Benthic Habitats Marquesas-Quicksands Florida 2006

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Metadata:

Identification_Information:

Citation:

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Publication_Date: 20110601

Title: Benthic Habitats Marquesas-Quicksands Florida 2006

Geospatial_Data_Presentation_Form: vector digital data

Originator: Coastal Planning & Engineering, Inc.

Description:

Abstract:

This GIS data set represents the delineation of benthic habitats for the Marquesas-Quicksands area of the Florida Keys interpreted from digital, high-resolution, pan-sharpened, color IKONOS satellite imagery supplied by FWC-FWRI staff. Maps were interpreted and field calibrated by CPE with guidance from FWC-FWRI. The study area was divided into three sub-areas for field mapping purposes: Year 1 Area, Year 2 Area, and Year 3 Area. Mapping entailed a two-phased approach. First, each area was preliminarily examined using ArcMap GIS software to visually interpret the imagery and draw polygons around each observed habitat. Major and sub-categories for structure, zone, and cover components were mapped and classified according to the National Ocean Service classification scheme for south Florida and the Keys entitled: 'A Classification Scheme for Mapping the Shallow-water Coral Ecosystems of Southern Florida, version 3.2, 20 June 2008' (http:/ccma.nos.noaa.gov/ecosystems/coralreef/fl_mapping.html). The second phase included a field-based ground validation of habitat classifications using a GPS-integrated drop video system along with snorkel and SCUBA assessments. These data were used to calibrate the GIS line-work and classifications of habitat type.

Purpose:

To generate a benthic habitat map of a portion of unmapped or previously mapped as "unknown" area of the Florida Keys. The product shall be stored in perpetuity within the Marine Resources Geographic Information System maintained by FWC-FWRI.
Status:
Progress: Complete
Maintenance_and_Update_Frequency: None planned
Spatial_Domain:
Bounding_Coordinates:
West_Bounding_Coordinate: -82.625915
East_Bounding_Coordinate: -81.692338
North_Bounding_Coordinate: 24.774390
South_Bounding_Coordinate: 24.412285
Keywords:
Use_Constraints:
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.
Point_of_Contact:
Contact_Information:
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Data_Set_Credit:
FWC-FWRI (Florida Fish and Wildlife Conservation Commission-Fish and Wildlife Research Institute), Coastal Planning & Engineering, Inc. (CPE)
Security_Information:
Security_Classification_System: FWRI-DC
Security_Classification: Available without Restriction
Security_Handling_Description: Available without Restriction
Native_Data_Set_Environment:
Microsoft Windows Server 2008 R2 Version 6.1 (Build 7600) ; ESRI ArcGIS 10.0.0.2414
Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date: 20060304
Ending_Date: 20061007
Currentness_Reference: ground condition
Access_Constraints:
Available without restriction. All data must be verified by Principal Investigator or Group Database Analyst prior to release. It is strongly recommended that this data is directly acquired from FWC and not indirectly through other sources which may have changed the data in some way. FWC makes no claims as to the data's suitability for other purposes.

Data_Quality_Information:
Lineage:
Process_Step:
Process_Description:
Maps were interpreted and field calibrated by CPE with guidance from FWC-FWRI. The study area was divided into three sub-areas for field mapping purposes: Year 1 Area, Year 2 Area, and Year 3 Area. Mapping entailed a two-phased approach. First, each area was preliminarily examined using ArcMap GIS software to visually interpret the imagery and draw polygons around each observed habitat. Major and sub-categories for structure, zone, and cover components were mapped and classified according to the National Ocean Service classification scheme for south Florida and the Keys entitled: 'A Classification Scheme for Mapping the Shallow-water Coral Ecosystems of Southern Florida, version 3.2, 20 June 2008' (http:/ccma.nos.noaa.gov/ecosystems/coralreef/fl_mapping.html). The second phase included a field-based ground validation of habitat classifications using a GPS-integrated drop video system along with snorkel and SCUBA assessments. These data were used to calibrate the GIS line-work and classifications of habitat type. Classification designations were first verified in the field through ground validation using in-situ methods. These data were returned to the office and compared to preliminary mapping in GIS; any discrepancies were then corrected at this point. Future internal accuracy assessment will be conducted on each area to determine if 90-95% thematic accuracy within the Seagrass category and sub-categories is accomplished. The deliverable will then be submitted to FWC-FWRI for review and approval before undergoing an independent, external accuracy assessment by a panel of federal, state,

