Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: HYDRO (Hydrography Lines and Polygons)

Metadata:

- Identification_Information
- Data_Quality_Information
- Spatial_Data_Organization_Information
- Spatial_Reference_Information
- Entity_and_Attribute_Information
- Distribution_Information
- Metadata_Reference_Information

Identification_Information:
Citation:

Citation_Information:
Originator:

Originator:
Department of Homeland Security, United States Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.

Publication_Date:
201403

Title:
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: HYDRO (Hydrography Lines and Polygons)

Edition:
Second

Geospatial_Data_Presentation_Form:
vector digital data

Series_Information:
Series_Name:
None

Issue_Identification:
Delaware/New Jersey/Pennsylvania

Publication_Information:
Publication_Place:
Seattle, Washington

Publisher:
NOAA's Ocean Service, Office of Response and Restoration (OR&R), Emergency Response Division (ERD).

Other_Citation_Details:

Online_Linkage:
http://response.restoration.noaa.gov/esi

Online_Linkage:
http://response.restoration.noaa.gov/esi_download

Online_Linkage:
http://response.restoration.noaa.gov/esi_guidelines

Description:

Abstract:
This data set contains vector lines and polygons representing coastal hydrography used in the creation of the Environmental Sensitivity Index (ESI) for Delaware/New Jersey/Pennsylvania. The HYDRO data layer contains all annotation used in producing the atlas. The annotation features are categorized into three subclasses in order to simplify the mapping and quality control procedures: GEOG for geographic features, SOC for socioeconomic features, and HYDRO for water features. This data set comprises a portion of the ESI data for Delaware/New Jersey/Pennsylvania. 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 ESIL (ESI shoreline lines) and ESIP (ESI shoreline polygons) data layers, part of the larger Delaware/New Jersey/Pennsylvania ESI database, for additional ESI information.

**Purpose:**
The ESI data were collected, mapped, and digitized to provide environmental data for oil spill planning and response. The Clean Water Act with amendments by the Oil Pollution Act of 1990 requires response plans for immediate and effective protection of sensitive resources.

**Time_Period_of_Content:**
**Time_Period_Information:**
**Range_of_Dates/Times:**
**Beginning_Date:**
2010
**Ending_Date:**
2013
**Currentness_Reference:**
The data were compiled during 2013-2014. The currentness dates for the data range from 2010 to 2013 and are documented in the Lineage section.

**Status:**
**Progress:**
Complete
**Maintenance_and_Update_Frequency:**
None Scheduled

**Spatial_Domain:**
**Bounding_Coordinates:**
**West_BoundingCoordinate:**
-75.75000
**East_BoundingCoordinate:**
-74.03800
**North_BoundingCoordinate:**
40.23700
**South_BoundingCoordinate:**
38.37500

**Keywords:**
**Theme:**
**Theme_Keyword_Thesaurus:**
ISO 19115 Topic Category
**Theme_Keyword:**
biota
**Theme_Keyword:**
environment

**Theme:**
**Theme_Keyword_Thesaurus:**
None
**Theme_Keyword:**
Environmental Monitoring
**Theme_Keyword:**
ESI
**Theme_Keyword:**
Sensitivity maps
**Theme_Keyword:**
Coastal resources
**Theme_Keyword:**
Oil spill planning
**Theme_Keyword:**
Coastal Zone Management

Theme_Keyword:
Wildlife

Theme_Keyword:
Hydrography

Theme:

Theme_Keyword_Thesaurus:
NOS Data Explorer Topic Category

Theme_Keyword:
Environmental Monitoring

Place:

Place_Keyword_Thesaurus:
None

Place_Keyword:
Delaware/New Jersey/Pennsylvania

Access_Constraints:
None

Use_Constraints:

DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Management boundaries are not to be considered legal boundaries. Edges may have been altered for cartographic processes. Besides the above warnings, there are no use constraints on these data. Note that the ESI database should not be used to the exclusion of other pertinent data or information held by state or federal agencies or other organizations. Likewise, information contained in the database cannot be used in place of consultations with environmental, natural resource, and cultural resource agencies, or in place of field surveys. Recognize that the information contained in the ESI database represents known concentration areas or occurrences of natural, cultural, and human-use resources, but does not necessarily represent the full distribution or range of each species or resource. This is particularly important to recognize when considering potential impacts to protected resources, such as endangered species, wetlands, etc. Acknowledgment of the originators, publishers, contributors, and sources listed would be appreciated in products derived from these data.

Browse_Graphic:

Browse_Graphic_File_Name:

Browse_Graphic_File_Description:
Depicts the relationships between spatial data layers and attribute data tables for the Delaware/New Jersey/Pennsylvania ESI data.

Browse_Graphic_File_Type:
JPEG

Browse_Graphic:

Browse_Graphic_File_Name:

Browse_Graphic_File_Description:
Depicts the relationships between spatial data layers and desktop data tables for the Delaware/New Jersey/Pennsylvania ESI data.

Browse_Graphic_File_Type:
JPEG

Data_Set_Credit:
This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Office of Response and Restoration (OR&R), Emergency Response Division (ERD), Seattle, Washington; and The Department of Homeland Security, United States Coast Guard Office of Incident Management and Preparedness, Washington, D.C.

Native_Data_Set_Environment:
The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(R) (version 10.2) and SQL SERVER(R) (version 2005). The hardware configuration is PCs with Windows Operating System 7. The Spatial_Data_Organization Information section refers only to the source files in the ARC export format. The following files are included in the data set: benthic.e00, birds.e00, esil.e00, esip.e00, fish.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, socecon.e00, and t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut.e00, biofile.e00, biore.s00, breed.e00, breed_dt.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, sources.e00, species.e00, and status.e00.
A multi-stage error checking process is used to verify both attribute accuracy and logical consistency throughout data production. The process includes a standardized data entry methodology, hardcopy data review by in-house and external resource experts, a final Quality Assurance/Quality Control (QA/QC) process, and multiple automated logical consistency checks. Quantitative data (such as densities, counts, abundances, or concentrations) provided by resource experts for inclusion in the data set may vary widely in attribute accuracy, depending upon the methodology used to collect and compile such data. For a more detailed evaluation of source data attribute accuracy, contact the sources listed in the Lineage section.

A multi-stage error checking process, described in the above Attribute_Accuracy_Report, is used to verify both attribute accuracy and logical consistency throughout data production. This process includes multiple automated logical consistency checks that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and SQL SERVER(R) to ARC/INFO(R) consistencies. After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks.

These data represent linear and polygonal hydrography for Delaware/New Jersey/Pennsylvania. See also the ESIL (ESI shoreline lines) and ESIP (ESI shoreline polygons) data layers, part of the larger Delaware/New Jersey/Pennsylvania ESI database, for additional shoreline information.

The hydrography data set was developed from pre-existing digital data and reflects the positional accuracy of these original data. The horizontal positional accuracy of the 1:45,000 USGS topographic quads should conform to National Map Accuracy Standards at scales of 1:45,000. See the Lineage and Process_Description sections for more information on the original source data and how these data were integrated or manipulated to create the final data set.

GOOGLE EARTH
Publication_Date: 2013
Title: GOOGLE EARTH IMAGERY
Geospatial_Data_Presentation_Form: remote-sensing image
Online_Linkage: http://www.google.com/earth/
Type_of_Source_Media: online
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date: 2010
Ending_Date: 2013
Source_Currentness_Reference: DATE OF SURVEY
Source_Citation_Abbreviation: Src_0
Source_Contribution: HYDRO INFORMATION
Source_Citation: Citation_Information:
Originator: GOOGLE EARTH

2013
Ending_Date:
2013
Source_Currentness_Reference:
DATE OF PUBLICATION
Source_Citation_Abbreviation:
Src_4
Source_Contribution:
HYDRO INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator:
UNITED STATES DEPARTMENT OF COMMERCE (DOC), NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA), NATIONAL OCEAN SERVICE (NOS), NATIONAL GEODETIC SURVEY (NGS)
Publication_Date:
2012
Title:
CONTINUALLY UPDATED SHORELINE PRODUCT. SHORELINE MAPPING PROGRAM.
Geospatial_Data_Presentation_Form:
vector digital data
Publication_Information:
Publication_Place:
SILVER SPRING, MARYLAND
Publisher:
NOAA'S OCEAN SERVICE (NOS), NATIONAL GEODETIC SURVEY (NGS)
Online_Linkage:
http://www.ngs.noaa.gov/RSD/shoredata/NGS_Shoreline_Products.htm
Type_of_Source_Media:
online
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date:
1997
Ending_Date:
2012
Source_Currentness_Reference:
DATE OF SURVEY
Source_Citation_Abbreviation:
Src_5
Source_Contribution:
HYDRO INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator:
UNITED STATES FISH AND WILDLIFE SERVICE (USFWS)
Publication_Date:
2010
Title:
NATIONAL WETLANDS INVENTORY (NWI) - WETLANDS
Geospatial_Data_Presentation_Form:
vector digital data
Publication_Information:
Publication_Place:
WASHINGTON D.C.
Publisher:
U.S.FISH AND WILDLIFE SERVICE
The shoreline was derived from the integration of the U.S. Fish and Wildlife Service (FWS) National Wetlands Inventory (NWI) dataset (1972-2009); New Jersey Department of Environmental Protection (NJDEP) species based habitat dataset (2012); the National Oceanic and Atmospheric Administration (NOAA) Continually Updated Shoreline Product (CUSP) (1997-2012); and manual digitization at 1:4,000 from 2010-2011 BING aerial and 2010-2013 GOOGLE EARTH aerial imagery. The most recent shoreline was utilized where available. The above digital and/or hardcopy sources were compiled to create the HYDRO data layer. Depending on the type of source data, four general approaches are used for compiling the data layer: 1) hardcopy maps are digitized at their source scale; 2) digital data layers are evaluated and used "as is" or integrated with the other data sources; 3) overflight classifications are digitized from the scanned and registered hardcopy field maps; and/or 4) classifications are interpreted from oblique GPS referenced photography or video taken during the overflights. After the initial shoreline classification, these data are edgematched and checked for logical consistency errors. Review maps are plotted at 1:45,000 scale for verification of polygonal and linear attributes. See the Lineage section for additional information on the type of source data for this data layer. The ESI, biology, and human-use data are compiled into the standard ESI digital data format. A second set of interviews with participating resource experts are conducted to review the compiled data. If necessary, edits to the HYDRO data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.
Contact Electronic Mail Address:
orr.esi@noaa.gov

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:
13157

SDTS Terms Description:
SDTS Point and Vector Object Type:
Area point
Point and Vector Object Count:
13156

SDTS Terms Description:
SDTS Point and Vector Object Type:
Complete chain
Point and Vector Object Count:
17856

SDTS Terms Description:
SDTS Point and Vector Object Type:
Link
Point and Vector Object Count:
2720592

SDTS Terms Description:
SDTS Point and Vector Object Type:
Label point
Point and Vector Object Count:
331

SDTS Terms Description:
SDTS Point and Vector Object Type:
Node, planar graph
Point and Vector Object Count:
17838

Spatial Reference Information:
Horizontal Coordinate System Definition:
Geographic:
Latitude Resolution:
0.0000001
Longitude Resolution:
0.0000001
Geodetic Coordinate Units:
Decimal degrees
Geodetic Model:
Horizontal Datum Name:
North American Datum of 1983
Ellipsoid Name:
Geodetic Reference System 80
Semi-major Axis:
6378137.000000
Denominator of Flattening Ratio:
Entity and Attribute Information:

Detailed Description:

Entity Type:
  Entity_Type_Label: HYDRO.AAT
  Entity_Type_Definition: The HYDRO.AAT table contains attribute information for the vector lines representing linear hydrography features in the HYDRO data layer.
  Entity_Type_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: LINE
  Attribute_Definition: Type of geographic feature.
  Attribute_Definition_Source: NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain_Value: B
    Enumerated Domain_Value_Definition: Breakwater
    Enumerated Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain_Value: H
    Enumerated Domain_Value_Definition: Hydrography
    Enumerated Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain_Value: I
    Enumerated Domain_Value_Definition: Index
    Enumerated Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain_Value: S
    Enumerated Domain_Value_Definition: Shoreline
    Enumerated Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: SOURCE_ID
  Attribute_Definition: Source identifier that links to the SOURCES data table. This identifier indicates the source of a vector line segment.
**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Range Domain:**
- **Range Domain Minimum:** 1
- **Range Domain Maximum:** N

**Detailed Description:**

**Entity Type:**
- **Entity Type Label:** HYDRO.PAT
- **Entity Type Definition:** The HYDRO.PAT table contains attribute information for the vector polygons representing polygonal hydrography features in the HYDRO data layer.
- **Entity Type Definition Source:** NOAA ESI Guidelines

**Attribute:**
- **Attribute Label:** WATER_CODE
- **Attribute Definition:** Specifies a polygon as either water or land.
- **Attribute Definition Source:** NOAA ESI Guidelines
- **Attribute Domain Values:**
  - **Enumerated Domain:**
    - **Enumerated Domain Value:** L
      - **Enumerated Domain Value Definition:** Land
      - **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines
    - **Enumerated Domain Value:** W
      - **Enumerated Domain Value Definition:** Water
      - **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

**Detailed Description:**

**Entity Type:**
- **Entity Type Label:** ANNO.GEOG
- **Entity Type Definition:** The spatial data layer HYDRO contains label points representing annotation for geographic features.
- **Entity Type Definition Source:** NOAA ESI Guidelines

**Detailed Description:**

**Entity Type:**
- **Entity Type Label:** ANNO.HYDRO
- **Entity Type Definition:** The spatial data layer HYDRO contains label points representing annotation for water features.
- **Entity Type Definition Source:** NOAA ESI Guidelines

**Detailed Description:**

**Entity Type:**
- **Entity Type Label:** ANNO.SOC
**Entity Type Definition:**
The spatial data layer HYDRO contains label points representing annotation for socioeconomic features.

**Entity Type Definition Source:**
NOAA ESI Guidelines

**Detailed Description:**

**Entity Type:**

**Entity Type Label:** SOURCES

**Entity Type Definition:**
The data table SOURCES contains the primary sources used to create the ESI data set. See the BrowseGraphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

**Entity Type Definition Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute Label:** SOURCE_ID

**Attribute Definition:**
Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; SOURCE_ID and ESI_SOURCE in the ESIL and ESIP data layers; and SOURCE_ID in the HYDRO data layer.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Range Domain:**
- **Range Domain Minimum:** 1
- **Range Domain Maximum:** N

**Attribute:**

**Attribute Label:** ORIGINATOR

**Attribute Definition:**
Author or developer of source material or data set.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Unrepresentable Domain:**
Acceptable values change from atlas to atlas.

**Attribute:**

**Attribute Label:** DATE_PUB

**Attribute Definition:**
Date of source material, publication, or date of personal communication with expert source.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**
- **Enumerated Domain Value:** YYYYMM

**Enumerated Domain Value Definition:**
YYYY for year and optionally MM for month

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute Label:** TITLE

**Attribute Definition:**
Title of source material or data.

**Attribute Definition Source:**
NOAA ESI Guidelines

Attribute Domain Values:

Unrepresentable Domain:
Acceptable values change from atlas to atlas.

Attribute: Attribute Label: DATA_FORMAT
Attribute Definition: The format of the source material.
Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values: Unrepresentable Domain:
Acceptable values change from atlas to atlas.

Attribute: Attribute Label: PUB_PLACE
Attribute Definition: Publication place.
Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values: Unrepresentable Domain:
Acceptable values change from atlas to atlas.

Attribute: Attribute Label: PUBLISHER
Attribute Definition: Publisher.
Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values: Unrepresentable Domain:
Acceptable values change from atlas to atlas.

Attribute: Attribute Label: PUBLICATION
Attribute Definition: Additional citation information.
Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values: Unrepresentable Domain:
Acceptable values change from atlas to atlas.

Attribute: Attribute Label: ONLINE_LINK
Attribute Definition: Online computer resource URL.
Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values: Unrepresentable Domain:
Acceptable values change from atlas to atlas.

Attribute: Attribute Label: SCALE
Attribute Definition: Description of the source scale.
Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values: Unrepresentable Domain:
Acceptable values change from atlas to atlas.
NOAA ESI Guidelines

Attribute_Domain_Values:
Unrepresentable_Domain:
Acceptable values change from atlas to atlas.

Attribute:
Attribute_Label:
TIME_PERIOD
Attribute_Definition:
Date(s) of data collection that the source material is based upon.

Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Unrepresentable_Domain:
Acceptable values change from atlas to atlas.

