing areas (ICAs) to nine southeast Florida inlets were delineated to provide a framework for determining sources of pollution via the inlets to the adjacent coral reefs in the inland coastal waters. These ICAs represent the average water condition; boundaries might shift with floods or extreme wet or dry conditions. The inlet contributing areas (ICAs) were delineated using the WATERSHED feature class in the SFWMD's ArcHydro Extended Database. The watershed boundaries were modified based on the flow direction in the HYDROEDGE feature class, published reports for the Saint Lucie watershed, and technical input from South Florida Watershed Management District (SFWMD) personnel. The conservation areas on the west and some areas near Lake Okeechobee were excluded since that water either flows to the Lake or to the Everglades. Coastal watersheds encompassing the intra-coastal waterway were split into separate ICAs based on publish areas for tidal lenses.



Credits:
Kurtis Gregg (NOAA); Kevin Carter, Ken Konyha, and Lesley Bertolotti (SFWMD).

Use limitations:
There are no access and use limitations for this item.

Filter: None.



7.3. No Discharge Zones

No Discharge Zone South Florida

Description:
Represents no discharge zone in GIS format. There are none of these in the SEFCRI or OFR regions. This data set is intended to represent the outer boundary only. The "No Discharge Zone" includes only water areas by definition. This GIS data set represents no discharge areas in south Florida. The discharge of untreated "sewage" from boats into waters of the State is prohibited by both State law (Florida Litter Law - 403.413, F.S.) and Federal law (Clean Water Act). The state waters within the Florida Keys National Marine Sanctuary are of Clean Water Act no discharge designation 312(f)(4)(A) protecting special aquatic habitats or species. The waters around Key West are also include a designation of 312(f)(3) protecting aquatic habitats where pumpout facilities are available. This data set is intended to represent the outer boundary only. The "No Discharge Zone" includes only water areas by definition.

Credits:
FWC-FWRI.

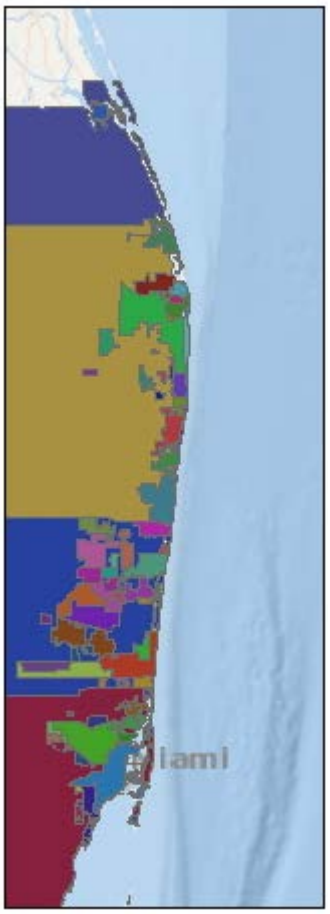
Use limitations:
FWC shall not be liable for improper or incorrect use of this data. These data are not legal documents and are not to be used as such. This is not a survey data set and should not be utilized as such. These data are not to be used for navigation.

Filter: None.

7.4. NPDES Stormwater

NPDES Stormwater

Description:
This dataset is a Municipal Separate Storm Sewer System or MS4, which is defined in Rule 62-624.2(8), F.A.C., as follows: Municipal separate storm sewer or MS4 means a conveyance or system of conveyances like roads with stormwater systems, municipal streets, catch basins, curbs, gutters, ditches, constructed channels, or storm drains: Owned or operated by a State, city, town, county, special district, association, or other public body (created by or pursuant to State Law) having jurisdiction over management and discharge of stormwater, or an Indian tribe or an authorized Indian tribal organization, that discharges to waters of the state; Designed or used for collecting or conveying stormwater; Which is not a combined sewer; and which is not part of a Publicly Owned Treatment Works (POTW). POTW means any device or system used in the treatment of municipal sewage or industrial wastes of a liquid nature which is owned by a "State" or "municipality." This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.The city limits coverage from FDEP SDE and the USGS 2M boundary cover were used to generate the polygons for this cover. The attributes were assigned using data from the NPDES Stormwater MS4 Permit information. The information is correct as of June 2007.



Credits: FDEP

Use limitations: None specified. Legend illustrated here is not complete.

Filter: None.

