Gulf of Mexico 5-Zone Seasonal Dynamic Salinity Digital Geography

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Metadata:
File identifier:
gov.noaa.nodc.ncddc.
Language:
eng; USA
Character set:
Character set code:
utf8
Hierarchy level:
Scope code:
dataset
Metadata author:
Responsible party:
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National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), National Centers for Coastal Ocean Science (NCCOS), Center for Coastal Monitoring and Assessment (CCMA), Biogeography Branch
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0800-1700, Monday to Friday, EST
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Role code:
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Date stamp:
2012-10-26
Metadata standard name:
ISO 19115-2 Geographic Information - Metadata - Part 2: Extensions for Imagery and Gridded Data
Metadata standard version:
ISO 19115-2:2009(E)

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Spatial representation info:
Vector spatial representation:
Geometric objects:
Geometric objects:
Geometric object type:
Geometric object type code:
complex
Geometric object count:
1462

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Spatial representation info:
Grid spatial representation:
Number of dimensions:
2

Axis Dimension Properties:
Dimension:
Dimension name:
Dimension name type code:
column
Dimension size:
unknown
Resolution:
uom: decimalDegrees 0.000001
Axis Dimension Properties:
Dimension:
Dimension name:
Dimension name type code:
row
Dimension size:
unknown
Resolution:
uom: decimalDegrees 0.000001
Cell geometry:
Cell geometry code:
Transformation parameter availability:
false

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Reference system info:
Reference system:

Return To Index

Reference system info: xlink: https://www.ngdc.noaa.gov/docucomp/65f8b220-95ed-11e0-aa80-0800200c9a66 title: North American Datum 1983

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Reference system info: xlink: https://www.ngdc.noaa.gov/docucomp/c3895520-95ed-11e0-aa80-0800200c9a66 title: Geodetic Reference System 1980

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Identification info:
Data identification:
Citation:
Citation:
Title:
Gulf of Mexico 5-Zone Seasonal Dynamic Salinity Digital Geography
Date:
Date:
Date:
2012-10-01
Date type:
Date type code:
publication
Cited responsible party:
Responsible party:
Organisation name:
Department of Commerce (DOC), National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), National Centers for Coastal Ocean Science (NCCOS), Center for Coastal Monitoring and Assessment (CCMA), Biogeography Program
Role:
Role code:
originator
Presentation form:
Presentation form code:
mapDigital

Abstract:
This is an ArcGIS shapefile which depicts the seasonal salinity dynamics of 32 Gulf of Mexico estuaries. To characterize the dynamic nature of estuarine salinity gradients, a multivariate methodology (Bulger et al. 1993) was applied to derive five bio-salinity zones in four salinity seasons for 32 Gulf of Mexico estuaries (Christensen et al. 1997). This seasonal salinity zone spatial framework built upon and refined earlier studies which characterized salinity on an annual-averaged basis (NOAA 1985, Orlando et al. 1993, NOAA 2007). Precipitation, flow gage data, and monthly salinity averages were evaluated to determine which months would be used to represent the high, low, and transitional (increasing and decreasing) salinity periods. A contour modeling procedure was applied to the data to develop seasonal salinity zones for each estuary. The salinities used to define the five seasonal zones were: 1) Salinity Zone I: 0 - 0.5 ppt; 2) Salinity Zone II: 0.5 – 5 ppt; 3) Salinity Zone III: 5-15 ppt; 4) Salinity Zone IV: 15-25ppt; and 5) Salinity Zone IV: >25ppt. These salinity zones are two-dimensional and depth-averaged, and vertical stratification is not explicitly characterized. Therefore, they can be readily represented geographically as two-dimensional areas, which shift seasonally. The monthly periods of high, low, increasing and decreasing “salinity seasons” vary greatly among estuaries, primarily because of different typical periods of high and low freshwater inflow. For example, the low salinity season in Galveston Bay, Texas occurs in April - June, while in Mobile Bay, Alabama, the low salinity season occurs in February – April.