Overview_Description:

Entity_and_Attribute_Overview:
In addition to the geographic data layers, one relational attribute or data tables are used to store information in the ESI data structure. (See the Browse_Graphic section for links to entity-relationship diagrams, which describe the relationships between the attribute tables in the ESI data structure.) The HYDRO data layer is linked to the data table, SOURCES, using the SOURCE_ID.

Entity_and_Attribute_Detail_Citation:
A complete description of entity types, attributes, and attribute values for ESI atlases can be found in the NOAA ESI Guidelines (http://response.restoration.noaa.gov/esi_guidelines).

Distribution_Information:
Distributor:
Contact_Information:
Contact_Person_Primary:
Contact_Person:
ESI Manager
Contact_Organization:
NOAA, Office of Response and Restoration
Contact_Address:
Address_Type:
Physical Address
Address:
7600 Sand Point Way N.E.
City:
Seattle
State_or_Province:
Washington
Postal_Code:
98115-6349
Contact_Voice_Telephone:
(206) 526-6944
Contact_Facsimile_Telephone:
(206) 526-6329
Contact_Electronic_Mail_Address:
orr.esi@noaa.gov

Resource_Description:
Downloadable Data

Distribution_Liability:
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format. If problems are encountered either in downloading the ESI data or if any file appears corrupted, please contact the ESI manager.
Custom Order Process:
Contact NOAA if you require the data be provided to you on CD/DVD. (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export files, Shapefiles, and a file Geodatabase (the recommended format). The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

Metadata Reference Information:
Metadata Date:
20140620
Metadata Contact:
Contact Information:
Contact Person Primary:
Contact Person:
ESI Manager
Contact Organization:
NOAA, Office of Response and Restoration
Contact Position:
GIS Manager
Contact Address:
Address Type:
Physical Address
Address:
7600 Sand Point Way, N.E.
City:
Seattle
State or Province:
Washington
Postal Code:
98115-6349
Contact Voice Telephone:
(206) 526-6944
Contact Facsimile Telephone:
(206) 526-6329
Contact Electronic Mail Address:
orr.esi@noaa.gov
Metadata Standard Name:
Content Standards for Digital Geospatial Metadata
Metadata Standard Version:
FGDC-STD-001-1998
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: ESIL (Environmental Sensitivity Index Shoreline Types - Lines)

Metadata:

- Identification Information
- Data Quality Information
- Spatial Data Organization Information
- Spatial Reference Information
- Entity and Attribute Information
- Distribution Information
- Metadata Reference Information

Identification Information:

Citation:

Citation Information:

Originator:

Originator:
Department of Homeland Security, United States Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.

Publication Date:
201403

Title:
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: ESIL (Environmental Sensitivity Index Shoreline Types - Lines)

Edition:
Second

Geospatial Data Presentation Form:
vector digital data

Series Information:

Series Name:
None

Issue Identification:
Delaware/New Jersey/Pennsylvania

Publication Information:

Publication Place:
Seattle, Washington

Publisher:
NOAA's Ocean Service, Office of Response and Restoration (OR&R), Emergency Response Division (ERD).

Other Citation Details:

Online Linkage:
http://response.restoration.noaa.gov/esi

Online Linkage:
http://response.restoration.noaa.gov/esi_download

Online Linkage:
http://response.restoration.noaa.gov/esi_guidelines

Description:

Abstract:
The ESIL data set contains vector lines representing the shoreline and coastal habitats of Delaware/New Jersey/Pennsylvania classified according to the Environmental Sensitivity Index (ESI) classification system. This data set comprises a portion of the ESI data for Delaware/New Jersey/Pennsylvania. 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 ESIP (ESI shoreline polygons) and HYDRO (Hydrography lines and polygons) data layers, part of the larger Delaware/New Jersey/Pennsylvania ESI database, for additional shoreline information.

**Purpose:**
The ESI data were collected, mapped, and digitized to provide environmental data for oil spill planning and response. The Clean Water Act with amendments by the Oil Pollution Act of 1990 requires response plans for immediate and effective protection of sensitive resources.

**Time_Period_of_Content:**
**Time_Period_Information:**
- **Range_of_Dates/Times:**
  - **Beginning_Date:** 2010
  - **Ending_Date:** 2013

**Currentness_Reference:**
The data were compiled during 2013-2014. The currentness dates for the data range from 2010 to 2013 and are documented in the Lineage section.

**Status:**
- **Progress:** Complete
- **Maintenance_and_Update_Frequency:** None Scheduled

**Spatial_Domain:**
- **Bounding_Coordinates:**
  - **West_BoundingCoordinate:** -75.75000
  - **East_BoundingCoordinate:** -74.03800
  - **North_BoundingCoordinate:** 40.23700
  - **South_BoundingCoordinate:** 38.37500

**Keywords:**

- **Theme:**
  - **Theme_Keyword_Thesaurus:** ISO 19115 Topic Category
  - **Theme_Keyword:** biota
  - **Theme_Keyword:** environment

- **Theme:**
  - **Theme_Keyword_Thesaurus:** None
  - **Theme_Keyword:** Environmental Monitoring
  - **Theme_Keyword:** ESI
  - **Theme_Keyword:** Sensitivity maps
  - **Theme_Keyword:** Coastal resources
  - **Theme_Keyword:** Oil spill planning
  - **Theme_Keyword:** Coastal Zone Management
  - **Theme_Keyword:**
Wildlife

**Theme:**

**Theme_Keyword_Thesaurus:**
NOS Data Explorer Topic Category

**Theme_Keyword:**
Environmental Monitoring

**Place:**

**Place_Keyword_Thesaurus:**
None

**Place_Keyword:**
Delaware/New Jersey/Pennsylvania

**Access_Constraints:**
None

**Use_Constraints:**
DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Management boundaries are not to be considered legal boundaries. Edges may have been altered for cartographic processes. Besides the above warnings, there are no use constraints on these data. Note that the ESI database should not be used to the exclusion of other pertinent data or information held by state or federal agencies or other organizations. Likewise, information contained in the database cannot be used in place of consultations with environmental, natural resource, and cultural resource agencies, or in place of field surveys. Recognize that the information contained in the ESI database represents known concentration areas or occurrences of natural, cultural, and human-use resources, but does not necessarily represent the full distribution or range of each species or resource. This is particularly important to recognize when considering potential impacts to protected resources, such as endangered species, wetlands, etc. Acknowledgement of the originators, publishers, contributors, and sources listed would be appreciated in products derived from these data.

**Browse_Graphic:**

**Browse_Graphic_File_Name:**

**Browse_Graphic_File_Description:**
Depicts the relationships between spatial data layers and attribute data tables for the Delaware/New Jersey/Pennsylvania ESI data.

**Browse_Graphic_File_Type:**
JPEG

**Browse_Graphic:**

**Browse_Graphic_File_Name:**

**Browse_Graphic_File_Description:**
Depicts the relationships between spatial data layers and desktop data tables for the Delaware/New Jersey/Pennsylvania ESI data.

**Browse_Graphic_File_Type:**
JPEG

**Data_Set_Credit:**
This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Office of Response and Restoration (OR&R), Emergency Response Division (ERD), Seattle, Washington; and The Department of Homeland Security, United States Coast Guard Office of Incident Management and Preparedness, Washington, D.C.

**Native_Data_Set_Environment:**
The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(R) (version 10.2) and SQL SERVER(R) (version 2005). The hardware configuration is PCs with Windows Operating System 7. The Spatial_Data_Organization Information section refers only to the source files in the ARC export format. The following files are included in the data set: benthic.e00, birds.e00, esil.e00, esip.e00, fish.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, soccecon.e00, and t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut.e00, biofile.e00, biorels.e00, breed.e00, breed_dt.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, sources.e00, species.e00, and status.e00.

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A multi-stage error checking process is used to verify both attribute accuracy and logical consistency throughout data production. The process includes a standardized data entry methodology, hardcopy data review by in-house and external resource experts, a final Quality Assurance/Quality Control (QA/QC) process, and multiple automated logical consistency checks. Quantitative data (such as densities, counts, abundances, or concentrations) provided by resource experts for inclusion in the data set may vary widely in attribute accuracy, depending upon the methodology used to collect and compile such data. For a more detailed evaluation of source data attribute accuracy, contact the sources listed in the Lineage section.

Logical_Accuracy_Report:
A multi-stage error checking process, described in the above Attribute_Accuracy_Report, is used to verify both attribute accuracy and logical consistency throughout data production. This process includes multiple automated logical consistency checks that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and SQL SERVER(R) to ARC/INFO(R) consistencies. After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks.

Completeness_Report:
These data represent coastal shorelines and habitats classified according to the Environmental Sensitivity Index (ESI) classification system. See also the ESIP (ESI shoreline polygons) and HYDRO (Hydrography lines and polygons) data layers, part of the larger Delaware/New Jersey/Pennsylvania ESI database, for additional shoreline information.

Positional_Accuracy:
Horizontal_Positional_Accuracy:

See the Lineage and Process_Description sections for more information on the original source data and how these data were integrated or manipulated to create the final data set.

Lineage:
Source_Information:
Source_Citation:
Citation_Information:
Originator:
GOOGLE EARTH
Publication_Date:
2013
Title:
GOOGLE EARTH IMAGERY
Geospatial_Data_Presentation_Form:
remote-sensing image
Online_Whole:
http://www.google.com/earth/
Type_of_Source_Media:
online
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date:
2010
Ending_Date:
2013
Source_Currentness_Reference:
DATE OF SURVEY
Source_Citation_Abbreviation:
Src_0
Source_Contribution:
ESIL INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator:
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF FISH AND WILDLIFE (NJDEP F&W) ENDANGERED NONGAME SPECIES PROGRAM (ENSP)
Publication_Date:
2012
Title:
Originator: PICTOMETRY INTERNATIONAL CORPORATION
Publication_Date: 2013
Title: OBLIQUE AERIAL PHOTOGRAPHY
Geospatial_Data_Presentation_Form: remote-sensing image
Publication_Information:
Publication_Place: ROCHESTER, NY
Publisher:
PICTOMETRY INTERNATIONAL CORPORATION
Other_Citation_Details: IMAGERY PRODUCED FOR MICROSOFT BING BY DIGITAL GLOBE, PICTOMETRY INTERNATIONAL CORP, AND NOKIA.
Online_Linkage: http://www.bing.com/maps/
Type_of_Source_Media: online
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date: 2010
Ending_Date: 2011
Source_Currentness_Reference:
DATE OF SURVEY
Source_Citation_Abbreviation:
Src_3
Source_Contribution:
ESIL INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: UNITED STATES FISH AND WILDLIFE SERVICE (USFWS)
Publication_Date: 2010
Title: NATIONAL WETLANDS INVENTORY (NWI) - WETLANDS
Geospatial_Data_Presentation_Form: vector digital data
Publication_Information:
Publication_Place: WASHINGTON D.C.
Publisher:
U.S.FISH AND WILDLIFE SERVICE
Online_Linkage: http://www.fws.gov/wetlands
Type_of_Source_Media: online
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date: 1972
Ending_Date: 2009
The shoreline was derived from the integration of the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) dataset (1972-2009); New Jersey Department of Environmental Protection (NJDEP) species based habitat dataset (2012); the National Oceanic and Atmospheric Administration (NOAA) Continually Updated Shoreline Product (CUSP) (1997-2012); and manual digitization at 1:4,000 from 2010-2011 BING aerial and 2010-2013 GOOGLE EARTH aerial imagery. The most recent shoreline was utilized where available. The intertidal shoreline habitats were classified based on 2010-2011 low-altitude oblique aerial photography from: BING Pictometry; 2010-2011 BING aerial imagery; and 2010-2013 GOOGLE EARTH aerial imagery. Shoreline features of 10 meters or greater in length were classified. In addition, wetland polygon datasets originally created by the FWS National Wetlands Inventory and the NJDEP were modified and updated to be used in conjunction with the ESI shoreline. Where necessary, multiple types were described for each shoreline segment. See the Lineage section for additional information on the type of source data for this data layer. The ESI, biology, and human-use data are compiled into the standard ESI digital data format. A second set of interviews with participating resource experts are conducted to review the compiled data. If necessary, edits to the ESIL data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.

Process Date: 201403

Process Contact:

Contact Information:

Contact Organization Primary:

Contact Organization:

NOAA, Office of Response and Restoration

Contact Person:

ESI Manager

Contact Address:

Address Type:

Physical address

Address:

7600 Sand Point Way, N.E.

City:

Seattle

State or Province:

Washington

Postal Code:

98115-6349

Contact Voice Telephone:

(206) 526-6944

Contact Facsimile Telephone:

(206) 526-6329

Contact Electronic Mail Address:

orr.esi@noaa.gov
Point and Vector Object Count:
25602

SDTS Terms Description:
SDTS Point and Vector Object Type:
Node, planar graph
Point and Vector Object Count:
2266191

Spatial Reference Information:
Horizontal Coordinate System Definition:
Geographic:
Latitude Resolution:
0.0000001
Longitude Resolution:
0.0000001
Geographic Coordinate Units:
Decimal degrees
Geodetic Model:
Horizontal Datum Name:
North American Datum of 1983
Ellipsoid Name:
Geodetic Reference System 80
Semi-major Axis:
6378137.000000
Denominator of Flattening Ratio:
298.257222

Entity and Attribute Information:
Detailed Description:
Entity Type:
Entity Type Label:
ESIL.AAT
Entity Type Definition:
The ESIL.AAT table contains attribute information for the vector lines representing linear shoreline features with ESI classification.
Entity Type Definition Source:
NOAA ESI Guidelines
Attribute:
Attribute Label:
ESI
Attribute Definition:
The item ESI contains values representing the ESI shoreline type. In many cases shorelines are ranked with multiple codes, such as "6B/3A" (listed landward to seaward from left to right). The first code, "6B", is the most landward shoreline type and the second code, "3A", is the shoreline type closest to the water. Singular shoreline types are listed below. No multiple codes are listed, but all multiple codes included in the data set can be assembled from the codes described. 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.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
1B

Enumerated Domain Value Definition:
Exposed, Solid Man-made Structures

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
2A

Enumerated Domain Value Definition:
Wave-cut Platforms in Clay, Mud, or Bedrock

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
2B

Enumerated Domain Value Definition:
Exposed Scarps and Steep Slopes in Clay or Mud

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
3A

Enumerated Domain Value Definition:
Fine- to Medium-grained Sand Beaches

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
3B

Enumerated Domain Value Definition:
Scarps and Steep Slopes in Sand

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
4

Enumerated Domain Value Definition:
Coarse-grained Sand Beaches

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
5

Enumerated Domain Value Definition:
Mixed Sand and Gravel Beaches

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines
Enumerated_Domain:
    Enumerated_Domain_Value:
        6A
Enumerated_Domain_Value_Definition:
    Gravel Beaches
Enumerated_Domain_Value_Definition_Source:
    NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
    Enumerated_Domain_Value:
        6B
Enumerated_Domain_Value_Definition:
    Riprap
Enumerated_Domain_Value_Definition_Source:
    NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
    Enumerated_Domain_Value:
        7
Enumerated_Domain_Value_Definition:
    Exposed Tidal Flats
Enumerated_Domain_Value_Definition_Source:
    NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
    Enumerated_Domain_Value:
        8A
Enumerated_Domain_Value_Definition:
    Sheltered Scarps in Clay or Mud
Enumerated_Domain_Value_Definition_Source:
    NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
    Enumerated_Domain_Value:
        8B
Enumerated_Domain_Value_Definition:
    Sheltered, Solid Man-made Structures
Enumerated_Domain_Value_Definition_Source:
    NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
    Enumerated_Domain_Value:
        8C
Enumerated_Domain_Value_Definition:
    Sheltered Riprap
Enumerated_Domain_Value_Definition_Source:
    NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
    Enumerated_Domain_Value:
        8E
Enumerated_Domain_Value_Definition:
    Peat Shorelines
Enumerated_Domain_Value_Definition_Source:
    NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
    Enumerated_Domain_Value:
        9A
Enumerated_Domain_Value_Definition:
Sheltered Tidal Flats