7.5. Outfall Locations

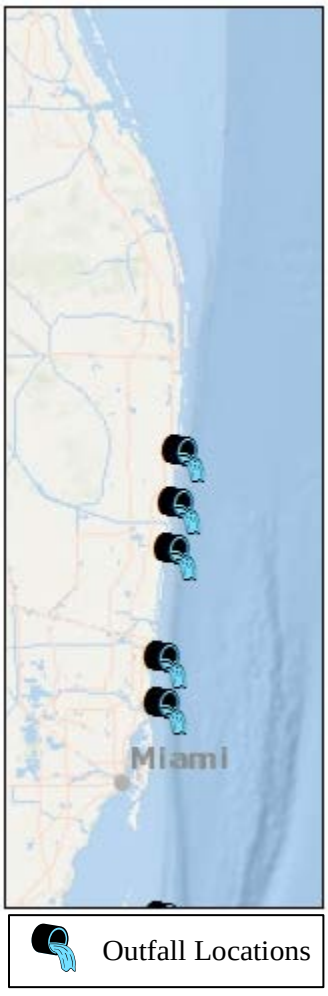
Outfall Locations 2011

Description:
These are the reported active sewage outfall locations in the SEFCRI region. They were created using the coordinates found in the NOAA Technical Report, OAR AOML-38. FACE OUTFALLS SURVEY CRUISE—OCTOBER 6-19, 2006. T. Carsey H. Casanova .C Drayer, C Featherstone, C. Fischer K. Goodwin. J. Proni. A. Saied. C. Sinigalliano. J. Stamates. P. Swart. J.-Z. Zhang. Atlantic Oceanographic and Meteorological Laboratory. Miami, Florida. February 2010.

Credits: NOAA AOML

Use limitations: None.

Filter: Yes. Distance from outfalls was calculated for every planning unit and provided. Contains a Minimum/Maximum slider with 0.5 mile intervals to include or exclude planning units from the specified distance from the outfalls.



7.6. Septic Tanks

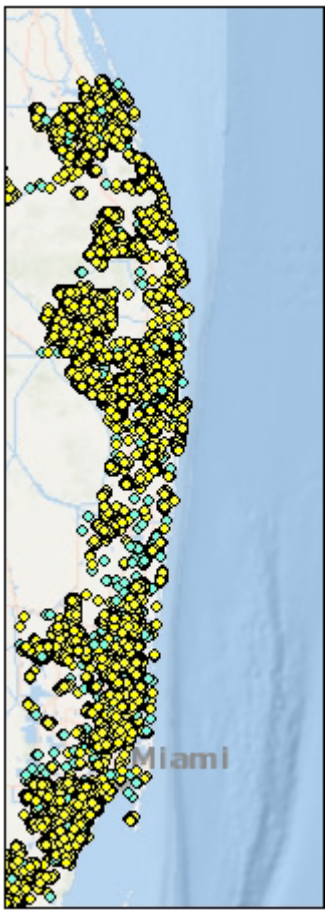
Septic Tanks

Description:
The purpose of this shapefile is to provide the location (as geocoded to the Street Level) of KNOWN Septic Tanks that are in the FDOH Bureau of Environmental Health's Environmental Health Database. This file only contains those records that A) Could be assigned a Latitude and Longitude, B) had their construction approved and at least one inspection of the system (usually at construction). This excludes Holding Tanks and Abandonments. Last Updated 11/15/2013

Credits:
Florida Department of Health - Division of Disease Control and Health Protection - Bureau of Environmental Health
Contact:
Mike Sims - GIS Manager
Mike.Sims@FLHealth.Gov

Use limitations:
Not to be used for navigation or surveying of any sort.

Filter: None.



Residential

7.7. Southeast Florida Watersheds

South Florida Watersheds

Description:
Watershed feature class in AHED was populated with Basins from HESM in 2004. During AHED population project Watershed boundaries were edited in consultation with subject matter experts. The Watershed boundaries were edited to be coincident with Controlled or UnControlled hydrojunctions associated with structures of the same types. New watersheds were also defined in areas that were not delineated as such before, for example STAs. Topology rules are enforced among features of Basin, Subbasin, Watershed, SubWatershed and Rainarea feature classes. The key attributes in the Watershed feature class are JUNCTIONID (HydroID of the related DrainPoint HydroJunction) and SUBBASINID (HydroID of the containing subbasin).

Formerly known at the District as Dbasins or Basins, Watersheds are the next level drainage areas under Subbasins. They represent the USGS 10 Digit Hydrologic Unit Code drainage areas. Watershed boundaries were updated during AHED Population Project by incorporating subject matter experts' advice and newer data from business units when available.