university, and local Florida experts. Results of the panel review will be used to make final corrections. HORIZONTAL ACCURACY: 1. IKONOS - Satellite images used to generate the digital data for the Marquesas mapping project were collected between March 4 and October 7, 2006. The polygons represent the distribution of benthic habitats in the Keys over this time period. The horizontal accuracy of well-defined points (clearly identifiable, immobile objects such as the corners of wharves) is within 2 m. The horizontal accuracy of continuous data (e.g., benthic habitats) ranges from 5 to 10 m, depending on the habitat class. Certain benthic features, such as patch reefs and spur-and-groove reefs, have a horizontal accuracy of 5 m. These habitats are composed of massive rock and coral formations that are stable in position over time and are resistant to all but the most powerful physical forces. Coral reefs, once established, tend to remain for decades or centuries. 2. Field points: Ground validation points were generated in ArcMap GIS. These points were then loaded into HYPACK and the field crew navigated to the point using a Trimble GPS (Global Positioning System) with correction from a U.S. Coast Guard Navigational Beacon. Based on specifications provided by Trimble, code differential GPS positioning has a horizontal accuracy of +/- 0.25 m + 1 ppm RMS. Code differential was visually confirmed before and during each in situ measurement. 3. Digitization: Contracted ecologists and remote sensing scientists interpreted the satellite images and digitized polygon habitats into ESRI Shapefiles using ArcGIS. The same contractor carried out the groundtruthing activities. FWRI staff provided support for the photo interpretation, delineation, and ground-truthing activities and for reviewing the benthic classifications. NOAA staff digitally compiled the photographic information. These data are preliminary and are expected to be reviewed by FWRI staff.
Habitats were mapped according to the National Ocean Service classification scheme for south Florida and the Keys entitled: 'A Classification Scheme for Mapping the Shallow-water Coral Ecosystems of Southern Florida, version 3.2, 20 June 2008' (http:/ccma.nos.noaa.gov/ecosystems/coralreef/fl_mapping.html). The assignment of habitat cover categories to the map is a stepwise progression from Live Coral to Seagrass to Macroalgae, etc, until the Uncolonized category is reached. Similarly, the assignment of habitat cover sub-categories is a stepwise progression from Live Coral-Continuous to Live Coral-Patchy to Live Coral-Sparse before jumping to the Seagrass category. The stepwise progression proceeds from Seagrass-Continuous to Seagrass-Patchy to Seagrass-Sparse before jumping to the Macroalgae category, etc. As a result, there are cases where, for example, a habitat polygon may exhibit ~25% seagrass and ~75% macroalgae and will be classified as Seagrass-Sparse rather than Macroalgae-Patchy, even though the dominant seafloor cover is macroalgae. All habitat Cover categories and sub-categories were mapped.
All seafloor features visible in the imagery, except for patch reefs, were mapped to the 0.4-ha (4,047 sq m; ~1 ac) minimum mapping unit (MMU) specification. Patch reefs visible in the imagery were mapped using an approximately 0.0625-ha (625 sq m; 0.154 acre) MMU. Land was mapped to the 0.1-ha (1,000 sq m; 0.247 acre) MMU. Land is represented as hard features (e.g., dock or canal edges) or the landward boundary of red mangrove extent visible in the imagery. QUALITY CONTROL Classification designations were first verified in the field through ground validation using in-situ methods. These data were returned to the office and compared to preliminary mapping in GIS; any discrepancies were then corrected at this point. Future internal accuracy

assessment will be conducted on each area to determine if 90-95% thematic accuracy within the Seagrass category and sub-categories is accomplished. The deliverable will then be submitted to FWC-FWRI for review and approval before undergoing an independent, external accuracy assessment by a panel of federal, state, university, and local Florida experts. Results of the panel review will be used to make final corrections.
Process_Contact:
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Country: USA
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Contact_Facsimile_Telephone: 1-561-391-9116
Contact_Electronic_Mail_Address: qrobertson@coastalplanning.net
Process_Step:
Process_Description: Metadata imported.
Source_Used_Citation_Abbreviation:
\\SELLERS\Administration\Groups\GIS\gis_data_mgt_team\forSDE\Marquesas_DRAFT_DELIVERABLES\POLYGONS_042011DRAFT_esritra.xml
Process_Date: 20110928
Process_Time: 14370800

Spatial_Data_Organization_Information:
Direct_Spatial_Reference_Method: Vector
Point_and_Vector_Object_Information:
SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: GT-polygon composed of chains
Point_and_Vector_Object_Count: 2934

Spatial_Reference_Information:
Horizontal_Coordinate_System_Definition:
Planar:
Planar_Coordinate_Information:
Planar_Coordinate_Encoding_Method: coordinate pair
Coordinate_Representation:
Abscissa_Resolution: 0.00000000222000241645009 56
Ordinate_Resolution: 0.00000000222000241645009 56
Planar_Distance_Units: meters
Map_Projection:

Map_Projection_Name: Albers Conical Equal Area
Albers_Conical_Equal_Area:
Standard_Parallel: 24
Standard_Parallel: 31.5
Longitude_of_Central_Meridian: -84
Latitude_of_Projection_Origin: 24
False_Easting: 400000
False_Northing: 0
Geodetic_Model:
Horizontal_Datum_Name: D North American 1983
Ellipsoid_Name: GRS 1980
Semi-major_Axis: 6378137.0
Denominator_of_Flattening_Ratio: 298.257222101

Entity_and_Attribute_Information:
Detailed_Description:
Entity_Type:
Entity_Type_Label: POLYGONS_FINAL
Attribute:
Attribute_Label: FID
Attribute_Definition: Internal feature number.
Attribute_Definition_Source: ESRI
Attribute_Domain_Values:
Unrepresentable_Domain:
Sequential unique whole numbers that are automatically generated.
Attribute:
Attribute_Label: Shape
Attribute_Definition: Feature geometry.
Attribute_Definition_Source: ESRI
Attribute_Domain_Values:
Unrepresentable_Domain: Coordinates defining the features.
Attribute:
Attribute_Label: Major_Stru
Attribute_Definition:
Major Structure: a broad description of the habitat found within the polygon.
Attribute_Definition_Source: NOAA
Attribute:
Attribute_Label: Detailed_S
Attribute_Definition: Detailed Structure: description of the polygon's habitat.
Attribute_Definition_Source: NOAA
Attribute:
Attribute_Label: Zone
Attribute_Definition:
Geographic zone: refering to the geographic location of the polygon
Attribute_Definition_Source: NOAA
Attribute:

Attribute_Label: Major_Bio_
Attribute_Definition:
Major Biological Cover: assignment of biological cover is a stepwise progression from Live Coral to Seagrass to Macroalgae, etc, until the Uncolonized category is reached
Attribute_Definition_Source: NOAA
Attribute:
Attribute_Label: Percentage
Attribute_Definition: Percentage: the percentage of cover by the major biology
Attribute_Definition_Source: NOAA
Attribute:
Attribute_Label: Detailed_B
Attribute_Definition:
Detailed Biological Cover: detailed assignment of habitat cover is a stepwise progression from Live Coral-Continuous to Live Coral-Patchy to Live Coral-Sparse before jumping to the Seagrass category. The stepwise progression proceeds from Seagrass-Continuous to Seagrass-Patchy to Seagrass-Sparse before jumping to the Macroalgae category, etc
Attribute_Definition_Source: NOAA
Attribute:
Attribute_Label: acres
Attribute_Definition: area of polygon in acres
Attribute_Definition_Source: CPE
Attribute:
Attribute_Label: CODE
Attribute_Definition:
numeric code used for in-house processing. Each digit of the code represents a different attribute from the "Classification Scheme for Mapping the Shallow-water Coral Ecosystems of Southern Florida"
Attribute_Definition_Source: CPE
Attribute:
Attribute_Label: POLY_ID
Attribute_Definition: unique polygon ID
Attribute_Definition_Source: CPE
Attribute:
Attribute_Label: sq_km
Attribute_Definition: area of polygon in square kilometers
Attribute_Definition_Source: Coastal Planning & Engineering Inc.

Distribution_Information:
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Digital_Form:
Digital_Transfer_Information:
Format_Name: SHP
Transfer_Size: 0.023
Digital_Transfer_Option:
Online_Option:
Computer_Contact_Information:
Network_Address:
Network_Resource_Name: <http://myfwc.com/research>
Available_Time_Period:
Time_Period_Information:
Single_Date/Time:
Resource_Description: Downloadable Data
Custom_Order_Process: Contact GIS Librarian

Metadata_Reference_Information:
Metadata_Date: 20110928
Metadata_Contact:
Contact_Information:
Contact_Organization_Primary:
Contact_Organization: Coastal Planning & Engineering, Inc.
Contact_Person: Dr Quin Robertson
Contact_Position: Project Manager
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Address_Type: Unknown
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City: Boca Raton
State_or_Province: FL
Postal_Code: 33431
Country: USA
Contact_Voice_Telephone: 1-561-391-8102
Contact_Facsimile_Telephone: 1-561-391-9116
Contact_Electronic_Mail_Address: qrobertson@coastalplanning.net
Metadata_Standard_Name: FGDC Content Standard for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998
Metadata_Use_Constraints: Metadata must be distributed with the data set.
Metadata_Security_Information:

Lineage:

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