*Enumerated_Domain_Value_Definition_Source*: NOAA ESI Guidelines

**Attribute_Domain_Values**:

**Enumerated_Domain**:

**Enumerated_Domain_Value**: 9B

*Enumerated_Domain_Value_Definition*: Vegetated Low Banks

*Enumerated_Domain_Value_Definition_Source*: NOAA ESI Guidelines

**Attribute_Domain_Values**:

**Enumerated_Domain**:

**Enumerated_Domain_Value**: 10A

*Enumerated_Domain_Value_Definition*: Salt- and Brackish-water Marshes

*Enumerated_Domain_Value_Definition_Source*: NOAA ESI Guidelines

**Attribute_Domain_Values**:

**Enumerated_Domain**:

**Enumerated_Domain_Value**: 10B

*Enumerated_Domain_Value_Definition*: Freshwater Marshes

*Enumerated_Domain_Value_Definition_Source*: NOAA ESI Guidelines

**Attribute_Domain_Values**:

**Enumerated_Domain**:

**Enumerated_Domain_Value**: 10C

*Enumerated_Domain_Value_Definition*: Swamps

*Enumerated_Domain_Value_Definition_Source*: NOAA ESI Guidelines

**Attribute_Domain_Values**:

**Enumerated_Domain**:

**Enumerated_Domain_Value**: 10D

*Enumerated_Domain_Value_Definition*: Scrub-Shrub Wetlands

*Enumerated_Domain_Value_Definition_Source*: NOAA ESI Guidelines

**Attribute_Domain_Values**:

**Enumerated_Domain**:

**Enumerated_Domain_Value**: U

*Enumerated_Domain_Value_Definition*: Unranked

*Enumerated_Domain_Value_Definition_Source*: NOAA ESI Guidelines

**Attribute**:

**Attribute_Label**: LINE

**Attribute_Definition**: Type of geographic feature.

**Attribute_Definition_Source**: NOAA ESI Guidelines

**Attribute_Domain_Values**:

**Enumerated_Domain**:
Enumerated_Domain_Value:
B
Enumerated_Domain_Value_Definition:
Breakwater
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
    H
  Enumerated_Domain_Value_Definition:
    Hydrography
  Enumerated_Domain_Value_Definition_Source:
    NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
    S
  Enumerated_Domain_Value_Definition:
    Shoreline
  Enumerated_Domain_Value_Definition_Source:
    NOAA ESI Guidelines

Attribute:
  Attribute_Label:
    SOURCE_ID
  Attribute_Definition:
    Source identifier that links to the SOURCES data table. This identifier indicates the source of a vector line segment.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum:
        1
      Range_Domain_Maximum:
        N

Attribute:
  Attribute_Label:
    ENVIR
  Attribute_Definition:
    Type of regional environment.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        E
      Enumerated_Domain_Value_Definition:
        Estuarine
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines

Attribute:
  Attribute_Label:
    ESI_SOURCE
  Attribute_Definition:
    Source identifier that links to the SOURCES data table. This identifier indicates the source of the ESI classification of a line segment. Vector features that were not surveyed or do not qualify for an ESI classification have a value of -1.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
Detailed_Description:
Entity_Type:
  Entity_Type_Label:
    SOURCES
  Entity_Type_Definition:
    The data table SOURCES contains the primary sources used to create the ESI data set. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.
  Entity_Type_Definition_Source:
    NOAA ESI Guidelines

Attribute:
  Attribute_Label:
    SOURCE_ID
  Attribute_Definition:
    Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; SOURCE_ID and ESI_SOURCE in the ESIL and ESIP data layers; and SOURCE_ID in the HYDRO data layer.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum:
        1
      Range_Domain_Maximum:
        N

Attribute:
  Attribute_Label:
    ORIGINATOR
  Attribute_Definition:
    Author or developer of source material or data set.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Unrepresentable_Domain:
      Acceptable values change from atlas to atlas.

Attribute:
  Attribute_Label:
    DATE_PUB
  Attribute_Definition:
    Date of source material, publication, or date of personal communication with expert source.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        YYYYMM
      Enumerated_Domain_Value_Definition:
        YYYY for year and optionally MM for month
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines

Attribute:
  Attribute_Label:
    TITLE
Title of source material or data.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**
Unrepresentable Domain:
Acceptable values change from atlas to atlas.

**Attribute:**

**Attribute Label:** DATA_FORMAT

**Attribute Definition:**
The format of the source material.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**
Unrepresentable Domain:
Acceptable values change from atlas to atlas.

**Attribute:**

**Attribute Label:** PUB_PLACE

**Attribute Definition:**
Publication place.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**
Unrepresentable Domain:
Acceptable values change from atlas to atlas.

**Attribute:**

**Attribute Label:** PUBLISHER

**Attribute Definition:**
Publisher.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**
Unrepresentable Domain:
Acceptable values change from atlas to atlas.

**Attribute:**

**Attribute Label:** PUBLICATION

**Attribute Definition:**
Additional citation information.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**
Unrepresentable Domain:
Acceptable values change from atlas to atlas.

**Attribute:**

**Attribute Label:** ONLINE_LINK

**Attribute Definition:**
Online computer resource URL.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**
Unrepresentable Domain:
Acceptable values change from atlas to atlas.

**Attribute:**

**Attribute Label:** SCALE

**Attribute Definition:**
Description of the source scale.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**
- **Unrepresentable Domain:**
  Acceptable values change from atlas to atlas.

**Attribute:**

**Attribute Label:**
TIME_PERIOD

**Attribute Definition:**
Date(s) of data collection that the source material is based upon.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**
- **Unrepresentable Domain:**
  Acceptable values change from atlas to atlas.

**Overview Description:**

**Entity and Attribute Overview:**
In addition to the geographic data layers, relational attribute or data tables are used to store information in the ESI data structure. (See the Browse Graphic sections for links to entity-relationship diagrams, which describe the relationships between the attribute tables in the ESI data structure.) The ESIL data layer is linked to the data table, SOURCES, using SOURCE_ID and ESI_SOURCE.

**Entity and Attribute Detail Citation:**
A complete description of entity types, attributes, and attribute values for ESI atlases can be found in the NOAA ESI Guidelines (http://response.restoration.noaa.gov/esi_guidelines).

---

**Distribution Information:**

**Distributor:**

**Contact Information:**

**Contact Person Primary:**

**Contact Person:**
ESI Manager

**Contact Organization:**
NOAA, Office of Response and Restoration

**Contact Address:**

**Address Type:**
Physical Address

**Address:**
7600 Sand Point Way N.E.

**City:**
Seattle

**State or Province:**
Washington

**Postal Code:**
98115-6349

**Contact Voice Telephone:**
(206) 526-6944

**Contact Facsimile Telephone:**
(206) 526-6329

**Contact Electronic Mail Address:**
orr.esi@noaa.gov

**Resource Description:**
Downloadable Data

**Distribution Liability:**
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-
readable format. If problems are encountered either in downloading the ESI data or if any file appears corrupted, please contact the ESI manager.

Custom_Order_Process:
Contact NOAA if you require the data be provided to you on CD/DVD. (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export files, Shapefiles, and a file Geodatabase (the recommended format). The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

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Metadata_Reference_Information:
Metadata_Date:
20140620
Metadata_Contact:
Contact Information:
Contact Person Primary:
Contact Person:
ESI Manager
Contact Organization:
NOAA, Office of Response and Restoration
Contact Position:
GIS Manager
Contact Address:
Address Type:
Physical Address
Address:
7600 Sand Point Way, N.E.
City:
Seattle
State or Province:
Washington
Postal Code:
98115-6349
Contact Voice Telephone:
(206) 526-6944
Contact Facsimile Telephone:
(206) 526-6329
Contact Electronic Mail Address:
orr.esi@noaa.gov

Metadata_Standard_Name:
Content Standards for Digital Geospatial Metadata

Metadata_Standard_Version:
FGDC-STD-001-1998

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Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: ESIP (Environmental Sensitivity Index Shoreline Types - Polygons)

Metadata:

- Identification Information
- Data Quality Information
- Spatial Data Organization Information
- Spatial Reference Information
- Entity and Attribute Information
- Distribution Information
- Metadata Reference Information

Identification Information:

Citation Information:

Originator:

Originator:
Department of Homeland Security, United States Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.

Publication Date:
201403

Title:
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: ESIP (Environmental Sensitivity Index Shoreline Types - Polygons)

Edition:
Second

Geospatial Data Presentation Form:
vector digital data

Series Information:

Series Name:
None

Issue Identification:
Delaware/New Jersey/Pennsylvania

Publication Information:

Publication Place:
Seattle, Washington

Publisher:
NOAA's Ocean Service, Office of Response and Restoration (OR&R), Emergency Response Division (ERD).

Other Citation Details:

Online Linkage:
http://response.restoration.noaa.gov/esi

Online Linkage:
http://response.restoration.noaa.gov/esi_download

Online Linkage:
http://response.restoration.noaa.gov/esi_guidelines

Description:

Abstract:
The ESIP data set contains vector polygons representing the shoreline and coastal habitats of Delaware/New Jersey/Pennsylvania classified according to the Environmental Sensitivity Index (ESI) classification system. This data set comprises a portion of the ESI data for Delaware/New Jersey/Pennsylvania. 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 ESIL (ESI shoreline lines) and HYDRO (Hydrography lines and polygons) data layers, part of the larger Delaware/New Jersey/Pennsylvania ESI database, for additional shoreline information.

**Purpose:**
The ESI data were collected, mapped, and digitized to provide environmental data for oil spill planning and response. The Clean Water Act with amendments by the Oil Pollution Act of 1990 requires response plans for immediate and effective protection of sensitive resources.

**Time_Period_of_Content:**
**Time_Period_Information:**
**Range_of_Dates/Times:**
**Beginning_Date:**
2010
**Ending_Date:**
2013

**Currentness_Reference:**
The data were compiled during 2013-2014. The currentness dates for the data range from 2010 to 2013 and are documented in the Lineage section.

**Status:**
**Progress:**
Complete
**Maintenance_and_Update_Frequency:**
None Scheduled

**Spatial_Domain:**
**Bounding_Coordinates:**
**West_BoundingCoordinate:**
-75.75000
**East_BoundingCoordinate:**
-74.03800
**North_BoundingCoordinate:**
40.23700
**South_BoundingCoordinate:**
38.37500

**Keywords:**
**Theme:**
**Theme_Keyword_Thesaurus:**
ISO 19115 Topic Category
**Theme_Keyword:**
biota
**Theme_Keyword:**
environment

**Theme:**
**Theme_Keyword_Thesaurus:**
None
**Theme_Keyword:**
Environmental Monitoring
**Theme_Keyword:**
ESI
**Theme_Keyword:**
Sensitivity maps
**Theme_Keyword:**
Coastal resources
**Theme_Keyword:**
Oil spill planning
**Theme_Keyword:**
Coastal Zone Management
**Theme_Keyword:**
Wildlife

**Theme:**

**Theme_Keyword_Thesaurus:**
NOS Data Explorer Topic Category

**Theme_Keyword:**
Environmental Monitoring

**Place:**

**Place_Keyword_Thesaurus:**
None

**Place_Keyword:**
Delaware/New Jersey/Pennsylvania

**Access_Constraints:**
None

**Use_Constraints:**
DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Management boundaries are not to be considered legal boundaries. Edges may have been altered for cartographic processes. Besides the above warnings, there are no use constraints on these data. Note that the ESI database should not be used to the exclusion of other pertinent data or information held by state or federal agencies or other organizations. Likewise, information contained in the database cannot be used in place of consultations with environmental, natural resource, and cultural resource agencies, or in place of field surveys. Recognize that the information contained in the ESI database represents known concentration areas or occurrences of natural, cultural, and human-use resources, but does not necessarily represent the full distribution or range of each species or resource. This is particularly important to recognize when considering potential impacts to protected resources, such as endangered species, wetlands, etc. Acknowledgment of the originators, publishers, contributors, and sources listed would be appreciated in products derived from these data.

**Browse_Graphic:**

**Browse_Graphic_File_Name:**

**Browse_Graphic_File_Description:**
Depicts the relationships between spatial data layers and attribute data tables for the Delaware/New Jersey/Pennsylvania ESI data.

**Browse_Graphic_File_Type:**
JPEG

**Browse_Graphic:**

**Browse_Graphic_File_Name:**

**Browse_Graphic_File_Description:**
Depicts the relationships between spatial data layers and desktop data tables for the Delaware/New Jersey/Pennsylvania ESI data.

**Browse_Graphic_File_Type:**
JPEG

**Data_Set_Credit:**
This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Office of Response and Restoration (OR&R), Emergency Response Division (ERD), Seattle, Washington; and The Department of Homeland Security, United States Coast Guard Office of Incident Management and Preparedness, Washington, D.C.

**Native_Data_Set_Environment:**
The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(R) (version 10.2) and SQL SERVER(R) (version 2005). The hardware configuration is PCs with Windows Operating System 7. The Spatial Data Organization Information section refers only to the source files in the ARC export format. The following files are included in the data set: benthic.e00, birds.e00, esil.e00, esip.e00, fish.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, soccecon.e00, and t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut.e00, biofile.e00, biores.e00, breed.e00, breed_dt.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, sources.e00, species.e00, and status.e00.

**Data_Quality_Information:**

**Attribute_Accuracy:**

**Attribute_Accuracy_Report:**
A multi-stage error checking process is used to verify both attribute accuracy and logical consistency throughout data production. The process includes a standardized data entry methodology, hardcopy data review by in-house and external resource experts, a final Quality Assurance/Quality Control (QA/QC) process, and multiple automated logical consistency checks. Quantitative data (such as densities, counts, abundances, or concentrations) provided by resource experts for inclusion in the data set may vary widely in attribute accuracy, depending upon the methodology used to collect and compile such data. For a more detailed evaluation of source data attribute accuracy, contact the sources listed in the Lineage section.

**Logical Consistency Report:**
A multi-stage error checking process, described in the above Attribute Accuracy Report, is used to verify both attribute accuracy and logical consistency throughout data production. This process includes multiple automated logical consistency checks that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and SQL SERVER(R) to ARC/INFO(R) consistencies. After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks.

**Completeness Report:**
These data represent coastal shorelines and habitats classified according to the Environmental Sensitivity Index (ESI) classification system. See also the ESIL (ESI shoreline lines) and HYDRO (Hydrography lines and polygons) data layers, part of the larger Delaware/New Jersey/Pennsylvania ESI database, for additional shoreline information.

**Positional Accuracy:**

**Horizontal Positional Accuracy:**

See the Lineage and Process Description sections for more information on the original source data and how these data were integrated or manipulated to create the final data set.

**Lineage:**

**Source Information:**

**Source Citation:**

**Citation Information:**

**Originator:**

GOOGLE EARTH

**Publication Date:**

2013

**Title:**

GOOGLE EARTH IMAGERY

**Geospatial Data Presentation Form:**

remote-sensing image

**Online Linkage:**

http://www.google.com/earth/

**Type of Source Media:**

online

**Source Time Period of Content:**

**Time Period Information:**

**Range of Dates/Times:**

**Beginning Date:**

2010

**Ending Date:**

2013

**Source Currentness Reference:**

DATE OF SURVEY

**Source Citation Abbreviation:**

Src_0

**Source Contribution:**

ESIP INFORMATION

**Source Information:**

**Source Citation:**

**Citation Information:**

**Originator:**

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF FISH AND WILDLIFE (NJDEP F&W) ENDANGERED NONGAME SPECIES PROGRAM (ENSP)

**Publication Date:**

2012

**Title:**
Originator:
PICTOMETRY INTERNATIONAL CORPORATION
Publication_Date:
2013
Title:
OBLIQUE AERIAL PHOTOGRAPHY
Geospatial_Data_Presentation_Form:
remote-sensing image
Publication_Information:
Publication_Place:
ROCHESTER, NY
Publisher:
PICTOMETRY INTERNATIONAL CORPORATION
Other_Citation_Details:
IMAGERY PRODUCED FOR MICROSOFT BING BY DIGITAL GLOBE, PICTOMETRY INTERNATIONAL CORP, AND NOKIA.
Online_Linkage:
http://www.bing.com/maps/
Type_of_Source_Media:
one
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date:
2010
Ending_Date:
2011
Source_Currentness_Reference:
DATE OF SURVEY
Source_Citation_Abbreviation:
Src_3
Source_Contribution:
ESIP INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator:
UNITED STATES FISH AND WILDLIFE SERVICE (USFWS)
Publication_Date:
2010
Title:
NATIONAL WETLANDS INVENTORY (NWI) - WETLANDS
Geospatial_Data_Presentation_Form:
vector digital data
Publication_Information:
Publication_Place:
WASHINGTON D.C.
Publisher:
U.S.FISH AND WILDLIFE SERVICE
Online_Linkage:
http://www.fws.gov/wetlands
Type_of_Source_Media:
one
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date:
1972
Ending_Date:
2009
The shoreline was derived from the integration of the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) dataset (1972-2009); New Jersey Department of Environmental Protection (NJDEP) species based habitat dataset (2012); the National Oceanic and Atmospheric Administration (NOAA) Continually Updated Shoreline Product (CUSP) (1997-2012); and manual digitization at 1:4,000 from 2010-2011 BING aerial and 2010-2013 GOOGLE EARTH aerial imagery. The most recent shoreline was utilized where available. The intertidal shoreline habitats were classified based on 2010-2011 low-altitude oblique aerial photography from: BING Pictometry; 2010-2011 BING aerial imagery; and 2010-2013 GOOGLE EARTH aerial imagery. Shoreline features of 10 meters or greater in length were classified. In addition, wetland polygon datasets originally created by the FWS National Wetlands Inventory and the NJDEP were modified and updated to be used in conjunction with the ESI shoreline. Where necessary, multiple types were described for each shoreline segment. See the Lineage section for additional information on the type of source data for this data layer. The ESI, biology, and human-use data are compiled into the standard ESI digital data format. A second set of interviews with participating resource experts are conducted to review the compiled data. If necessary, edits to the ESIP data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.