Credits: Southeast Florida Water Management District

Use limitations: None specified. The legend illustrated is not complete.

Filter: None.

7.8. Water Control Structures

Water Control Structures

Description:
The Structure feature class was populated using the Enterprise Structure SDE Layer (IMFDC_STRUCTURE_SITE) and additional locations provided by the District within the Stormwater Treatment Areas. Once Structures were added to AHED, the locations were verified using the 1:12000 DOQQs or higher resolution county imagery. The data is comprised of Structures that are primary and secondary and are classified as such in the HYDRO_ORDER field. Structures are related to the hydro network using hydrojunctions to build the relationships.

Structures are built constructions where water flow is disrupted or controlled in canals by water managers. A structure is a cohesive whole built or erected from distinct parts; a structure may be composed of other structures. A structure, or hydraulic structure in the Water Management System, is a submerged or partially submerged artifact in any body of water (including groundwater) that disrupts the natural flow of water, conveys water, controls the direction or rate of flow, maintains a desired water surface elevation, or measures water. AHED contains all structures operated by SFWMD and also some that belong to city, county, and 298 districts. The non-district features are added in areas that are operationally important for the district.

Credits:
South Florida Water Management District.

Use limitations:
None specified. There are none in the southeast Florida region. All of the water control structures in this layer are near Lake Okeechobee.

Filter: None.

7.9. Water Monitoring Site

Water Monitoring Sites

Description:
Monitoring Sites are included in AHED for logical grouping and for simplified regional display of monitoring locations. Monitoring sites currently do not participate in the network; therefore, there is no need to create Hydrojunctions for them. Key attributes include but are not limited to SITE (unique site name), and SITE_TYPE (type of site: hydrology or Water Quality).A Site is a location that is typically associated with one or more functionally related Water Management System components (e.g., structures) or monitoring stations or control stations in proximity to one another. A Site can be defined for different purposes. Site boundaries may or may not be explicitly defined and may or may not overlap.

Credits:
South Florida Water Management District.

Use limitations:
None specified. There are none in the southeast Florida region. The water monitoring site layer does not show any visible sites.

Filter: None.

APPENDIX A NOTES ON THE SPECIFIC PLANNING UNIT GRID DEVELOPMENT.

OFR Grid Attribute Definitions

UniqueID – a number assigned to each cell that is unique to the dataset. (no duplicates)

InjurySite – Y/N – whether a cell contains at least one recorded grounding or anchoring event in the DEP database.

LgLiveCorl – Y/N – Whether a cell contains at least one known live coral greater than 2 meters in width.

AcervAreaM – Area of mapped Dense Acropora cervicornis patches in m^2.

ReefArea_m – Area of Coral Reef and Colonized hardbottom habitats in m^2.

SGarea_m – Area of Seagrass habitats in m^2.

SandArea_m – Area of Sand habitat in m^2.

ArtAreaM – Area of Artificial habitats (Sand borrow areas, artificial reefs, inlets , jettys, channels,) in m^2.

MinDpth_ft – The shallowest depth in a cell in ft. Positive sign indicates depth, negative indicates elevation.

MaxDpth_ft – The deepest depth in a cell in ft. Positive sign indicates depth, negative indicates elevation.

MeanDpth_f – The average depth in a cell in ft. Positive sign indicates depth, negative indicates elevation.

MajorHab – The habitat with the largest value between ReefArea_m, SGarea_m, SandArea_m, and ArtAreaM.

PillarPres – Presence “P” of pillar coral in the cell; “A” are cells with no report of pillar coral.

Anchorage – Whether cell intersects with currently designated commercial ship anchorages.

MoorngBuoy – Whether a cell intersected the SEFCRI_Mooring_Buoys_FINAL layer.

Impacted – Whether a cell intersected with a mapped impact source (artificial reefs, dredged areas, cables, reef injuries, anchorages, burials, etc.)

DnsAcrpPA – Presence of dense Acropora patches.

PrcntSG – Percent Seagrass in each planning unit.

PrcntReef – Percent Reef in each planning unit.

PrcntSand – Percent Sand in each planning unit.

PrcntArt – Percent Artificial substrate (including dump sites, sand borrow areas, outfall pipes and designated artificial reefs) in each planning unit.