Purpose:
This Gulf of Mexico 5-Zone Seasonal Dynamic Salinity Digital Geography was developed in the late 1990s to provide a spatial framework for organizing information on the relative abundance of fishes and invertebrates, and update NOAA’s Estuarine Living Marine Resources (ELMR) data base in the Gulf of Mexico region (Nelson and Monaco 2000, Nelson et al. 1992, Pattillo et al. 1997). These updates to the ELMR information base were initiated in response to the need to designate Essential Fish Habitat (EFH) under the revised Magnuson-Stevens Fishery Management and Conservation Act (NOAA/GMFMC 1998). Results were also provided to the U.S. Minerals Management Service (MMS) to be included in a Gulf-Wide Information System (GWIS) (MMS 1999). More recently, this digital geography was included as a part of a Gulf of Mexico Ecosystem Pilot Project, and is now a component plate in the Gulf of Mexico Data Atlas developed by NOAA NCDDC (National Coastal Data Development Center).

Credit:
National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries

Science Center, Galveston Laboratory; National Oceanic and Atmospheric Administration, National Ocean Service, Biogeography Program; National Oceanic and Atmospheric Administration, National Centers for Coastal Ocean Science, Center for Coastal Monitoring and Assessment.

Status:
Progress code:
completed

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Role code:
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Resource maintenance:
Maintenance information:
Maintenance and update frequency:
Maintenance frequency code:
asNeeded

Descriptive keywords:
Keywords:
Keyword:
estuary
Keyword:
salinity
Keyword:
zones
Type:
Keyword type code:
theme
Thesaurus name:
Citation:
Title:
None
Date:
unknown

Descriptive keywords:
Keywords:
Keyword:
Apalachee Bay
Keyword:
Apalachicola Bay
Keyword:
Aransas Bay
Keyword:
Atchafalaya Bay
Keyword:
Baffin Bay
Keyword:
Barataria Bay
Keyword:
Biscayne Bay
Keyword:
Brazos River
Keyword:
Breton Sound
Keyword:
Calcasieu Lake
Keyword:
Caloosahatchee River
Keyword:
Chandeleur Sound

Keyword:
Charlotte Harbor
Keyword:
Choctawhatchee Bay
Keyword:
Corpus Christi Bay
Keyword:
Florida Bay
Keyword:
Galveston Bay
Keyword:
Laguna Madre
Keyword:
Lake Pontchartrain
Keyword:
Matagorda Bay
Keyword:
Mermentau River
Keyword:
Mississippi River
Keyword:
Mississippi Sound
Keyword:
Mobile Bay
Keyword:
North Ten Thousand Islands
Keyword:
Pensacola Bay
Keyword:
Perdido Bay
Keyword:
Sabine Lake
Keyword:
San Antonio Bay
Keyword:
South Ten Thousand Islands
Keyword:
St. Andrew Bay
Keyword:
Suwannee River
Keyword:
Tampa Bay
Keyword:
Terrebonne Bay
Keyword:
Timbalier Bay
Keyword:
Vermillion Bay
Type:
Keyword type code:
place
Thesaurus name:
Citation:
Title:
None
Date:
unknown
Descriptive keywords:
Keywords:
Keyword:
Spring
Keyword:
Summer
Keyword:
Fall
Keyword:
Winter
Keyword:
High salinity season
Keyword:
Low salinity season
Keyword:
Decreasing salinity season
Keyword:
Increasing salinity season
Type:
Keyword type code:
temporal
Thesaurus name:
Citation:
Title:
None
Date:
unknown
Resource constraints:
Legal constraints:
Access constraints:
Restriction code:

otherRestrictions
Use constraints:
Restriction code:
otherRestrictions
Other constraints:
Access Constraints: None Use Constraints: None Distribution Liability: NOAA makes no warranty regarding these data, expressed or implied, nor does the fact of distribution constitute such a warranty. NOAA, NESDIS, NODC, and NCDDC cannot assume liability for any damages caused by any errors or omissions in these data, nor as a result of the failure of these data to function on a particular system.
Aggregation Info:
AggregateInformation:
Aggregate Data Set Name:
Citation:
Title:
Salinity Characteristics of Gulf of Mexico Estuaries
Date:
Date:
Date:
1993-07
Date type:
Date type code:
publication
Cited responsible party:
Responsible party:
Organisation name:
NOAA, National Ocean Service, Office of Ocean Resources Conservation and Assessment
Role:
Role code:
originator
Cited responsible party:
Responsible party:
Organisation name:
NOAA, Office of Ocean Resources Conservation and Assessment
Contact info:
Contact:
Address:
Address:
City:
Silver Spring
Administrative area:
MD
Role:
Role code:
publisher
Presentation form:
Series:
Series:
Name:
NOAA National Estuarine Inventory Series
Issue identification:
none
Other citation details:
Orlando, S.P. Jr, L.P. Rozas, G.H. Ward, C.J. Klein.
Association Type:
Association type code:
crossReference
Aggregation Info:
AggregateInformation:
Aggregate Data Set Name:
Citation:
Title:
Gulf of Mexico 3-Zone Average Annual Salinity Digital Geography
Date:
Date:
Date:
1999
Date type:
Date type code:
publication
Cited responsible party:
Responsible party:
Organisation name:
Department of Commerce (DOC), National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), National Centers for Coastal Ocean Science (NCCOS), Center for Coastal Monitoring and Assessment (CCMA), Biogeography Program
Role:
Role code:
originator
Cited responsible party:
Responsible party:
Organisation name:
NOAA's National Ocean Service, Special Projects Office (SPO)
Contact info:
Contact:
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Address:
City:
Silver Spring

Administrative area:
Maryland, USA
Role:
Role code:
publisher
Presentation form:
Presentation form code:
mapDigital
Series:
Series:
Name:
CAF - Coastal Assessment Framework - Land and Water
Issue identification:
1999
Other citation details:
Estuarine Salinity Zones are one of the types of GIS shapefiles available for download as part of the Coastal Assessment Framework. Shapefiles are available either as regional data sets, or as a single data set for the contiguous United States.
Association Type:
Association type code:
crossReference
Aggregation Info:
AggregateInformation:
Aggregate Data Set Name:
Citation:
Title:
NOAA's Estuarine Living Marine Resources (ELMR) Data Base
Date:
Date:
Date:
2000
Date type:
Date type code:
publication
Cited responsible party:
Responsible party:
Organisation name:
Department of Commerce (DOC), National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), National Centers for Coastal Ocean Science (NCCOS), Center for Coastal Monitoring and Assessment (CCMA), Biogeography Program
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Role code:
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Silver Spring
Administrative area:
MD
Online Resource:
Online Resource:
Linkage:
URL:
http://coastalscience.noaa.gov/projects/detail?key=107
Role:
Role code:
publisher
Presentation form:
Other citation details:
Association Type:
Association type code:
crossReference
Spatial representation type:
Spatial representation type code:
vector
Language:
eng; USA
Topic category:
Topic category code:
biota
Topic category:
Topic category code:
environment
Topic category:
Topic category code:
oceans
Environment description:
Native Dataset Environment: Original data were in ArcView 3.2 shapefile format. These data were loaded into NCDDC's spatial data model as ArcSDE layers. Output format will be ESRI shapefiles. Technical Prerequisites: Customer must have software that can read ESRI shapefiles such as ArcGIS or ArcExplorer
Extent:
Extent:

Geographic element:
Geographic bounding box:
West bound longitude:
-97.744507
East bound longitude:
-80.124762
South bound latitude:
24.836125
North bound latitude:
30.874999
Temporal element:
Temporal extent:
Extent:
Time period:
Description:
ground condition
Begin date:
1998
End date:
now
Supplemental Information:

Return To Index

Content info:
Feature catalogue description:
Included with dataset:
true
Feature types:
Feature catalogue citation:
unknown

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Distribution info:
Distribution:
Distributor:
Distributor:
Distributor contact:
Responsible party:
Organisation name:
DOC/NOAA/NESDIS/NCEI > National Centers for Environmental Information, NESDIS, NOAA, U.S. Department of Commerce
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39529
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Hours of service:
Monday - Friday, 8am - 5pm, Central Standard Time
Role:
Role code:
distributor
Transfer options:
Digital transfer options:

Return To Index

Data quality info:
Data quality:
Scope:
unknown
Report:
Absolute external positional accuracy:
Name of measure:
Horizontal Positional Accuracy
Measure description:
Evaluation method description:
The geographic near-ocean extent of the zones, the shoreline and international boundaries in the geography come from NOAA's Coastal Assessment Framework
Result:
Quantitative result:
Value unit:
Base unit:

Identifier:
Units system: xlink: http://www.bipm.org/en/si/
Value:
Report:
Completeness commission:
Result:
unknown
Report:
Completeness omission:
Evaluation method description:
This 5-zone scheme is considered dynamic, because it takes into account the seasonal variations in salinity patterns and stratification that occur in most estuaries. 32 Gulf of Mexico estuaries are identified, including most of the major ones, but many smaller coastal embayments are not included. Note that not all estuaries contain all five zones.
Result:
unknown
Report:
Conceptual consistency:
Measure description:
This geographic representation of estuarine seasonal salinity zones is based on analysis of long-term salinity data for 33 Gulf of Mexico estuaries. Each estuary was subdivided into five zones between the head(s) of tide, and the seaward boundaries based on seasonal and depth-averaged salinities.
Result:
unknown
Report:
Non quantitative attribute accuracy:
Measure description:
The Gulf of Mexico 5-Zone Annual Average Salinity Digital Geography was developed using documented methods to process data from existing sources, and is as accurate as the original data sources cited in the National Estuarine Inventory Data Atlas (NOAA 1985).
Result:
inapplicable
Lineage:
Lineage:
Process step:
Process step:
Description:
Calendar months for the high and low salinity seasons as defined by "Salinity Characteristics of Gulf of Mexico Estuaries" (see cross-referenced citation) were added to the original seasonal salinity digital data (in ESRI shapefile format) by entering the months into new fields (hi_season, low_season) in the ESRI shapefile attribute table. The resulting digital data (in ESRI shapefile format) representing the salinity zones and seasons in various estuaries in the Gulf of Mexico has been loaded into the National Coastal Data Development Center's spatial data model. This model uses ESRI's ArcSDE software to help manage geospatial data. All original information was retained in the newly created ArcSDE layer.
Date and time:
Processor:
Responsible party:
Individual name:
Organisation name:
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Position name:
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Administrative area:
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Postal code:
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Hours of service:
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Contact instructions:
Role:
Role code:
processor
Source:
Source:
Source citation:
Citation:
Title:
salinity maps
Date:
unknown

Source:
Source:
Description:
Source Contribution: created digital mapsCD-ROM
Scale:
Representative fraction:
Denominator:
24000
Source citation:
Citation:
Title:
Products and Services for the Identification of Essential Fish Habitat in the Gulf of Mexico
Alternate title:
salinity maps
Date:
Date:
Date:
1998
Date type:
Date type code:
publication
Edition:
Cited responsible party:
Responsible party:
Organisation name:
NOAA/NOS Strategic Environmental Assessments Division
Role:
Role code:
resourceProvider
Presentation form:
Presentation form code:
mapDigital
Series:
Series:
Name:
Issue identification:
Other citation details:
NOAA/NMFS/Southeast Fisheries Science Center, and Gulf of Mexico Fisheries Management Council
Source extent:
Extent:
Temporal element:
Temporal extent:
Extent:
Time instant:
Description:
ground condition
Time position:
1998

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Metadata constraints:
Legal constraints:
Access constraints:
Restriction code:
otherRestrictions
Use constraints:
Restriction code:
otherRestrictions
Other constraints:
Metadata Access Constraints: none Metadata Use Constraints: none

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Metadata constraints:
Security constraints:
Classification:
Classification code:
http://www.isotc211.org/2005/resources/Codelist/gmxCodelists.xml#MD_ClassificationCode
Classification system:
unclassified - no restrictions on access or use

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Metadata maintenance:
Maintenance information:
Maintenance and update frequency:
unknown
Date of next update:
2012-12-31
Maintenance note:
This metadata was automatically generated from the FGDC Content Standard for Digital Geospatial Metadatastandard version Version 2, 1998 using the January 2013 version of the FGDC CSDGM to ISO 19115-2 transform. Metadata Review Date: 2012-10-26
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Responsible party:
Individual name:
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Organisation name:
National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), National Centers for Coastal Ocean Science (NCCOS), Center for Coastal Monitoring and Assessment (CCMA), Biogeography Branch
Position name:

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Role code:
custodian

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