Process Contact:
Contact Information:
Contact Organization Primary:
Contact Organization:
NOAA, Office of Response and Restoration
Contact Person:
ESI Manager
Contact Address:
Address Type:
Physical address
Address:
7600 Sand Point Way, N.E.
City:
Seattle
State or Province:
Washington
Postal Code:
98115-6349
Contact Voice Telephone:
(206) 526-6944
Contact Facsimile Telephone:
(206) 526-6329
Contact Electronic Mail Address:
orr.esi@noaa.gov
**Point and Vector Object Count:**
- **SDTS_Terms_Description:**
  - **Area point:** 28632

**SDTS_Point_and_Vector_Object_Type:**
- **Complete chain:** 28631

**SDTS_Terms_Description:**
- **Link:** 59302

**SDTS_Point_and_Vector_Object_Type:**
- **Node, planar graph:** 3838702

**SDTS_Terms_Description:**
- **Node, planar graph:** 50169

---

**Spatial Reference Information:**

**Horizontal Coordinate System Definition:**
- **Geographic:**
  - **Latitude Resolution:** 0.0000001
  - **Longitude Resolution:** 0.0000001
- **Geographic Coordinate Units:**
  - **Decimal degrees**

**Geodetic Model:**
- **Horizontal Datum Name:**
  - North American Datum of 1983
- **Ellipsoid Name:**
  - Geodetic Reference System 80
- **Semi-major Axis:**
  - 6378137.000000
- **Denominator of Flattening Ratio:**
  - 298.257222

---

**Entity and Attribute Information:**

**Detailed_Description:**
- **Entity Type:**
  - **Entity Type Label:**
    - ESIP.PAT
  - **Entity Type Definition:**
    - The ESIP.PAT table contains attribute information for the vector polygons representing polygonal features with ESI classification.
  - **Entity Type Definition Source:**
    - NOAA ESI Guidelines

**Attribute:**
- **Attribute Label:**
  - ESI
Attribute Definition:
The item ESI contains values representing the ESI polygon type.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value:
  7
  Enumerated Domain Value Definition:
  Exposed Tidal Flats
  Enumerated Domain Value Definition Source:
  NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value:
  9A
  Enumerated Domain Value Definition:
  Sheltered Tidal Flats
  Enumerated Domain Value Definition Source:
  NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value:
  10A
  Enumerated Domain Value Definition:
  Salt- and Brackish-water Marshes
  Enumerated Domain Value Definition Source:
  NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value:
  10B
  Enumerated Domain Value Definition:
  Freshwater Marshes
  Enumerated Domain Value Definition Source:
  NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value:
  10C
  Enumerated Domain Value Definition:
  Swamps
  Enumerated Domain Value Definition Source:
  NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value:
  10D
  Enumerated Domain Value Definition:
  Scrub-Shrub Wetlands
  Enumerated Domain Value Definition Source:
  NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value:
  U
  Enumerated Domain Value Definition:
  Unranked
  Enumerated Domain Value Definition Source:
  NOAA ESI Guidelines
Attribute:
Attribute_Label:
    WATER_CODE
Attribute_Definition:
    Specifies a polygon as either water or land.
Attribute_Definition_Source:
    NOAA ESI Guidelines
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value:
            L
        Enumerated_Domain_Value_Definition:
            Land
        Enumerated_Domain_Value_Definition_Source:
            NOAA ESI Guidelines
    Enumerated_Domain:
        Enumerated_Domain_Value:
            W
        Enumerated_Domain_Value_Definition:
            Water
        Enumerated_Domain_Value_Definition_Source:
            NOAA ESI Guidelines
Attribute:
Attribute_Label:
    ENVIR
Attribute_Definition:
    Type of regional environment.
Attribute_Definition_Source:
    NOAA ESI Guidelines
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value:
            E
        Enumerated_Domain_Value_Definition:
            Estuarine
        Enumerated_Domain_Value_Definition_Source:
            NOAA ESI Guidelines
    Enumerated_Domain:
        Enumerated_Domain_Value:
            U
        Enumerated_Domain_Value_Definition:
            Unclassified
        Enumerated_Domain_Value_Definition_Source:
            NOAA ESI Guidelines
Attribute:
Attribute_Label:
    ESI_SOURCE
Attribute_Definition:
    Source identifier that links to the SOURCES data table. This identifier indicates the source of the ESI classification of a polygon. Polygon features that do not have an associated ESI value are given an ESI_SOURCE value of -1.
Attribute_Definition_Source:
    NOAA ESI Guidelines
Attribute_Domain_Values:
    Range_Domain:
        Range_Domain_Minimum:
            1
        Range_Domain_Maximum:
Detailed_Description:

Entity_Type:

Entity_Type_Label: SOURCES

Entity_Type_Definition: The data table SOURCES contains the primary sources used to create the ESI data set. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

Entity_Type_Definition_Source: NOAA ESI Guidelines

Attribute:

Attribute_Label: SOURCE_ID

Attribute_Definition: Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; SOURCE_ID and ESI_SOURCE in the ESIL and ESIP data layers; and SOURCE_ID in the HYDRO data layer.

Attribute_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 1

Range_Domain_Maximum: N

Attribute:

Attribute_Label: ORIGINATOR

Attribute_Definition: Author or developer of source material or data set.

Attribute_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: DATE_PUB

Attribute_Definition: Date of source material, publication, or date of personal communication with expert source.

Attribute_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: YYYYMM

Enumerated_Domain_Value_Definition: YYYY for year and optionally MM for month

Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:

Attribute_Label: TITLE

Attribute_Definition: Title of source material or data.

Attribute_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:

Unrepresentable_Domain:
Acceptable values change from atlas to atlas.

Attribute

Attribute_Label:
DATA_FORMAT
Attribute_Definition:
The format of the source material.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Unrepresentable_Domain:
Acceptable values change from atlas to atlas.

Attribute

Attribute_Label:
PUB_PLACE
Attribute_Definition:
Publication place.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Unrepresentable_Domain:
Acceptable values change from atlas to atlas.

Attribute

Attribute_Label:
PUBLISHER
Attribute_Definition:
Publisher.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Unrepresentable_Domain:
Acceptable values change from atlas to atlas.

Attribute

Attribute_Label:
PUBLICATION
Attribute_Definition:
Additional citation information.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Unrepresentable_Domain:
Acceptable values change from atlas to atlas.

Attribute

Attribute_Label:
ONLINE_LINK
Attribute_Definition:
Online computer resource URL.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Unrepresentable_Domain:
Acceptable values change from atlas to atlas.

Attribute

Attribute_Label:
SCALE
Attribute_Definition:
Description of the source scale.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Unrepresentable_Domain:
Acceptable values change from atlas to atlas.
Acceptable values change from atlas to atlas.

**Attribute:**

*Attribute Label:* TIME_PERIOD  
*Attribute Definition:* Date(s) of data collection that the source material is based upon.  
*Attribute Definition Source:* NOAA ESI Guidelines  
*Attribute Domain Values:* Unrepresentable_Domain: Acceptable values change from atlas to atlas.

**Overview Description:**

**Entity and Attribute Overview:** In addition to the geographic data layers, relational attribute or data tables are used to store information in the ESI data structure. (See the Browse Graphic section for links to entity-relationship diagrams, which describe the relationships between the attribute tables in the ESI data structure.) The ESIP data layer is linked to the data table, SOURCES, using SOURCE_ID and ESI_SOURCE.

**Entity and Attribute Detail Citation:** A complete description of entity types, attributes, and attribute values for ESI atlases can be found in the NOAA ESI Guidelines (http://response.restoration.noaa.gov/esi_guidelines).

**Distribution Information:**  
**Distributor:**  
**Contact Information:**  
*Contact Person Primary:*  
*Contact Person:*  
ESI Manager  
*Contact Organization:*  
NOAA, Office of Response and Restoration  
*Contact Address:*  
*Address Type:* Physical Address  
*Address:*  
7600 Sand Point Way N.E.  
*City:*  
Seattle  
*State or Province:*  
Washington  
*Postal Code:*  
98115-6349  
*Contact Voice Telephone:*  
(206) 526-6944  
*Contact Facsimile Telephone:*  
(206) 526-6329  
**Resource Description:** Downloadable Data  
**Distribution Liability:** Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format. If problems are encountered either in downloading the ESI data or if any file appears corrupted, please contact the ESI manager.

**Custom Order Process:** Contact NOAA if you require the data be provided to you on CD/DVD. (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export files, Shapefiles, and a file Geodatabase (the recommended format). The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat
file format. This metadata document includes information on both of these database formats.

**Metadata_Reference_Information:**

**Metadata_Date:**

20140620

**Metadata_Contact:**

**Contact_Information:**

**Contact_Person_Primary:**

**Contact_Person:**

ESI Manager

**Contact_Organization:**

NOAA, Office of Response and Restoration

**Contact_Position:**

GIS Manager

**Contact_Address:**

**Address_Type:**

Physical Address

**Address:**

7600 Sand Point Way, N.E.

**City:**

Seattle

**State_or_Province:**

Washington

**Postal_Code:**

98115-6349

**Contact_Voice_Telephone:**

(206) 526-6944

**Contact_Facsimile_Telephone:**

(206) 526-6329

**Contact_Electronic_Mail_Address:**

orr.esi@noaa.gov

**Metadata_Standard_Name:**

Content Standards for Digital Geospatial Metadata

**Metadata_Standard_Version:**

FGDC-STD-001-1998
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: INDEX (Overlapping Polygons (Regions))

Metadata:

- Identification Information
- Data Quality Information
- Spatial Data Organization Information
- Spatial Reference Information
- Entity and Attribute Information
- Distribution Information
- Metadata Reference Information

Identification Information:
Citation:
Citation Information:
Originator:
Originator:
Department of Homeland Security, United States Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.
Publication Date:
201403
Title:
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: INDEX (Overlapping Polygons (Regions))
Edition:
Second
Geospatial Data Presentation Form:
vector digital data
Series Information:
Series Name:
None
Issue Identification:
Delaware/New Jersey/Pennsylvania
Publication Information:
Publication Place:
Seattle, Washington
Publisher:
NOAA's Ocean Service, Office of Response and Restoration (OR&R), Emergency Response Division (ERD).
Other Citation Details:
Online Linkage:
http://response.restoration.noaa.gov/esi
Online Linkage:
http://response.restoration.noaa.gov/esi_download
Online Linkage:
http://response.restoration.noaa.gov/esi_guidelines

Description:
Abstract:
This data set contains vector polygons grouped into regions representing the boundaries of all hardcopy cartographic products produced as part of the Environmental Sensitivity Index (ESI) for Delaware/New Jersey/Pennsylvania. This data set comprises a portion of the ESI data for Delaware/New Jersey/Pennsylvania. 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.

**Purpose:**
The ESI data were collected, mapped, and digitized to provide environmental data for oil spill planning and response. The Clean Water Act with amendments by the Oil Pollution Act of 1990 requires response plans for immediate and effective protection of sensitive resources.

**Time_Period_of_Content:**
**Time_Period_Information:**
**Single_Date/Time:**
**Calendar_Date:**
2013

**Currentness_Reference:**
The data were compiled during 2013-2014. The currentness date for the data is 2013 and is documented in the Lineage section.

**Status:**
**Progress:**
Complete

**Maintenance_and_Update_Frequency:**
None Scheduled

**Spatial_Domain:**
**Bounding_Coordinates:**
**West_BoundingCoordinate:**
-75.75000
**East_BoundingCoordinate:**
-74.03800
**North_BoundingCoordinate:**
40.23700
**South_BoundingCoordinate:**
38.37500

**Keywords:**
**Theme:**
**Theme_Keyword_Thesaurus:**
ISO 19115 Topic Category
**Theme_Keyword:**
biota
**Theme_Keyword:**
environment

**Theme:**
**Theme_Keyword_Thesaurus:**
None
**Theme_Keyword:**
Environmental Monitoring
**Theme_Keyword:**
ESI
**Theme_Keyword:**
Sensitivity maps
**Theme_Keyword:**
Coastal resources
**Theme_Keyword:**
Oil spill planning
**Theme_Keyword:**
Coastal Zone Management
**Theme_Keyword:**
Wildlife

**Theme:**
**Theme_Keyword_Thesaurus:**
NOS Data Explorer Topic Category
Theme_Keyword:
Environmental Monitoring

Place:
Place_Keyword_Thesaurus:
None
Place_Keyword:
Delaware/New Jersey/Pennsylvania

Access_Constraints:
None

Use_Constraints:
DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Management boundaries are not to be considered legal boundaries. Edges may have been altered for cartographic processes. Besides the above warnings, there are no use constraints on these data. Note that the ESI database should not be used to the exclusion of other pertinent data or information held by state or federal agencies or other organizations. Likewise, information contained in the database cannot be used in place of consultations with environmental, natural resource, and cultural resource agencies, or in place of field surveys. Recognize that the information contained in the ESI database represents known concentration areas or occurrences of natural, cultural, and human-use resources, but does not necessarily represent the full distribution or range of each species or resource. This is particularly important to recognize when considering potential impacts to protected resources, such as endangered species, wetlands, etc. Acknowledgment of the originators, publishers, contributors, and sources listed would be appreciated in products derived from these data.

Browse_Graphic:
Browse_Graphic_File_Name:
Browse_Graphic_File_Description:
Depicts the relationships between spatial data layers and attribute data tables for the Delaware/New Jersey/Pennsylvania ESI data.
Browse_Graphic_File_Type:
JPEG

Browse_Graphic:
Browse_Graphic_File_Name:
Browse_Graphic_File_Description:
Depicts the relationships between spatial data layers and desktop data tables for the Delaware/New Jersey/Pennsylvania ESI data.
Browse_Graphic_File_Type:
JPEG

Data_Set_Credit:
This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Office of Response and Restoration (OR&R), Emergency Response Division (ERD), Seattle, Washington; and The Department of Homeland Security, United States Coast Guard Office of Incident Management and Preparedness, Washington, D.C.

Native_Data_Set_Environment:
The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(R) (version 10.2) and SQL SERVER(R) (version 2005). The hardware configuration is PCs with Windows Operating System 7. The Spatial_Data_Organization Information section refers only to the source files in the ARC export format. The following files are included in the data set: benthic.e00, birds.e00, esil.e00, esip.e00, fish.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, ngt.e00, nests.e00, reptiles.e00, soccon.e00, and t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut.e00, biofile.e00, biore.e00, breed.e00, breed_dt.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, sources.e00, species.e00, and status.e00.

Data_Quality_Information:
Attribute_Accuracy:
Attribute_Accuracy_Report:
A multi-stage error checking process is used to verify both attribute accuracy and logical consistency throughout data production. The process includes a standardized data entry methodology, hardcopy data review by in-house and external resource experts, a final Quality Assurance/Quality Control (QA/QC) process, and multiple automated logical consistency checks. Quantitative data (such as densities, counts, abundances, or concentrations) provided by resource
experts for inclusion in the data set may vary widely in attribute accuracy, depending upon the methodology used to collect and compile such data. For a more detailed evaluation of source data attribute accuracy, contact the sources listed in the Lineage section.

Logical_Consistency_Report:
A multi-stage error checking process, described in the above Attribute_Accuracy_Report, is used to verify both attribute accuracy and logical consistency throughout data production. This process includes multiple automated logical consistency checks that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and SQL SERVER(R) to ARC/INFO(R) consistencies. After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks.

Completeness_Report:
These data represent the boundaries of all hardcopy cartographic products and digital data extents produced as part of the Delaware/New Jersey/Pennsylvania ESI atlas.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:
The index polygons in this data layer were generated in ArcInfo by defining corner coordinates. Some small amount of positional error may be present along the arcs forming the boundaries of these polygons, particularly away from the polygon corners. Some boundaries may have been developed from pre-existing digital and hardcopy sources and reflect the positional accuracy of these original data. See the Lineage and Process_Description sections for more information on the original source data and how these data were integrated or manipulated to create the final data set.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator:
RESEARCH PLANNING, INC.