InletDisKM – The distance to the nearest inlet in kilometers

PierDisKM – The distance to the nearest pier in kilometers

OutflDisKM – The distance to the nearest sewage outfall discharge location in kilometers

ShoreDisKM – The distance to the nearest shore in kilometers

AncDen0913 – The density of boats anchoring within a 500 m radius circle in Berhinger's study. South of Hillsboro represent 2013-14 data. North of Hillsboro represent 2008-09 data.

Anchor0913 – The categorized density of boats anchoring within a 500 m radius circle in Berhinger's study. South of Hillsboro represent 2013-14 data. North of Hillsboro represent 2008-09 data.

MorDen0913 – The density of boats mooring within a 500 m radius circle in Berhinger's study. South of Hillsboro represent 2013-14 data. North of Hillsboro represent 2008-09 data.

Moor0913 – The categorized density of boats mooring within a 500 m radius circle in Berhinger's study. South of Hillsboro represent 2013-14 data. North of Hillsboro represent 2008-09 data.

InletDisMi – The distance to the nearest inlet in miles

PierDisMi – The distance to the nearest pier in miles

OutflDisMi – The distance to the nearest sewage outfall discharge location in miles

ShoreDisMi – The distance to the nearest shore in miles

Max_N_Taxa – The maximum value of coral richness in FRRP sites within the Planning Unit

Max_ColDen – The maximum value of coral density in FRRP sites within the Planning Unit

Max_SBII - The maximum value of the FRRP coral bleaching index in FRRP sites within the Planning Unit

Max_SDII – The maximum value of the FRRP coral disease index in FRRP sites within the Planning Unit

Max_RRI_SE – The maximum value of the FRRP coral resilience index in FRRP sites within the Planning Unit

Total – The total number of use days entered for a given Planning Unit in the OFR survey

Boat – Planning units that contain at least one entry for boating in the 2015 OFR survey

Scuba – Planning units that contain at least one entry for scuba diving in the 2015 OFR survey

Rec_fish – Planning units that contain at least one entry for recreational fishing in the 2015 OFR survey

Extrac_Div – Planning units that contain at least one entry for extractive diving in the 2015 OFR survey

Spear – Planning units that contain at least one entry for spear fishing in the 2015 OFR survey

RVCden1213 - Mean fish density per SSU (RVC 2012 & 2013, FL Keys 2012)

RVCrch1213 - Number of fish species per SSU (RVC 2012 & 2013, FL Keys 2012)

RecComDens – Mean fish density of recreationally and commercially important fish species (excluding ornamentals) in RVC surveys per SSU (RVC 2012 & 2013, FL Keys 2012)

CoralPtCov – The maximum value of percent coral cover in all compiled benthic survey sites within the Planning Unit

CoralRich – The maximum value of number of coral species in all compiled benthic survey sites within the Planning Unit

SpngPtCov – The maximum value of percent sponge cover in all compiled benthic survey sites within the Planning Unit

GorgPtCov – The maximum value of percent gorgonian cover in all compiled benthic survey sites within the Planning Unit

CorlDen_m2 – The maximum value of coral density (coral per square meter) in all compiled benthic survey sites within the Planning Unit

Jan 16 2015

Used 200m grid that was developed for the survey based on the RVC grid. "OFR_OffshorePlanningGrid_200m_habSpatialJoinTest_EPSG3857"

Assigned a Unique ID to each cell/unit(FID+1). Used Jenness Enterprises Graphic and Shapes to calculate centroid for each unit.(OFR_OffshorePlanningGrid_200m_centroids.shp)

Ran a near analysis on the selected Local Inlets and passes from the OFR gdb with the centroids Used geoid distance in meters.

Jan 20 2015

Discovered that EPSG3857 was not a good projection to use. Opened ArcMap in original grid projection and exported it back to change the projection back to original. Then calculated distance to grid cells in near using geodesic for Inlet and Passes, piers, FACEOutfallLocations2011, and Shoreline 1:12,000 Scale FL 2004.

Selected all planning units that intersected the "Reef Injuries" layer and Put a Y and vice versa for Injury sites.

Transformed the grid into the different lidar projections and ran the add surface information tool to get depth to the grid. This tool calculated minz maxz meanz and surface area. In martin had to mosaic the USACE06 and the Blom08 lidar for better coverage. Still left a gap at the inlet. For Miami-Dade had to merge all the NOAA 2009 lidar data layers together. Then transform depth to ft and merge with 2002 LADS. Had to resample 2002 layer to WGS84 UTM 17N m at the same cell size (1m). Used a bilinear interpolation. One area in the south had to be extracted from the 2002 LADS and put into the final map to hide some artifacts a few stitch line artifacts remain.

Jan 28 2015

Ran the Surface stats for PB and MD. Still need Brwd. Generated some random values for the fish and coral fields using arcgis.rand("Integer X Y") python script. ArcGIS 10.3 has a bug. This can only be used on ArcGIS 10.2 (not 10.2.1) or earlier.

Jan 29 2015

UniqueID cell 7686 would not process. I tried several times and kept getting Internal TIN error. Depth values for 7672 were copied to 7686. 262 cells in NPB were miscalculated. Exported those cells and ran surface calcs again. 1st run fixed 241 of them. 2nd run fixed the rest. Surface area was calculated differently depending on the projection. Took all cells where SA was calculated in UTM m and converted the SA by multiplying by 10.76391. The remaining values less than 400,000 ft² were converted to 0. This included many edge sites and a row between NPB and Martin.

Exported habitats by main types, CR & HB, Sand, SG, and Artificial. Clipped each one to the grid. Calculated area in m², associated to grid with UniqueID.

Added new field to depth columns as Float Prec 4, scale 1 to get values to 1 decimal. Inversed the signs as well.

Jan 30, 2015

Took ReefArea_m, SGarea_m, SandArea_m, and ArtAreaM data into excel and wrote a formula to determine the one in greatest abundance in each cell. The formula was =IF(C2 > SUM(D2:F2), "Reef", (IF(D2 > SUM(C2,E2:F2), "Seagrass", (IF(E2 > SUM(C2,D2,F2), "Sand", (IF(F2 > SUM(C2:E2), "Artificial", 0)))))). This left about 150 cells that I completed by hand.

Cleaned up the County and Region cells.

Feb 2 2015

Acquired latest Pillar coral locations from Gilliam and added them to the grid build3 as "PillarPres".

Highlighted all cells that intersected Broward, Miami-Dade, and Palm Beach Anchorages and entered a Y

Highlighted all cells that intersected with SEFCRI_mooringBuoys_FINAL and entered Y

Feb 3, 2015

Combined sites of mapped impact into three main files SE_FL_Impacted_polygons_union_v2, SE_FL_Impacted_lines_merge, SE_FL_Impacted_points_merge. The point data included FWC artificial reef points, reef injury points, Outfall pipe ends, Inlets and Passes, and piers. The line data included the Gabon grounding line, Navy cable array, and NOAA submarine cables. The polygon data included tire field, Eastwind, Fed Pesc, Alam Senang, SEFLDirect Imapcts From Ports and ships, all artificial mapped substrate in Walker maps, spoil areas, and commercial ship anchorages. A select by location was performed and all cells that intersected the three files were classified as Y for impact. All others classified as N. See C:\BrowardRemoteSensing\SE FL Impacted Locations for more.

Feb 5 & 6, 2015

Created a fishnet named OFR_OffshoreSurveyGrid_200m_Feb2015.shp in the same projection as OFR_OffshorePlanningGrid_200m_DSTbuild3.shp covering the extent of NOAA_ORF_shore_200m_PUG_wgs84_boundary.shp. Selected all cells and snapped to build3 grid. Had trouble snapping. It acted normal but when zoomed in, the snap was not exact so I zoomed in as much as the program would allow and performed the snap. Then selected all features in the new grid that intersected with both other layers, switched selection and deleted all extraneous cells. Created a centroid file of

OFR_OffshoreSurveyGrid_200m_Feb2015.shp called OFR_OffshoreSurveyGrid_200m_Feb2015_centroids.shp using Tools for Graphics and Shapes convert shapes to spherical centroids. Then joined centroids with OFR_OffshorePlanningGrid_200m_DSTbuild3.shp to associate all data which created a new file called OFR_OffshoreSurveyGrid_200m_Feb2015_centroids_Build3Join.shp.

Joined OFR_OffshoreSurveyGrid_200m_Feb2015_centroids_Build3Join.shp to OFR_OffshoreSurveyGrid_200m_Feb2015.shp by location to create OFR_OffshoreSurveyGrid_200m_Feb2015_join.shp. Then selected all cells with a UniqueID of 0 and ran the script below to create new sequential IDs starting at 24500.