Publication_Date:
2013

Title:
ESI SHORELINE BOUNDARY AND PRINTING INDEX

Geospatial_Data_Presentation_Form:
vector digital data

Other_Citation_Details:
UNPUBLISHED

Source_Scale_Denominator:
45000

Type_of_Source_Media:
PERSONAL COMMUNICATION

Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:
Beginning_Date:
2013

Ending_Date:
2013

Source_Currentness_Reference:
DATE OF PUBLICATION

Source_Citation_Abbreviation:
Src_0

Source_Contribution:
INDEX INFORMATION

Process_Step:

Process_Description:
Primarily, 1:45,000 polygons were used to provide boundaries for cartographic products. The polygons were tiled and arranged in a way as to best capture the shoreline product. In some cases these polygons overlapped due to scale versus features depicted. An index region was added to handle the overlap and aid in map production.

Process_Date:
201403
Process Contact:
Contact Information:
  Contact Organization Primary:
    Contact Organization:
      NOAA, Office of Response and Restoration
    Contact Person:
      ESI Manager
  Contact Address:
    Address Type:
      Physical address
    Address:
      7600 Sand Point Way, N.E.
    City:
      Seattle
    State or Province:
      Washington
    Postal Code:
      98115-6349
  Contact Voice Telephone:
    (206) 526-6944
  Contact Facsimile Telephone:
    (206) 526-6329
  Contact Electronic Mail Address:
    orr.esi@noaa.gov

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:
        90
    SDTS Terms Description:
      SDTS Point and Vector Object Type:
        Area point
      Point and Vector Object Count:
        89
    SDTS Terms Description:
      SDTS Point and Vector Object Type:
        Complete chain
      Point and Vector Object Count:
        318
    SDTS Terms Description:
      SDTS Point and Vector Object Type:
        Link
      Point and Vector Object Count:
        11599
    SDTS Terms Description:
      SDTS Point and Vector Object Type:
        Node, planar graph
      Point and Vector Object Count:
        230
Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:
Geographic:
  Latitude_Resolution:
    0.0000001
  Longitude_Resolution:
    0.0000001
Geographic_Coordinate_Units:
  Decimal degrees

Geodetic_Model:
  Horizontal_Datum_Name:
    North American Datum of 1983
  Ellipsoid_Name:
    Geodetic Reference System 80
  Semi-major_Axis:
    6378137.000000
  Denominator_of_Flattening_Ratio:
    298.257222

Entity_and_Attribute_Information:

Detailed_Description:
Entity_Type:
  Entity_Type_Label:
    INDEX.PATINDEX
  Entity_Type_Definition:
    The INDEX.PATINDEX table contains attribute information for the vector polygons grouped into regions representing the boundaries of the maps and digital data boundaries used in the creation of the ESI atlas.
  Entity_Type_Definition_Source:
    NOAA ESI Guidelines

Attribute:
  Attribute_Label:
    TILE-NAME
  Attribute_Definition:
    The TILE-NAME contains the map number according to the specified layout of the atlas.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum:
        1
      Range_Domain_Maximum:
        55

Attribute:
  Attribute_Label:
    TOPO-NAME
  Attribute_Definition:
    USGS Topographic map name, short description of location, or atlas name.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Unrepresentable_Domain:
      Acceptable values change from atlas to atlas.

Attribute:
  Attribute_Label:
    SCALE
  Attribute_Definition:
    SCALE contains the value of the denominator of the scale at which the map is plotted in the final map product.
**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**
**Enumerated Domain:**
- **Enumerated Domain Value:** 45000
- **Enumerated Domain Value Definition:** Scale = 1:45,000
- **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

**Attribute:**
**Attribute Label:** MAPANGLE
**Attribute Definition:** MAPANGLE contains the value to rotate the final map product so that it is situated straight up and down.
**Attribute Definition Source:** NOAA ESI Guidelines

**Attribute Domain Values:**
**Range Domain:**
- **Range Domain Minimum:** -0.5777
- **Range Domain Maximum:** 0.4390
- **Attribute Units of Measure:** Degree

**Attribute:**
**Attribute Label:** PAGESIZE
**Attribute Definition:** PAGESIZE contains the value of the width and height of the map in the final map product.
**Attribute Definition Source:** NOAA ESI Guidelines

**Attribute Domain Values:**
**Enumerated Domain:**
- **Enumerated Domain Value:** 11,17
- **Enumerated Domain Value Definition:** Page size= 11" by 17"
- **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

**Overview Description:**
**Entity and Attribute Overview:**
In addition to the geographic data layers, relational attribute or data tables are used to store information in the ESI data structure. (See the Browse Graphic section for links to entity-relationship diagrams, which describe the relationships between the attribute tables in the ESI data structure.) The INDEX data layer does not link to other ESI tables.

**Entity and Attribute Detail Citation:**
A complete description of entity types, attributes, and attribute values for ESI atlases can be found in the NOAA ESI Guidelines (http://response.restoration.noaa.gov/esi_guidelines).

**Back To Index**
Contact_Address:
  Address_Type:
    Physical Address
  Address:
    7600 Sand Point Way N.E.
  City:
    Seattle
State_orProvince:
  Washington
Postal_Code:
  98115-6349
Contact_Voice_Telephone:
  (206) 526-6944
Contact_Facsimile_Telephone:
  (206) 526-6329
Contact_Electronic_Mail_Address:
or. esi@noaa.gov

Resource_Description:
  Downloadable Data
Distribution_Liability:
  Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format. If problems are encountered either in downloading the ESI data or if any file appears corrupted, please contact the ESI manager.

Custom_Order_Process:
  Contact NOAA if you require the data be provided to you on CD/DVD. (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export files, Shapefiles, and a file Geodatabase (the recommended format). The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

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Metadata_Reference_Information:
  Metadata_Date:
    20140620
Metadata_Contact:
  Contact_Person_Primary:
    Contact_Person:
      ESI Manager
    Contact_Organization:
      NOAA, Office of Response and Restoration
  Contact_Position:
    GIS Manager
  Contact_Address:
    Address_Type:
      Physical Address
    Address:
      7600 Sand Point Way, N.E.
    City:
      Seattle
State_orProvince:
  Washington
Postal_Code:
  98115-6349
Contact_Voice_Telephone:
  (206) 526-6944
Sensitivity of Coastal Environments and Wildlife to Spilled Oil:
Delaware/New Jersey/Pennsylvania: MGT (Management Area Polygons)

Metadata:

- Identification Information
- Data Quality Information
- Spatial Data Organization Information
- Spatial Reference Information
- Entity and Attribute Information
- Distribution Information
- Metadata Reference Information

Identification Information:

Citation Information:

Originator:


Originator:

Department of Homeland Security, United States Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.

Publication Date:

201403

Title:

Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: MGT (Management Area Polygons)

Edition:

Second

Geospatial Data Presentation Form:

vector digital data

Series Information:

Series Name:

None

Issue Identification:

Delaware/New Jersey/Pennsylvania

Publication Information:

Publication Place:

Seattle, Washington

Publisher:

NOAA's Ocean Service, Office of Response and Restoration (OR&R), Emergency Response Division (ERD).

Other Citation Details:


Online Linkage:

http://response.restoration.noaa.gov/esi

Online Linkage:

http://response.restoration.noaa.gov/esi_download

Online Linkage:

http://response.restoration.noaa.gov/esi_guidelines

Description:

Abstract:
This data set contains management boundaries for: artificial reefs, management areas, The Nature Conservancy (TNC) lands, parks, and National Wildlife Refuges in Delaware/New Jersey/Pennsylvania. Vector polygons in this data set represent management areas. Location specific type and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer. This data set comprises a portion of the ESI data for Delaware/New Jersey/Pennsylvania. 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 SOCECON (Socioeconomic Resource Points and Lines) data layer, part of the larger Delaware/New Jersey/Pennsylvania ESI database, for additional human-use information.

**Purpose:**
The ESI data were collected, mapped, and digitized to provide environmental data for oil spill planning and response. The Clean Water Act with amendments by the Oil Pollution Act of 1990 requires response plans for immediate and effective protection of sensitive resources.

**Time Period of Content:**

**Time Period Information:**

<table>
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<th>Range_of_Dates/Times</th>
<th>Beginning_Date</th>
<th>Ending_Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2001</td>
<td>2013</td>
</tr>
</tbody>
</table>

**Currentness Reference:**
The data were compiled during 2013-2014. The currentness dates for the data range from 2001 to 2013 and are documented in the Lineage section.

**Status:**

**Progress:**
Complete

**Maintenance and Update Frequency:**
None Scheduled

**Spatial Domain:**

**Bounding Coordinates:**

<table>
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<th>West_BoundingCoordinate</th>
<th>East_BoundingCoordinate</th>
<th>North_BoundingCoordinate</th>
<th>South_BoundingCoordinate</th>
</tr>
</thead>
<tbody>
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<td>-74.03800</td>
<td>40.23700</td>
<td>38.37500</td>
</tr>
</tbody>
</table>

**Keywords:**

**Theme:**

**Theme_Keyword_Thesaurus:**
ISO 19115 Topic Category

**Theme_Keyword:**
biota

**Theme_Keyword:**
environment

**Theme:**

**Theme_Keyword_Thesaurus:**
None

**Theme_Keyword:**
Environmental Monitoring

**Theme_Keyword:**
ESI

**Theme_Keyword:**
Sensitivity maps

**Theme_Keyword:**
Coastal resources

**Theme_Keyword:**
Oil spill planning

**Theme_Keyword:**
Coastal Zone Management

Theme_Keyword:
Wildlife

Theme_Keyword:
Management

Theme:

Theme_Keyword_Thesaurus:
NOS Data Explorer Topic Category

Theme_Keyword:
Environmental Monitoring

Place:

Place_Keyword_Thesaurus:
None

Place_Keyword:
Delaware/New Jersey/Pennsylvania

Access_Constraints:
None

Use_Constraints:
DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Management boundaries are not to be considered legal boundaries. Edges may have been altered for cartographic processes. Besides the above warnings, there are no use constraints on these data. Note that the ESI database should not be used to the exclusion of other pertinent data or information held by state or federal agencies or other organizations. Likewise, information contained in the database cannot be used in place of consultations with environmental, natural resource, and cultural resource agencies, or in place of field surveys. Recognize that the information contained in the ESI database represents known concentration areas or occurrences of natural, cultural, and human-use resources, but does not necessarily represent the full distribution or range of each species or resource. This is particularly important to recognize when considering potential impacts to protected resources, such as endangered species, wetlands, etc. Acknowledgment of the originators, publishers, contributors, and sources listed would be appreciated in products derived from these data.

Browse_Graphic:
Browse_Graphic_File_Name:

Browse_Graphic_File_Description:
Depicts the relationships between spatial data layers and attribute data tables for the Delaware/New Jersey/Pennsylvania ESI data.

Browse_Graphic_File_Type:
JPEG

Browse_Graphic:
Browse_Graphic_File_Name:

Browse_Graphic_File_Description:
Depicts the relationships between spatial data layers and desktop data tables for the Delaware/New Jersey/Pennsylvania ESI data.

Browse_Graphic_File_Type:
JPEG

Data_Set_Credit:
This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Office of Response and Restoration (OR&R), Emergency Response Division (ERD), Seattle, Washington; and The Department of Homeland Security, United States Coast Guard Office of Incident Management and Preparedness, Washington, D.C.

Native_Data_Set_Environment:
The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(R) (version 10.2) and SQL SERVER(R) (version 2005). The hardware configuration is PCs with Windows Operating System 7. The Spatial_DATA_Organization Information section refers only to the source files in the ARC export format. The following files are included in the data set: benthic.e00, birds.e00, esil.e00, esip.e00, fish.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, socecon.e00, and t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut.e00, biofile.e00, biore.e00, breed.e00, breed_dt.e00, seasonal.e00, soc_dat.e00, soci_lut.e00, sources.e00, species.e00, and status.e00.
Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report:
A multi-stage error checking process is used to verify both attribute accuracy and logical consistency throughout data production. The process includes a standardized data entry methodology, hardcopy data review by in-house and external resource experts, a final Quality Assurance/Quality Control (QA/QC) process, and multiple automated logical consistency checks. Quantitative data (such as densities, counts, abundances, or concentrations) provided by resource experts for inclusion in the data set may vary widely in attribute accuracy, depending upon the methodology used to collect and compile such data. For a more detailed evaluation of source data attribute accuracy, contact the sources listed in the Lineage section.

Logical_Consistency_Report:
A multi-stage error checking process, described in the above Attribute_Accuracy_Report, is used to verify both attribute accuracy and logical consistency throughout data production. This process includes multiple automated logical consistency checks that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and SQL SERVER(R) to ARC/INFO(R) consistencies. After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks. In the process of checking for topological and database consistencies, new ID's and RARNUM's or HUNUM's are also generated. The new ID's are a combination of atlas number, element number, and record number. In addition, the value used to represent the element is modified to reflect the type of feature being mapped. In the case of an element that is normally represented by a point or polygon, a value of 20 is added to the standard element value for mapping of linear features. In the case where an element usually mapped as a polygon is represented by a point, a value of 30 is added to the regular element value. The RARNUM's are also modified to include the atlas number, so multiple atlases can be combined and RARNUM's remain unique. RARNUM's are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUM's are also modified to include the atlas number.

Completeness_Report:
These data represent a synthesis of digital boundaries for management areas. See also the SOCECON (Socioeconomic Resource Points and Lines) data layer, part of the larger Delaware/New Jersey/Pennsylvania ESI database, for additional human-use information. These data do not necessarily represent all management areas in Delaware/New Jersey/Pennsylvania.

Positional_Accuracy:
Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:
Spatial components for the human-use data layers can come from expert interviews, hardcopy, or digital sources. Most of the spatial components of the human-use data layers are developed from pre-existing digital or hardcopy sources and reflect the positional accuracy of these original data. Some of the spatial components of the human-use data layers are compiled on hardcopy base maps with a scale of 1:45,000. See the Lineage and Process_Description sections for more information on the original source data and how these data were integrated or manipulated to create the final data set.

Lineage:
Source_Information:
Source_Citation:
Citation_Information:
Originator:
DELWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL (DNREC)
Publication_Date:
2011
Title:
DELWARE NATIONAL ESTUARINE RESEARCH RESERVE LOCATIONS
Geospatial_Data_Presentation_Form:
vector digital data
Other_Citation_Details:
UNPUBLISHED
Type_of_Source_Media:
EMAIL
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date:
2011
DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL (DNREC)
Publication_Date:
2013
Title:
DELAWARE'S ARTIFICIAL REEF PROGRAM - REEF LOCATIONS

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL (DNREC)
Publication_Date:
2013
Title:
IMPOUNDMENTS FINAL AND PUBLICLY OWNED IMPOUNDMENTS

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL (DNREC)
Publication_Date:
2013
Title:
IMPOUNDMENTS FINAL AND PUBLICLY OWNED IMPOUNDMENTS

Page 5 of 23
Source_Citation:
Citation_Information:
  Originator:
    PENNSYLVANIA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES (DCNR)
  Publication_Date:
    2012
  Title:
    PA STATE PARKS
  Geospatial_Data_Presentation_Form:
    vector digital data
  Other_Citation_Details:
    UNPUBLISHED
Type_of_Source_Media:
  EMAIL
Source_Time_Period_of_Content:
  Time_Period_Information:
    Single_Date/Time:
      Calendar_Date:
        2012
Source_Currentness_Reference:
  DATE OF COMMUNICATION
Source_Citation_Abbreviation:
  Src_11
Source_Contribution:
  MGT INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator:
        RUTGERS UNIVERSITY INSTITUTE OF MARINE AND COASTAL SCIENCES
      Publication_Date:
        2011
      Title:
        JACQUES COUSTEAU NATIONAL ESTUARINE RESEARCH RESERVE BOUNDARIES
    Geospatial_Data_Presentation_Form:
      vector digital data
    Other_Citation_Details:
      UNPUBLISHED
Type_of_Source_Media:
  EMAIL
Source_Time_Period_of_Content:
  Time_Period_Information:
    Single_Date/Time:
      Calendar_Date:
        2013
Source_Currentness_Reference:
  DATE OF COMMUNICATION
Source_Citation_Abbreviation:
  Src_12
Source_Contribution:
  MGT INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator:
        THE NATURE CONSERVANCY (TNC)
      Publication_Date:
        2013
      Title:
TNC OWNED PROPERTIES AND EASEMENTS FOR DELAWARE BAY ESI

Geospatial_Data_Presentation_Form:
vector digital data

Other_Citation_Details:
UNPUBLISHED

Type_of_Source_Media:
EMAIL

Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date:
2013

Source_Currentness_Reference:
DATE OF COMMUNICATION

Source_Citation_Abbreviation:
Src_13

Source_Contribution:
MGT INFORMATION

Source_Information:
Source_Citation:

Citation_Information:
Originator:
UNITED STATES FISH AND WILDLIFE SERVICE (USFWS)

Publication_Date:
2012

Title:
SIMPLIFIED FWS BOUNDARIES

Geospatial_Data_Presentation_Form:
vector digital data

Publication_Information:
Publication_Place:
ARLINGTON, VA
Publisher:
UNITED STATES FISH AND WILDLIFE SERVICE (USFWS)

Online_Linkage:
http://www.fws.gov/GIS/data/CadastralDB/

Type_of_Source_Media:
one

Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date:
2012

Source_Currentness_Reference:
DATE OF PUBLICATION

Source_Citation_Abbreviation:
Src_14

Source_Contribution:
MGT INFORMATION

Source_Information:
Source_Citation:

Citation_Information:
Originator:
UNITED STATES FISH AND WILDLIFE SERVICE (USFWS) - SUSAN GUITERAS

Publication_Date:
2013

Title:
PRIME HOOK NATIONAL WILDLIFE REFUGE OFFICIAL BOUNDARY

Geospatial_Data_Presentation_Form:
vector digital data
The mapping extent was dependent upon information availability and location of mapped coastal habitats and shorelines. The main sources of data used to depict human-use resources for this data layer were digital data sets provided by the following agencies: 1) Delaware Department of Natural Resources and Environmental Control (DNREC) Artificial Reef Program; 2) New Jersey Department of Environmental Protection (NJDEP) Division of Fish and Wildlife (F&W) Artificial Reef Program; 3) Rutgers University Institute of Marine and Coastal Sciences; 4) NOAA NMFS Office of Protected Resources and Office of Sustainable Fisheries; 5) NJDEP DFW Bureaus of Marine Fisheries and Shellfisheries; 6) DNREC Division of Parks and Recreation; 7) The Nature Conservancy (TNC); 8) Delaware State Parks; 9) NJ Parks and Forestry; 10) PA Department of Conservation and Natural Resources; and 11) U.S. Fish and Wildlife Service (USFWS). Artificial Reef: Locations of artificial reefs were mapped in Delaware Bay and the Atlantic Ocean. Artificial reef data for DE was provided by DNREC’s Artificial Reef Program. Artificial reef data for NJ was provided by NJDEP DFW’s Artificial Reef Program. Management Area: ‘Management Areas’ in this ESI Atlas include state-managed: Wildlife Management Areas (WMA), Natural Areas, Preserves, Wildlife Areas, some beaches, Reserves, DE impoundments, and NJ shellfish leases. The Jacques Cousteau National Estuarine Research Reserve, the Carl H. Shuster, Jr. Horseshoe Crab Reserve, a habitat area of particular concern for sandbar shark and the North Atlantic Right Whale seasonal management area are also included. Nature Conservancy: Boundaries of The Nature Conservancy properties were provided by TNC. Parks: State park boundaries were provided by Delaware State Parks, NJ Parks and Forestry, and PA Department of Conservation and Natural Resources. Recreational Fishing: Recreational fishing locations were provided by NJDEP DFW Bureau of Marine Fisheries and DNREC. Wildlife Refuges: Six wildlife refuges fall within the Area of Interest (AOI): 1) Bombay Hook NWR (DE); 2) Cape May NWR (NJ); 3) Edwin B. Forsythe NWR (NJ); 4) John Heinz NWR Tonicum (PA); 5) Prime Hook NWR (DE); and 6) Supawna Meadows NWR (NJ). Locations of National Wildlife Refuges were provided by the USFWS. The above digital and/or hardcopy sources were compiled by the project biologist to create the MGT data layer. Depending on the type of source data, three general approaches are used for compiling the data layer: 1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:45,000 topographic quadrangles and digitized; 2) hardcopy maps are digitized at their source scale; 3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer. The ESI, biology, and human-use data are compiled into the standard ESI digital data format. A second set of interviews with participating resource experts are conducted to review the compiled data. If necessary, edits to the MGT data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.
Address:
    7600 Sand Point Way, N.E.
City:
    Seattle
State_orProvince:
    Washington
Postal_Code:
    98115-6349
Contact_Voice_Telephone:
    (206) 526-6944
Contact_Facsimile_Telephone:
    (206) 526-6329
Contact_Electronic_Mail_Address:
    orr.esi@noaa.gov

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:
                3592
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type:
                Area point
            Point_and_Vector_Object_Count:
                3591
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type:
                Complete chain
            Point_and_Vector_Object_Count:
                11519
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type:
                Link
            Point_and_Vector_Object_Count:
                727963
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type:
                Node, planar graph
            Point_and_Vector_Object_Count:
                10136

Spatial_Reference_Information:
    Horizontal_Spatial_Reference_System_Definition:
        Geographic:
            Latitude_Resolution:
                0.0000001
            Longitude_Resolution:
                0.0000001
            Geographic_Coordinate_Units:
                Decimal degrees
        Geodetic_Model:
Horizontal_Datum_Name:
    North American Datum of 1983
Ellipsoid_Name:
    Geodetic Reference System 80
Semi-major_Axis:
    6378137.000000
Denominator_of_Flattening_Ratio:
    298.257222

Entity_and_Attribute_Information:
    Detailed_Description:
        Entity_Type:
            Entity_Type_Label:
                MGT.PAT
            Entity_Type_Definition:
                The MGT.PAT table contains attribute information for the vector polygons representing management areas. Note that all attribute information is stored in a series of relational files, described below and in the Overview_Description section. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the relationships between attribute tables in the ESI data structure.
            Entity_Type_Definition_Source:
                NOAA ESI Guidelines
        Attribute:
            Attribute_Label:
                TYPE
            Attribute_Definition:
                The human-use features depicted on the maps are those that could be impacted by an oil spill or could provide access for response operations. TYPE can be used as a quick identifier for the managed polygon features. Greater detail about the object is provided in the SOC_DAT table.
            Attribute_Definition_Source:
                NOAA ESI Guidelines
            Attribute_Domain_Values:
                Enumerated_Domain:
                    Enumerated_Domain_Value:
                        AR
                    Enumerated_Domain_Value_Definition:
                        Artificial Reef
                    Enumerated_Domain_Value_Definition_Source:
                        NOAA ESI Guidelines
                Enumerated_Domain:
                    Enumerated_Domain_Value:
                        MA
                    Enumerated_Domain_Value_Definition:
                        Management Area
                    Enumerated_Domain_Value_Definition_Source:
                        NOAA ESI Guidelines
                Enumerated_Domain:
                    Enumerated_Domain_Value:
                        MR
                    Enumerated_Domain_Value_Definition:
                        Multiple Records - Signifies that multiple types overlap in the polygon
                    Enumerated_Domain_Value_Definition_Source:
                        NOAA ESI Guidelines
NC

Enumerated_Domain_Value_Definition:
Nature Conservancy

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:
P

Enumerated_Domain_Value_Definition:
Regional or State Park

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:
WR

Enumerated_Domain_Value_Definition:
Wildlife Refuge

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute:

Attribute_Label:
ID

Attribute_Definition:
An identifier that links vector objects in the human-use data layers to records in the SOC_LUT data table. ID is a concatenation of atlas number (212), element number (11), and record number. ID values of 9999 are holes in polygons and do not contain information.

Attribute_Definition_Source:
NOAA

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum:
2121100002

Range_Domain_Maximum:
2121103606

Attribute:

Attribute_Label:
HUNUM

Attribute_Definition:
An identifier that links directly to the SOC_DAT table. HUNUM values of 0 are holes in the polygons and do not contain information.

Attribute_Definition_Source:
NOAA

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum:
212000055

Range_Domain_Maximum:
212000786

Detailed_Description:

Entity_Type:

Entity_Type_Label:
SOC_LUT

Entity_Type_Definition:
The data table SOC_LUT is a lookup table that contains items necessary for linking vector objects in the human-use data layers with the SOC_DAT data table. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

Entity_Type_Definition_Source:
NOAA ESI Guidelines
Attribute:
  Attribute_Label: HUNUM
  Attribute_Definition: An identifier that links records in the SOC_LUT data table to records in the SOC_DAT data table. HUNUM values of 0 are holes in the polygons and do not contain information.
  Attribute_Definition_Source: NOAA
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum: 212000001
      Range_Domain_Maximum: 212000786

Attribute:
  Attribute_Label: ID
  Attribute_Definition: An identifier that links vector objects in the human-use data layers to records in the SOC_LUT data table. ID is a concatenation of atlas number (212), element number (11), and record number. ID values of 9999 are holes in polygons and do not contain information.
  Attribute_Definition_Source: NOAA
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum: 212000001
      Range_Domain_Maximum: 212003606

Detailed_Description:
  Entity_Type:
    Entity_Type_Label: SOC_DAT
    Entity_Type_Definition: The data table SOC_DAT contains both human-use attribute data and items necessary for linking the human-use spatial data layers to the SOURCES data table. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.
    Entity_Type_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: HUNUM
  Attribute_Definition: An identifier that links records in the SOC_DAT data table to records in the SOC_LUT data table. HUNUM values of 0 are holes in the polygons and do not contain information.
  Attribute_Definition_Source: NOAA
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum: 212000001
      Range_Domain_Maximum: 212000786

Attribute:
  Attribute_Label: TYPE
  Attribute_Definition: The human-use features depicted on the maps are those that could be impacted by an oil spill or could provide access for response operations.
  Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: ACCESS
Enumerated Domain Value Definition: Access
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: AIRPORT
Enumerated Domain Value Definition: Airport
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: ARCHAEOLOGICAL SITE
Enumerated Domain Value Definition: Archaeological Site
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: ARTIFICIAL REEF
Enumerated Domain Value Definition: Artificial Reef
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: BOAT RAMP
Enumerated Domain Value Definition: Boat Ramp
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: COAST GUARD
Enumerated Domain Value Definition: Coast Guard
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: FERRY
Enumerated Domain Value Definition: Ferry
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
HELIPORT
  Enumerated_Domain_Value_Definition:
  Heliport
  Enumerated_Domain_Value_Definition_Source:
  NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      HISTORICAL SITE
    Enumerated_Domain_Value_Definition:
      Historical Site
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      MANAGEMENT AREA
    Enumerated_Domain_Value_Definition:
      Management Area
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      MARINA
    Enumerated_Domain_Value_Definition:
      Marina
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      NATURE CONSERVANCY
    Enumerated_Domain_Value_Definition:
      Nature Conservancy
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      PARK
    Enumerated_Domain_Value_Definition:
      Regional or State Park
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      RECREATIONAL FISHING
    Enumerated_Domain_Value_Definition:
      Recreational Fishing
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      WATER INTAKE
    Enumerated_Domain_Value_Definition:
      Water Intake
    Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: WILDLIFE REFUGE
  Enumerated Domain Value Definition: Wildlife Refuge
  Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute: Attribute Label: NAME
  Attribute Definition: The feature name.
  Attribute Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
  Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute: Attribute Label: CONTACT
  Attribute Definition: Contact person or entity.
  Attribute Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
  Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute: Attribute Label: PHONE
  Attribute Definition: Contact telephone number.
  Attribute Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value: Any character
    Enumerated Domain Value Definition: Free text
    Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute: Attribute Label: G_SOURCE
  Attribute Definition: Geographic source identifier that links records in the SOC_DAT data table to records in the SOURCES data table.
  Attribute Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
  Range Domain:
    Range Domain Minimum: 1
    Range Domain Maximum: N

Attribute: Attribute Label:
A_SOURCE

Attribute Definition:
Attribute source identifier that links records in the SOC_DAT data table to records in the SOURCES data table.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Range Domain:
  Range Domain Minimum:
    1
  Range Domain Maximum:
    N

Detailed Description:
Entity Type:
  Entity Type Label: SOURCES
  Entity Type Definition:
The data table SOURCES contains the primary sources used to create the ESI data set. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute:
  Attribute Label: SOURCE_ID
  Attribute Definition:
  Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIRES table; and SOURCE_ID and ESI_SOURCE in the ESIL and ESIP data layers; and SOURCE_ID in the HYDRO data layers.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
  Range Domain:
    Range Domain Minimum:
      1
    Range Domain Maximum:
      N

Attribute:
  Attribute Label: ORIGINATOR
  Attribute Definition:
  Author or developer of source material or data set.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
  Unrepresentable Domain:
    Acceptable values change from atlas to atlas.

Attribute:
  Attribute Label: DATE_PUB
  Attribute Definition:
  Date of source material, publication, or date of personal communication with expert source.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value:
      YYYYMM
    Enumerated Domain Value Definition:
      YYYY for year and optionally MM for month
    Enumerated Domain Value Definition Source:
Attribute:
  Attribute_Label: TITLE
  Attribute_Definition: Title of source material or data.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:
  Attribute_Label: DATA_FORMAT
  Attribute_Definition: The format of the source material.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:
  Attribute_Label: PUB_PLACE
  Attribute_Definition: Publication place.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:
  Attribute_Label: PUBLISHER
  Attribute_Definition: Publisher.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:
  Attribute_Label: PUBLICATION
  Attribute_Definition: Additional citation information.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:
  Attribute_Label: ONLINE_LINK
  Attribute_Definition: Online computer resource URL.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Unrepresentable_Domain:
Acceptable values change from atlas to atlas.

**Attribute:**

*Attribute_Label:* SCALE

*Attribute_Definition:* Description of the source scale.

*Attribute_Definition_Source:* NOAA ESI Guidelines

*Attribute_Domain_Values:* Unrepresentable_Domain:

Acceptable values change from atlas to atlas.

**Attribute:**

*Attribute_Label:* TIME_PERIOD

*Attribute_Definition:* Date(s) of data collection that the source material is based upon.

*Attribute_Definition_Source:* NOAA ESI Guidelines

*Attribute_Domain_Values:* Unrepresentable_Domain:

Acceptable values change from atlas to atlas.

**Overview_Description:**

**Entity_and_Attribute_Oversview:**

Two relational attribute or data tables, SOC_DAT, and SOURCES, are used to store the complex socioeconomic data in the ESI data structure. The geographic data layer containing socioeconomic data resource information (in this case, MGT) is linked to the Socioeconomic Resources table (SOC_DAT) using the unique ID and the lookup table SOC_LUT, or it can be linked directly using HUNUM. HUNUM is a unique reference number concatenated with the atlas number (for Delaware/New Jersey/Pennsylvania, the number is 212). ID is a unique combination of the atlas number (212), an element specific number (MGT = 11), and a unique record number. SOC_DAT and the other relational data tables are described in the Detailed_Description sections. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way these tables relate to the geographic data layers and other attribute tables in the ESI data structure.

**Entity_and_Attribute_Detail_Citation:**

A complete description of entity types, attributes, and attribute values for ESI atlases can be found in the NOAA ESI Guidelines (http://response.restoration.noaa.gov/esi_guidelines).

---

**Distribution_Information:**

**Distributor:**

**Contact Information:**

**Contact Person Primary:**

**Contact Person:**

ESI Manager

**Contact Organization:**

NOAA, Office of Response and Restoration

**Contact Address:**

**Address Type:**

Physical Address

**Address:**

7600 Sand Point Way N.E.

**City:**

Seattle

**State_or_Province:**

Washington

**Postal Code:**

98115-6349

**Contact_Voice_Telephone:**

(206) 526-6944
Resource_Description:
Downloadable Data

Distribution_Liability:
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format. If problems are encountered either in downloading the ESI data or if any file appears corrupted, please contact the ESI manager.

Custom_Order_Process:
Contact NOAA if you require the data be provided to you on CD/DVD. (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export files, Shapefiles, and a file Geodatabase (the recommended format). The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

Back To Index
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: SOCECON (Socioeconomic Resource Points and Lines)

Metadata:

- Identification Information
- Data Quality Information
- Spatial Data Organization Information
- Spatial Reference Information
- Entity and Attribute Information
- Distribution Information
- Metadata Reference Information

**Identification Information:**

**Citation Information:**

**Originator:**

**Originator:**
Department of Homeland Security, United States Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.

**Publication Date:**
201403

**Title:**
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: SOCECON (Socioeconomic Resource Points and Lines)

**Edition:**
Second

**Geospatial Data Presentation Form:**
vector digital data

**Series Information:**

**Series Name:**
None

**Issue Identification:**
Delaware/New Jersey/Pennsylvania

**Publication Information:**

**Publication Place:**
Seattle, Washington

**Publisher:**
NOAA's Ocean Service, Office of Response and Restoration (OR&R), Emergency Response Division (ERD).

**Other Citation Details:**

**Online Linkage:**
http://response.restoration.noaa.gov/esi

**Online Linkage:**
http://response.restoration.noaa.gov/esi_download

**Online Linkage:**
http://response.restoration.noaa.gov/esi_guidelines

**Description:**

**Abstract:**
This data set contains human-use resource data for: access sites, airports, archaeological sites, boat ramps, coast guard stations, ferries, heliports, historical sites, marinas, recreational fishing, and water intakes in Delaware/New Jersey/Pennsylvania. Vector points and lines in this data set represent human-use site locations. Location specific type and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer. This data set comprises a portion of the ESI data for Delaware/New Jersey/Pennsylvania. 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 MGT data layer, part of the larger Delaware/New Jersey/Pennsylvania ESI database, for additional human-use information.