---

1. Create a new short integer field.
2. Set the Parser to Python.
3. Select Show Codeblock.
4. Paste the following into the Pre-Logic Script Code:

```
rec=0

def autoIncrement():

 global rec

 pStart = 24500

 pInterval = 1

if (rec == 0):

  rec = pStart

else:

  rec += pInterval

 return rec
```

14. Paste the following code in the smaller box below the Pre-Logic Script Code:

```
autoIncrement()
```

15. Click OK.

Then ran this script to check for duplicate IDs.

1. Create a new field. Set the type as short or long integer and accept the other defaults. **-show me-**
2. Right-click the newly created field and select Field Calculator.
3. Select the Python parser. **-show me-**
4. Ensure that the 'Show Codeblock' option is checked.
5. Paste the following code into the Pre-Logic Script Code box:

```
uniqueList = []
def isDuplicate(inValue):
  if inValue in uniqueList:
    return 1
  else:
    uniqueList.append(inValue)
    return 0
```

13. Type 'isDuplicate(!UniqueID!)' in the lower expression box and replace the word 'Field' with the name of the field that contains the duplicated values.
The results of Steps 4 - 6 should resemble the following: **-show me-**

14. Click OK. All duplicate records are designated with a value of 1 and non-duplicate records are designated with a value of 0 in the new field.

Then deleted original OFR_OffshoreSurveyGrid_200m_Feb2015.shp. Exported OFR_OffshoreSurveyGrid_200m_Feb2015_join as OFR_OffshoreSurveyGrid_200m_Feb2015 and deleted all fields but UniqueID.

In OFR_OffshorePlanningGrid_200m_DSTbuild3.shp Selected all cells with a positive Dense Acropora Area, Created a new field Called DnsAcrpPA and insert a Y for the selection.

Created 4 new fields calculating the percent of hab type in each cell using ([Field] /40000) *100

Calculated Planar Area and Surface Rugosity for all Pus. PA/SA Selected all with SA < 40000 and recalculated using Broward 08 lidar Mosaic tif. Joined recalculated to OFR_OffshorePlanningGrid_200m_DSTbuild3.shp

Feb 9, 2015

Worked on Surface Rugosity. It turned out to be a mess. There was too much variation in surface area calculations between surveys thus no regional classification for High v Low rugosity could be done on the entire dataset. It would have to be split into each lidar dataset and determined individually. The results also showed that aside from noise, it was essentially picking up reef from non-reef in many cases. The 200x200 m scale does not seem appropriate for determining any meaningful relationships to rugosity. It was decided to move this layer request to the “Did not address” pile.

Exported Build3 to Build4, deleted surface rugosity fields, and converted all distance fields to km.

These Fields were removed from build 4:

SurfaceRug – Planar area / Surface area. Pus with less than 40000 SA were given 0 values or recalculated using a different DEM.

SurfArea_f – Surface area (ft^2) calculated during depth stats. Positive sign indicates depth, negative indicates elevation.All values less than 400000 were changed to 0.

PlanarArea

March 3, 2015

Worked on relating Berhinger’s data to the grid build 4. Split the data into 4: 2008-09 anchored boats; 2008-09 moored boats, 2012-13 anchored boats, 2012-13 moored boats. Performed Point Density analyses of each dataset using a 500 m radius. Used surface

information mean Z to get mean boat density for each grid cell. Then classified each into 0-None, 1<5 Low, 5=<10 Medium, 10=<25 High, >=25 Very high.

March 12, 2015

After associated with the grid, I combined Berhinger's data from 2013 with the 2009 data to fill in the gaps and give a complete map. Only 2013 data were used in the south and 2009 in the north. The result was four columns: AncDen0913, Anchor0913, MorDen0913, and Moor0913. This was then exported as build 5 and previous columns were deleted.

Converted distance to inlet, piers, shore, and outfalls by multiplying the KM columns by 0.6213712. All KM columns were deleted.

These data were removed from build 5:

InletDisKM – The distance to the nearest inlet in kilometers

PierDisKM – The distance to the nearest pier in kilometers

OutflDisKM – The distance to the nearest sewage outfall discharge location in kilometers

ShoreDisKM – The distance to the nearest shore in kilometers

Corrected the habitat calculations to remove sand borrow areas from artificial and put in sand habitat. Extracted SBA from Dec2014.shp. Copied these and added to sand only file. Then selected all artificial only polys that were within the sand and deleted them from the artificial only file. Merged all sahpes into one for both sand and art only. Performed clip to build 5 grid with both. Deleted all fields but uniqueID and area. Calculated new area. Joined files to build 5 by uniqueID. Set all data in build 5 sand and art area fields to 0. Then used field calculator = to the join area for each. There were many nulls so if you don't set the original data to 0, it won't be overwritten in the Null rows. Then recalculated percent sand and art in field calculator by ((field)/40000)*100

March 13, 2015

Imported CJs ResilienceMetrics4.shp. Selected all points that intersected build 5 grid and exported to ResilienceMetrics4_SEFCRI.shp. Added four new columns and calculated new index classes based on 2 standard deviations for Coral Density (1.91), Standardized Bleaching index (1.6), and Standardized Disease Index (0.847). Each column with values greater than these received a 1, all others a 0. RRI_SEFCRI was the result of Coral density class, minus the SBI class, minus the SDI class. Data were then related to the grid where a -9 was assigned to all cells with no data. In PUs where there were two or more sites, the highest value was applied.

Conducted a spatial join between Build 5 grid and ResilienceMetrics4_SEFCRI.shp taking the max value in each cell. Kept the Coral Density, richness, bleaching index, disease index, and resilience index.

March 16, 2015

Added in OFR Survey data compiled by Amanda. Calculated centroids for each survey PU and associated survey data to it. Then did a spatial join of the centroids to OFR_OffshorePlanningGrid_200m_DSTbuild8.shp

March 18 & 19, 2015

Received data from John Fauth for compiled coral cover and richness. Data were odd and had some locations with cover percentages and no richness. Asked him if there may have been an error. Waiting to hear. I updated and replaced data I had access to. FRRP data were downloaded for cover by site. The data come as est planar coral area. I converted into percent by dividing by survey area. This is overinflated because FRRP measures the entire coral even if it extends beyond the transect. I then compiled Martin Mapping data, SE FL nearshore mapping data, and Town of Palm Beach nearshore mapping data and added to the dbase. PB nearshore data were collected in size classes so the mean size for each bin was used to calculate colony area. Then totals were divided by survey area to get percents. These are also over estimates of % cover. Site 38 was deleted because it was a clear outlier amounting to 20% cover. Several others were in the 2 – 4% range but were left in the dbase. Updated SECREMP, BC monitoring, and Navy non-cable data. Added density where easily possible.

March 20, 2015

Found USDOC NOAA submerged cables service online but it comes with many extra layers. Decided to just use custom layer downloaded from the NOAA site and clipped to FL. Looked through list of RVC species and picked out recreationally and commercially important spp. These were fishes that fishermen target and not for aquaria. The spp included snappers, groupers, hogfish, grunts, jacks, barracuda, mackerel, triggerfish, etc. The spp density was totaled for each PSU but the spp density data was left to reference the spp included and to allow for individual assessment in GIS. These data will also be available in the info section of the MP. A spatial join was conducted where the max value for each PU was taken. Added column RecComDens to Build 9. Changed all unsurveyed areas to -9.

Explored getting fish data south of Gov Cut. NOAA boigeo has 1980 – 2010. Asked Steve Smith if he knew of other or newer data.

March 23, 2015

Obtained and plotted 2012 FL keys RVC data. Only came in SSU. Decided to use SSU for SEFCRI region as well and take max value per PU. Imported SSU sefcri 2012-13 Data from Steve in Feb 2015. Calculated total density and Richness per SSU and added 2012 FL keys data for Biscayne. All PUs without survey received -9.

Summarized Lauren's Anchorage data and plotted all coral points. Deleted those for FL Keys and Errant locations for Boca Raton Beach Nourishment Project. Corrected the Biomarker locations to plot correctly.

Build 9 didn't show polygons. Joined RecComDens to build 8. Joined OFR_DST_coral_data.shp to build 8 by spatial location taking max value and saved as build 9. All but CrlDens_m2 showed up. Created new fields for each renaming them. Created a new field in OFR_DST_coral_data and used field calc to populate for density. Performed new join which worked. Saved as Build 10. Selected all sites without a coral survey and replaced 0 with -9.

March 24, 2015

Used the latest RVC SSU data set from Steve (Feb 2015) to filter out the recreation and commercially important fishes. Opened the previous PSU layer and deleted all spp from the SSU layer that were not in the PSU layer. Then opened the FL Keys 2012 xls and pared it down to just the 35 sites off Biscayne. Then cleaned those data to eliminate all spp with 0 totals and spp that didn't match PSU layer. Imported by spreadsheets into Arc and copied the Biscayne points and pasted to the new SSURecComDen layer.