**Purpose:**

The ESI data were collected, mapped, and digitized to provide environmental data for oil spill planning and response. The Clean Water Act with amendments by the Oil Pollution Act of 1990 requires response plans for immediate and effective protection of sensitive resources.

**Time_Period_of_Content:**

**Time_Period_Information:**

**Range_of_Dates/Times:**

**Beginning_Date:**

2003

**Ending_Date:**

2013

**Currentness_Reference:**

The data were compiled during 2013-2014. The currentness dates for the data range from 2003 to 2013 and are documented in the Lineage section.

**Status:**

**Progress:**

Complete

**Maintenance_and_Update_Frequency:**

None Scheduled

**Spatial_Domain:**

**Bounding_Coordinates:**

**West_BoundingCoordinate:**

-75.75000

**East_BoundingCoordinate:**

-74.03800

**North_BoundingCoordinate:**

40.23700

**South_BoundingCoordinate:**

38.37500

**Keywords:**

**Theme:**

**Theme_Keyword_Thesaurus:**

ISO 19115 Topic Category

**Theme_Keyword:**

biota

**Theme_Keyword:**

environment

**Theme:**

**Theme_Keyword_Thesaurus:**

None

**Theme_Keyword:**

Environmental Monitoring

**Theme_Keyword:**

ESI

**Theme_Keyword:**

Sensitivity maps

**Theme_Keyword:**

Coastal resources

**Theme_Keyword:**

Oil spill planning

**Theme_Keyword:**

None

**Theme_Keyword:**

ESI

**Theme_Keyword:**

Sensitivity maps
DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Management boundaries are not to be considered legal boundaries. Edges may have been altered for cartographic processes. Besides the above warnings, there are no use constraints on these data. Note that the ESI database should not be used to the exclusion of other pertinent data or information held by state or federal agencies or other organizations. Likewise, information contained in the database cannot be used in place of consultations with environmental, natural resource, and cultural resource agencies, or in place of field surveys. Recognize that the information contained in the ESI database represents known concentration areas or occurrences of natural, cultural, and human-use resources, but does not necessarily represent the full distribution or range of each species or resource. This is particularly important to recognize when considering potential impacts to protected resources, such as endangered species, wetlands, etc. Acknowledgment of the originators, publishers, contributors, and sources listed would be appreciated in products derived from these data.

**Browse_Graphic:**

**Browse_Graphic_File_Name:** http://response.restoration.noaa.gov/sites/default/files/esimaps/gisdata/DE_NJ_PA_2014_datafig.jpg

**Browse_Graphic_File_Description:** Depicts the relationships between spatial data layers and attribute data tables for the Delaware/New Jersey/Pennsylvania ESI data.

**Browse_Graphic_File_Type:** JPEG

**Browse_Graphic:**

**Browse_Graphic_File_Name:** http://response.restoration.noaa.gov/sites/default/files/esimaps/gisdata/DE_NJ_PA_2014_datafig2.jpg

**Browse_Graphic_File_Description:** Depicts the relationships between spatial data layers and desktop data tables for the Delaware/New Jersey/Pennsylvania ESI data.

**Browse_Graphic_File_Type:** JPEG

**Data_Set_Credit:**

This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Office of Response and Restoration (OR&R), Emergency Response Division (ERD), Seattle, Washington; and The Department of Homeland Security, United States Coast Guard Office of Incident Management and Preparedness, Washington, D.C.

**Native_Data_Set_Environment:**

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(R) (version 10.2) and SQL SERVER(R) (version 2005). The hardware configuration is PCs with Windows Operating System 7. The Spatial_Data_Organization Information section refers only to the source files in the ARC export format. The following files are included in the data set: benthic.e00, birds.e00, esil.e00, esip.e00, fish.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, soccon.e00, and t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut.e00, biofile.e00, biore.e00, breed.e00, breed_dt.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, sources.e00, species.e00, and status.e00.
Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report:
A multi-stage error checking process is used to verify both attribute accuracy and logical consistency throughout data production. The process includes a standardized data entry methodology, hardcopy data review by in-house and external resource experts, a final Quality Assurance/Quality Control (QA/QC) process, and multiple automated logical consistency checks. Quantitative data (such as densities, counts, abundances, or concentrations) provided by resource experts for inclusion in the data set may vary widely in attribute accuracy, depending upon the methodology used to collect and compile such data. For a more detailed evaluation of source data attribute accuracy, contact the sources listed in the Lineage section.

Logical_Consistency_Report:
A multi-stage error checking process, described in the above Attribute_Accuracy_Report, is used to verify both attribute accuracy and logical consistency throughout data production. This process includes multiple automated logical consistency checks that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and SQL SERVER(R) to ARC/INFO(R) consistencies. After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks. In the process of checking for topological and database consistencies, new ID's and RARNUM's or HUNUM's are also generated. The new ID's are a combination of atlas number, element number, and record number. In addition, the value used to represent the element is modified to reflect the type of feature being mapped. In the case of an element that is normally represented by a point or polygon, a value of 20 is added to the standard element value for mapping of linear features. In the case where an element usually mapped as a polygon is represented by a point, a value of 30 is added to the regular element value. The RARNUM's are also modified to include the atlas number, so multiple atlases can be combined and RARNUM's remain unique. RARNUM's are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUM's are also modified to include the atlas number.

Completeness_Report:
These data represent a synthesis of digital data for socioeconomic resources. See also the MGT (Management Area Polygons) data layer, part of the larger Delaware/New Jersey/Pennsylvania ESI database, for additional human-use information. These data do not necessarily represent all human-use sites in Delaware/New Jersey/Pennsylvania.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:
Spatial components for the human-use data layers can come from expert interviews, hardcopy, or digital sources. Most of the spatial components of the human-use data layers are developed from pre-existing digital or hardcopy sources and reflect the positional accuracy of these original data. Some of the spatial components of the human-use data layers are compiled on hardcopy base maps with a scale of 1:45,000. See the Lineage and Process_Description sections for more information on the original source data and how these data were integrated or manipulated to create the final data set.

Lineage:

Source_Information:
Source_Citation:

Citation_Information:
Originator:
DELaware Department of Natural Resources and Environmental Control (DNREC)

Publication_Date:
2012

Title:
DELAWARE BOAT RAMPS AND FISHING PIERS

Geospatial_Data_Presentation_Form:
vector digital data

Other_Citation_Details:
UNPUBLISHED

Type_of_Source_Media:
EMAIL

Source_Time_Period_of_Content:

Time_Period_Information:
Single_Date/Time:
Calendar_Date:
2012

Source_Currentness_Reference:
UNPUBLISHED

Type of Source Media:
EMAIL

Source Time Period of Content:
Time Period Information:
Single Date/Time:
Calendar Date:
2013

Source Currentness Reference:
DATE OF COMMUNICATION

Source Citation Abbreviation:
Src_7

Source Contribution:
SOCECON INFORMATION

Source Information:
Source Citation:
Citation Information:
Originator:
FEDERAL AVIATION ADMINISTRATION (FAA) AERONAUTICAL INFORMATION SERVICES, ATA-100
Publication Date:
2012
Title:
AIRPORTS
Geospatial Data Presentation Form:
vector digital data
Publication Information:
Publication Place:
WASHINGTON, D.C.
Publisher:
RESEARCH AND INNOVATIVE TECHNOLOGY ADMINISTRATION'S BUREAU OF TRANSPORTATION STATISTICS (RITA/BTS)

Other Citation Details:
FROM THE NATIONAL TRANSPORTATION ATLAS DATABASES (NTAD) 2012
Online Linkage:

Type of Source Media:
online

Source Time Period of Content:
Time Period Information:
Single Date/Time:
Calendar Date:
2012

Source Currentness Reference:
DATE OF PUBLICATION

Source Citation Abbreviation:
Src_8

Source Contribution:
SOCECON INFORMATION

Source Information:
Source Citation:
Citation Information:
Originator:
GOOGLE EARTH
Publication Date:
2013
Title:
GOOGLE EARTH IMAGERY
Geospatial Data Presentation Form:
Title:
NJDEP STATE OWNED, PROTECTED OPEN SPACE AND RECREATION AREAS IN NEW JERSEY

Geospatial_Data_Presentation_Form:
vector digital data

Publication_Information:
Publication_Date: 2013

Publisher:
NJ DEPARTMENT OF ENVIRONMENTAL PROTECTION (NJDEP)

Online_Linkage:
http://www.state.nj.us/dep/gis/digidownload/zips/statewide/newstate.zip

Type_of_Source_Media:
one

Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 2012

Source_Currentness_Reference:
DATE OF PUBLICATION

Source_Citation_Abbreviation:
Src_11

Source_Contribution:
SOCECON INFORMATION

Source_Information:
Source_Citation:
Citation_Information:
Originator:
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION (NJDEP)

Publication_Date: 2013

Title:
NEW JERSEY BEACH ACCESS SITES

Geospatial_Data_Presentation_Form:
vector digital data

Other_Citation_Details:
UNPUBLISHED

Type_of_Source_Media:
EMAIL

Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 2013

Source_Currentness_Reference:
DATE OF COMMUNICATION

Source_Citation_Abbreviation:
Src_12

Source_Contribution:
SOCECON INFORMATION

Source_Information:
Source_Citation:
Citation_Information:
Originator:
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION (NJDEP)

Publication_Date: 2010

Title:
The mapping extent was dependent upon information availability and location of mapped coastal habitats and shorelines. The main sources of data used to depict human-use resources for this data layer were digital data sets provided by the following agencies: Pennsylvania Fish and Boat Commission (PFBC), New Jersey Department of Environmental Protection (NJDEP) Division of Fish and Wildlife (F&W) Bureaus of Marine Fisheries and Shellfisheries (BMF & BSF), Federal Aviation Administration (FAA), Delaware Department of Natural Resources and Environmental Control (DNREC), Delaware River and Bay Authority (DRBA), United States Coast Guard (USCG), NJDEP, Natural and Historic Resources Historic Preservation Office (HPO), Delaware State Historic Preservation Office, and the National Park Service (NPS). Access Sites: Access site data was provided by NJDEP and indicates beach and river access locations. Airports / Heliports: Information on the locations of airports and heliports was downloaded from the National Transportation Atlas Databases maintained by the FAA. Archaeological / Historic sites: National Park Service (NPS) National Register of Historic Places data (2007) was used for all three states to depict historic sites. Delaware archaeological / historic site data was provided by the DE Division of Historical and Cultural Affairs. Four data sets were provided for inclusion in the ESI: DE National Historic Landmarks, DE State Historic Register Districts, DE National Register dataset, and DE National Historic Properties. All archaeological site points from the pre-processed data sets were buffered and offset prior to plotting in the ESI to protect the sensitivity of the resources. New Jersey Archaeological / Historic sites: NJ archaeological and historic site data was provided by NJDEP Natural and Historic Resources Historic Preservation Office (HPO). NJ HPO provided a nj_stgrd layer, which included one added attribute from the version available at DEP’s downloads page. The site_status field in the data set as provided, which is the NAME field in the ESI, indicates National Register eligibility status of the site(s) within the grid determining whether sites are one of three statuses: listed, eligible, or identified. ‘Listed’ sites are included in the NJ or National Registers of historic places; ‘eligible’ sites have been determined eligible for inclusion through federal or state processes as administered by the HPO; ‘identified’ sites have been identified through cultural resource survey or other documentation on file at the HPO. The centroid point of each grid cell was used for data display purposes in the ESI. Please note: This atlas was developed using NJDEP GIS digital data for archaeological and historic sites, but this secondary product has not been verified by NJDEP and is not state-authorized. Boat Ramps: Boat ramp location data was provided by NJDEP, PFBC, DNREC and NJ SeaGrant Consortium. Coast Guard: USCG locations are located in all 3 states. Location data was provided by the USCG. Ferries: Three ferries occur in the Area of Interest (AOI): Cape May – Lewes Ferry (between NJ and DE), Fort Mott – Fort Delaware Ferry (between NJ and DE), and the Riverlink Ferry (between NJ and PA). Ferry data was provided by the Delaware River and Bay Authority. Marinas: Marina location data was provided by PFBC, DNREC, and NJ SeaGrant Consortium. Recreational Fishing: Recreational fishing locations were provided by NJDEP DFW Bureau of Marine Fisheries and DNREC. Water Intake: Locations of drinking water intakes were provided by the DNREC. The above digital and/or hardcopy sources were compiled by the project biologist to create the SOCECON data layer. Depending on the type of source data, three general approaches are
used for compiling the data layer: 1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:45,000 topographic quadrangles and digitized; 2) hardcopy maps are digitized at their source scale; 3) digital data layers are evaluated and used “as is” or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer. The ESI, biology, and human-use data are compiled into the standard ESI digital data format. A second set of interviews with participating resource experts are conducted to review the compiled data. If necessary, edits to the SOCECON data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.

**Process_Date:**
201403

**Process_Contact:**

**Contact Information:**

- **Contact_Organization_Primary:**
  - **Contact_Organization:** NOAA, Office of Response and Restoration
- **Contact_Person:**
  - ESI Manager

**Contact_Address:**

- **Address_Type:** Physical address
- **Address:** 7600 Sand Point Way, N.E.
- **City:** Seattle
- **State_or_Province:** Washington
- **Postal_Code:** 98115-6349

**Contact_Voice_Telephone:**
(206) 526-6944

**Contact_Facsimile_Telephone:**
(206) 526-6329

**Contact_Electronic_Mail_Address:**
orr.esi@noaa.gov

**Spatial_Data_Organization_Information:**

**Direct_Spatial_Reference_Method:** Vector

**Point_and_Vector_Object_Information:**

**SDTS_Terms_Description:**

- **SDTS_Point_and_Vector_Object_Type:** Complete chain
  - **Point_and_Vector_Object_Count:** 18

**SDTS_Terms_Description:**

- **SDTS_Point_and_Vector_Object_Type:** Link
  - **Point_and_Vector_Object_Count:** 1650

**SDTS_Terms_Description:**

- **SDTS_Point_and_Vector_Object_Type:** Entity point
  - **Point_and_Vector_Object_Count:** 4427

**SDTS_Terms_Description:**

- **SDTS_Point_and_Vector_Object_Type:** Node, planar graph

Back To Index
Point and Vector Object Count: 25

Spatial Reference Information:

Horizontal Coordinate System Definition:
- Geographic:
  - Latitude Resolution: 0.0000001
  - Longitude Resolution: 0.0000001
- Geographic Coordinate Units: Decimal degrees

Geodetic Model:
- Horizontal Datum Name: North American Datum of 1983
- Ellipsoid Name: Geodetic Reference System 80
- Semi-major Axis: 6378137.000000
- Denominator of Flattening Ratio: 298.257222

Entity and Attribute Information:

Detailed Description:
- Entity Type:
  - Entity Type Label: SOCECON.AAT
  - Entity Type Definition: The SOCECON.AAT table contains attribute information for the vector lines representing roads/bridges and state borders.
  - Entity Type Definition Source: NOAA ESI Guidelines
- Attribute:
  - Attribute Label: TYPE
  - Attribute Definition: The human-use features depicted on the maps are those that could be impacted by an oil spill or could provide access for response operations. TYPE can be used as a quick identifier for the socioeconomic or human-use point features and is the attribute that is used to symbolize the layer. Greater detail about the object is provided in the SOC_DAT table.
  - Attribute Definition Source: NOAA ESI Guidelines
- Attribute Domain Values:
  - Enumerated Domain:
    - Enumerated Domain Value: R
      - Enumerated Domain Value Definition: Road, Transportation, or Bridge
      - Enumerated Domain Value Definition Source: NOAA ESI Guidelines
  - Enumerated Domain Value: SB
    - Enumerated Domain Value Definition:
State Border

*Enumerated_Domain_Value_DEFINITION_Source:* NOAA ESI Guidelines

**Detailed_Description:**

**Entity_Type:**

- **Entity_Type_Label:** SOCECON.PAT
- **Entity_Type_DEFINITION:** The SOCECON.PAT table contains attribute information for the vector points representing access sites, airports, archaeological sites, boat ramps, coast guard stations, ferries, heliports, historical sites, marinas, recreational fishing, and water intakes. Note that all attribute information is stored in a series of relational files, described below. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the relationships between attribute tables in the ESI data structure.