Discovered that the distance calculations converted to Miles were off because of the low scale and precision in the table attributes. Exported Build 3 and deleted all fields except Unique ID and distance ones. These were in meters. Joined by Unique ID to Build 11. Deleted old field in Build 11 and created new ones with the same titles but of Double Scale 7 Precision 2. Converted m to mi using field calc by multiplying m by 0.0006213712. Checked distances.

Recalculated RVC fish data to grid because of earlier corrections. Zero'd out all data then re-associated using the latest SSU shapefiles. End result was OFR_OffshorePlanningGrid_200m_DSTbuild13. Went through the Google doc and defined all the widget parameters for the filter layers.

April 4, 2015

Added in final OFR Survey data compiled by Amanda. Added an ID field to Matt's shapefile survey_results_20150401 equal to FID. Calculated centroids for each survey PU => OFR_Survey_results_All. Then joined with survey_results_edited4MP.xls by FID to ID => OFR_Survey_Results_All_Join.shp. Then ran a spatial join of OFR_Survey_Results_All_Join.shp to OFR_OffshorePlanningGrid_200m_DSTbuild13.shp => OFR_OffshorePlanningGrid_200m_DSTbuild14.shp

Created new field to rename survey fields. Created a fishing diving overlap layer by making all fishing_conflict negative and subtracting them from the diving_conflict in the fishdivovr field. Replaced all nulls with -999 before this operation. Result is a field that contains data for only areas where both activities occurred and ranged in scale from high fishing as negative and high diving positive. Zero's were areas where both fishing and diving occurred equally. Changed zeros in all other survey fields to -999.

April 6, 2015

Exported each survey summary field as a separate layer and one that contained all summaries. Discovered that these layers did not contain the survey data outside of the OFR DST grid. Joined the centroid data to the survey polygons to associate summary data to all survey polygons. Then exported and saved.

Changed all -9s in build 14 to -999. Added summary info to Google doc.

May 14, 2015

After realizing the survey data were tabulated incorrectly by P97, they had to recalculate, check, and send a new survey results file that superceded the April 1 delivery. P97 sent a "corrected" version of the survey results on May 13, but this file contained some extraordinary activity days for certain areas that were off by a level of magnitude. P97 responded by getting a GIS analyst.

May 15, 2015

Amanda summarized the data in OFR_OffshoreSurveyGrid_200m_ModalValues.shp to the CWG categories and added them to OFR_survey_FINAL_results_150515_DONE.shp. This file was exported and all fields removed except for UniqueID Summaries =>OFR_150515_final_SummareisOnly.shp.

Calculated centroids for each survey PU => OFR_150515_final_SummareisOnly_centroids.shp. Then ran a spatial join of OFR_150515_final_SummareisOnly_centroids.shp to OFR_OffshorePlanningGrid_200m_DSTbuild14.shp => OFR_OffshorePlanningGrid_200m_DSTbuild15.shp. Replaced the existing field data with the newly added fields using the field calculator. Changed zeros in all survey fields to -999 except fish dive overlap.

Amanda summarized the survey location data by the CWG groups. This was plotted in GIS => OFR_raw_activity_data_finalized_150515.shp. This file was then spatially joined using sum to OFR_OffshorePlanningGrid_200m_DSTbuild15.shp => creating OFR_OffshorePlanningGrid_200m_DSTbuild16.shp

Updated RVC data- Took 2014_RVCSurveyLocation_RchDensOnly.shp (which included all years) and joined it to OFR_OffshorePlanningGrid_200m_DSTbuild16.shp using max values => creating OFR_OffshorePlanningGrid_200m_DSTbuild17.shp

June 12, 2015

Favorite spot points were opened in ArcGIS. Saved the file "OFR_OffshoreSurveyGrid_200m_Feb2015.shp" as "OFR_2014Survey_Results_FavSpot.shp". Created a 150 m buffer around each point. Then Selected all PUs that intersected the buffers and exported them to "OFR_2014Survey_Results_FavSpotOnly.shp". Investigated ways to count up the

overlapping polygons within each PU. It looks like the summarize within tool will do it, but for some reason it is not in my toolbox.

Spatially joined OFR_survey_fav_spot.shp using the sum to "OFR_2014Survey_Results_FavSpot.shp" and saved as "OFR_2014Survey_Results_FavSpot.shp_join. All fields deleted expect UniquID and Count. Count is the number of responses in a PU.