*Entity_Type_DEFINITION_Source:* NOAA ESI Guidelines

**Attribute:**

- **Attribute_Label:** TYPE
- **Attribute_DEFINITION:** The human-use features depicted on the maps are those that could be impacted by an oil spill or could provide access for response operations. TYPE can be used as a quick identifier for the socioeconomic or human-use point features and is the attribute that is used to symbolize the layer. Greater detail about the object is provided in the SOC_DAT table.

*Attribute_DEFINITION_Source:* NOAA ESI Guidelines

**Attribute_Domain_Values:**

- **Enumerated_Domain:**
  - **Enumerated_Domain_Value:** A
    - **Enumerated_Domain_Value_DEFINITION:** Airport
      - **Enumerated_Domain_Value_DEFINITION_Source:** NOAA ESI Guidelines
  - **Enumerated_Domain_Value:** A2
    - **Enumerated_Domain_Value_DEFINITION:** Access
      - **Enumerated_Domain_Value_DEFINITION_Source:** NOAA ESI Guidelines
  - **Enumerated_Domain_Value:** AS
    - **Enumerated_Domain_Value_DEFINITION:** Archaeological Site
      - **Enumerated_Domain_Value_DEFINITION_Source:** NOAA ESI Guidelines
  - **Enumerated_Domain_Value:** BR
    - **Enumerated_Domain_Value_DEFINITION:** Boat Ramp
      - **Enumerated_Domain_Value_DEFINITION_Source:** NOAA ESI Guidelines

*Attribute_Domain_Values:*
Attribute: ID

Attribute Definition: An identifier that links vector objects in the human-use data layers to records in the SOC_LUT data table. ID is a concatenation of atlas number (212), element number (10), and record number.
NOAA

Attribute Domain Values:
Range Domain:
  Range Domain Minimum: 2121000001
  Range Domain Maximum: 2121004427

Attribute:
  Attribute Label: HUNUM
  Attribute Definition: An identifier that links directly to the SOC_DAT table.
  Attribute Definition Source: NOAA

Attribute Domain Values:
Range Domain:
  Range Domain Minimum: 212000001
  Range Domain Maximum: 212000687

Detailed Description:

Entity Type:
  Entity Type Label: SOC_LUT
  Entity Type Definition: The data table SOC_LUT is a lookup table that contains items necessary for linking vector objects in the human-use data layers with the SOC_DAT data table. See the Browse Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.
  Entity Type Definition Source: NOAA ESI Guidelines

Attribute:
  Attribute Label: HUNUM
  Attribute Definition: An identifier that links records in the SOC_LUT data table to records in the SOC_DAT data table. HUNUM values of 0 are holes in the polygons and do not contain information.
  Attribute Definition Source: NOAA

Attribute Domain Values:
Range Domain:
  Range Domain Minimum: 212000001
  Range Domain Maximum: 212000786

Attribute:
  Attribute Label: ID
  Attribute Definition: An identifier that links vector objects in the human-use data layers to records in the SOC_LUT data table. ID is a concatenation of atlas number (212), element number (10), and record number. ID values of 9999 are holes in polygons and do not contain information.
  Attribute Definition Source: NOAA

Attribute Domain Values:
Range Domain:
  Range Domain Minimum: 212000001
  Range Domain Maximum: 2120003606

Detailed Description:
Entity Type:
Entity Type Label: SOC_DAT
Entity Type Definition: The data table SOC_DAT contains both human-use attribute data and items necessary for linking the human-use spatial data layers to the SOURCES data table. See the Browse Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.
Entity Type Definition Source: NOAA ESI Guidelines

Attribute:
Attribute Label: HUNUM
Attribute Definition: An identifier that links records in the SOC_DAT data table to records in the SOC_LUT data table. HUNUM values of 0 are holes in the polygons and do not contain information.
Attribute Definition Source: NOAA

Attribute Domain Values:
Range Domain:
Range Domain Minimum: 212000001
Range Domain Maximum: 212000786

Attribute:
Attribute Label: TYPE
Attribute Definition: The human-use features depicted on the maps are those that could be impacted by an oil spill or could provide access for response operations.
Attribute Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: ACCESS
Enumerated Domain Value Definition: Access
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: AIRPORT
Enumerated Domain Value Definition: Airport
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: ARCHAEOLOGICAL SITE
Enumerated Domain Value Definition: Archaeological Site
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: ARTIFICIAL REEF
Artificial Reef

Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

BOAT RAMP

Enumerated_Domain_Value_Definition:

Boat Ramp

Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

COAST GUARD

Enumerated_Domain_Value_Definition:

Coast Guard

Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

FERRY

Enumerated_Domain_Value_Definition:

Ferry

Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

HELIPORT

Enumerated_Domain_Value_Definition:

Heliport

Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

HISTORICAL SITE

Enumerated_Domain_Value_Definition:

Historical Site

Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

MANAGEMENT AREA

Enumerated_Domain_Value_Definition:

Management Area

Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

MARINA

Enumerated_Domain_Value_Definition:

Marina

Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated Domain:
  Enumerated Domain Value:
    NATURE CONSERVANCY
  Enumerated Domain Value Definition:
    Nature Conservancy
  Enumerated Domain Value Definition Source:
    NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value:
      PARK
    Enumerated Domain Value Definition:
      Regional or State Park
    Enumerated Domain Value Definition Source:
      NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value:
      RECREATIONAL FISHING
    Enumerated Domain Value Definition:
      Recreational Fishing
    Enumerated Domain Value Definition Source:
      NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value:
      WATER INTAKE
    Enumerated Domain Value Definition:
      Water Intake
    Enumerated Domain Value Definition Source:
      NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value:
      WILDLIFE REFUGE
    Enumerated Domain Value Definition:
      Wildlife Refuge
    Enumerated Domain Value Definition Source:
      NOAA ESI Guidelines

Attribute:
  Attribute Label:
    NAME
  Attribute Definition:
    The feature name.
  Attribute Definition Source:
    NOAA ESI Guidelines
  Attribute Domain Values:
    Unrepresentable Domain:
      Acceptable values change from atlas to atlas.

Attribute:
  Attribute Label:
    CONTACT
  Attribute Definition:
    Contact person or entity.
  Attribute Definition Source:
    NOAA ESI Guidelines
  Attribute Domain Values:
    Unrepresentable Domain:
      Acceptable values change from atlas to atlas.
Attribute: PHONE

Attribute Label: PHONE
Attribute Definition: Contact telephone number.
Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value:
  Any character
  Enumerated Domain Value Definition:
  Free text
  Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute: G_SOURCE

Attribute Label: G_SOURCE
Attribute Definition: Geographic source identifier that links records in the SOC_DAT data table to records in the SOURCES data table.
Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Range Domain:
  Range Domain Minimum: 1
  Range Domain Maximum: N

Attribute: A_SOURCE

Attribute Label: A_SOURCE
Attribute Definition: Attribute source identifier that links records in the SOC_DAT data table to records in the SOURCES data table.
Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Range Domain:
  Range Domain Minimum: 1
  Range Domain Maximum: N

Detailed Description:

Entity Type: SOURCES

Entity Type Label: SOURCES
Entity Type Definition: The data table SOURCES contains the primary sources used to create the ESI data set. See the Browse Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.
Entity Type Definition Source: NOAA ESI Guidelines

Attribute: SOURCE_ID

Attribute Label: SOURCE_ID
Attribute Definition: Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; SOURCE_ID and ESI_SOURCE in the ESIL and ESIP data layers; and SOURCE_ID in the HYDRO data layer.
Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
  Range Domain:
    Range Domain Minimum: 1
    Range Domain Maximum: N

Attribute:
  Attribute Label: ORIGINATOR
  Attribute Definition: Author or developer of source material or data set.
  Attribute Definition Source: NOAA ESI Guidelines
  Attribute Domain Values:
    Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:
  Attribute Label: DATE_PUB
  Attribute Definition: Date of source material, publication, or date of personal communication with expert source.
  Attribute Definition Source: NOAA ESI Guidelines
  Attribute Domain Values:
    Enumerated Domain:
      Enumerated Domain Value: YYYYMM
      Enumerated Domain Value Definition: YYYY for year and optionally MM for month
      Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute:
  Attribute Label: TITLE
  Attribute Definition: Title of source material or data.
  Attribute Definition Source: NOAA ESI Guidelines
  Attribute Domain Values:
    Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:
  Attribute Label: DATA_FORMAT
  Attribute Definition: The format of the source material.
  Attribute Definition Source: NOAA ESI Guidelines
  Attribute Domain Values:
    Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:
  Attribute Label: PUB_PLACE
  Attribute Definition: Publication place.
  Attribute Definition Source: NOAA ESI Guidelines
  Attribute Domain Values:
    Unrepresentable Domain:
Acceptable values change from atlas to atlas.

Attribute:
   Attribute_Label: PUBLISHER
   Attribute_Definition: Publisher.
   Attribute_Definition_Source: NOAA ESI Guidelines
   Attribute_Domain_Values:
      Unrepresentable_Domain:
         Acceptable values change from atlas to atlas.

Attribute:
   Attribute_Label: PUBLICATION
   Attribute_Definition: Additional citation information.
   Attribute_Definition_Source: NOAA ESI Guidelines
   Attribute_Domain_Values:
      Unrepresentable_Domain:
         Acceptable values change from atlas to atlas.

Attribute:
   Attribute_Label: ONLINE_LINK
   Attribute_Definition: Online computer resource URL.
   Attribute_Definition_Source: NOAA ESI Guidelines
   Attribute_Domain_Values:
      Unrepresentable_Domain:
         Acceptable values change from atlas to atlas.

Attribute:
   Attribute_Label: SCALE
   Attribute_Definition: Description of the source scale.
   Attribute_Definition_Source: NOAA ESI Guidelines
   Attribute_Domain_Values:
      Unrepresentable_Domain:
         Acceptable values change from atlas to atlas.

Attribute:
   Attribute_Label: TIME_PERIOD
   Attribute_Definition: Date(s) of data collection that the source material is based upon.
   Attribute_Definition_Source: NOAA ESI Guidelines
   Attribute_Domain_Values:
      Unrepresentable_Domain:
         Acceptable values change from atlas to atlas.

Overview_Description:
Entity and Attribute Overview:
Two relational attribute or data tables, SOC_DAT, and SOURCES, are used to store the complex socioeconomic data in the ESI data structure. The geographic data layer containing socioeconomic data resource information (in this case, SOCECON) is linked to the Socioeconomic Resources table (SOC_DAT) using the unique ID and the lookup table SOC_LUT, or it can be linked directly using HUNUM. HUNUM is a unique reference number concatenated with the atlas number (for Delaware/New Jersey/Pennsylvania, the number is 212). ID is a unique combination of the atlas number (212), an element specific number (SOCECON = 10), and a unique record number. SOC_DAT and the other relational data tables are described in the Detailed_Description sections. See the Browse_Graphic section for a link to
the entity-relationship diagram, which describes the way these tables relate to the geographic data layers and other attribute tables in the ESI data structure.

Entity_and_Attribute_Detail_Citation:
A complete description of entity types, attributes, and attribute values for ESI atlases can be found in the NOAA ESI Guidelines (http://response.restoration.noaa.gov/esi_guidelines).

Distribution_Information:
Distributor:

Contact_Information:
Contact_Person_Primary:
Contact_Person:
ESI Manager
Contact_Organization:
NOAA, Office of Response and Restoration

Contact_Address:
Address_Type:
Physical Address
Address:
7600 Sand Point Way N.E.
City:
Seattle
State_or_Province:
Washington
Postal_Code:
98115-6349

Contact_Voice_Telephone:
(206) 526-6944

Contact_Facsimile_Telephone:
(206) 526-6329

Contact_Electronic_Mail_Address:
or.esi@noaa.gov

Resource_Description:
Downloadable Data

Distribution_Liability:
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format. If problems are encountered either in downloading the ESI data or if any file appears corrupted, please contact the ESI manager.

Custom_Order_Process:
Contact NOAA if you require the data be provided to you on CD/DVD. (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export files, Shapefiles, and a file Geodatabase (the recommended format). The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: BIRDS (Bird Polygons)

Metadata:

- Identification Information
- Data Quality Information
- Spatial Data Organization Information
- Spatial Reference Information
- Entity and Attribute Information
- Distribution Information
- Metadata Reference Information

Identification Information:

Citation Information:

Originator:

Originator:
Department of Homeland Security, United States Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.

Publication Date:
201403

Title:
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: BIRDS (Bird Polygons)

Edition:
Second

Geospatial Data Presentation Form:
vector digital data

Series Information:

Series Name:
None

Issue Identification:
Delaware/New Jersey/Pennsylvania

Publication Information:

Publication Place:
Seattle, Washington

Publisher:
NOAA's Ocean Service, Office of Response and Restoration (OR&R), Emergency Response Division (ERD).

Other Citation Details:

Online Linkage:
http://response.restoration.noaa.gov/esi

Online Linkage:
http://response.restoration.noaa.gov/esi_download

Online Linkage:
http://response.restoration.noaa.gov/esi_guidelines

Description:

Abstract:
This data set contains sensitive biological resource data for alcids, diving birds, gulls, terns, passerines, pelagic birds, raptors, shorebirds, wading birds, and waterfowl in Delaware/New Jersey/Pennsylvania. Vector polygons in this data
set represent bird nesting, migratory staging, and wintering sites. Species specific abundance, seasonality, status, life
history, and source information are stored in relational data tables (described below) designed to be used in
conjunction with this spatial data layer. This data set comprises a portion of the ESI data for Delaware/New
Jersey/Pennsylvania. 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 NESTS data layer, part of the larger Delaware/New
Jersey/Pennsylvania ESI database, for additional bird information.

**Purpose:**
The ESI data were collected, mapped, and digitized to provide environmental data for oil spill planning and response.
The Clean Water Act with amendments by the Oil Pollution Act of 1990 requires response plans for immediate and
effective protection of sensitive resources.

**Time_Period_of_Content:**

**Time_Period_Information:**

**Range_of_Dates/Times:**

**Beginning_Date:**
1980

**Ending_Date:**
2014

**Currentness_Reference:**
The data were compiled during 2013-2014. The currentness dates for the data range from 1980 to 2014 and are
documented in the Lineage section.

**Status:**

**Progress:**
Complete

**Maintenance_and_Update_Frequency:**
None Scheduled

**Spatial_Domain:**

**Bounding_Coordinates:**

**West_BoundingCoordinate:**
-75.75000

**East_BoundingCoordinate:**
-74.03800

**North_BoundingCoordinate:**
40.23700

**South_BoundingCoordinate:**
38.37500

**Keywords:**

**Theme:**

**Theme_Keyword_Thesaurus:**
ISO 19115 Topic Category

**Theme_Keyword:**
biota

**Theme_Keyword:**
environment

**Theme:**

**Theme_Keyword_Thesaurus:**
None

**Theme_Keyword:**
Environmental Monitoring

**Theme_Keyword:**
ESI

**Theme_Keyword:**
Sensitivity maps

**Theme_Keyword:**
Coastal resources

**Theme_Keyword:**
Oil spill planning

**Theme_Keyword:**
Coastal Zone Management
Wildlife

Theme_Keyword:

Bird

Theme:

Theme_Keyword_Thesaurus:

NOS Data Explorer Topic Category

Theme_Keyword:

Environmental Monitoring

Place:

Place_Keyword_Thesaurus:

None

Place_Keyword:

Delaware/New Jersey/Pennsylvania

Access_Constraints:

None

Use_Constraints:

DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Management boundaries are not to be considered legal boundaries. Edges may have been altered for cartographic processes. Besides the above warnings, there are no use constraints on these data. Note that the ESI database should not be used to the exclusion of other pertinent data or information held by state or federal agencies or other organizations. Likewise, information contained in the database cannot be used in place of consultations with environmental, natural resource, and cultural resource agencies, or in place of field surveys. Recognize that the information contained in the ESI database represents known concentration areas or occurrences of natural, cultural, and human-use resources, but does not necessarily represent the full distribution or range of each species or resource. This is particularly important to recognize when considering potential impacts to protected resources, such as endangered species, wetlands, etc. Acknowledgment of the originators, publishers, contributors, and sources listed would be appreciated in products derived from these data.

Browse_Graphic:

Browse_Graphic_File_Name:


Browse_Graphic_File_Description:

Depicts the relationships between spatial data layers and attribute data tables for the Delaware/New Jersey/Pennsylvania ESI data.

Browse_Graphic_File_Type:

JPEG

Browse_Graphic:

Browse_Graphic_File_Name:


Browse_Graphic_File_Description:

Depicts the relationships between spatial data layers and desktop data tables for the Delaware/New Jersey/Pennsylvania ESI data.

Browse_Graphic_File_Type:

JPEG

Data_Set_Credit:

This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Office of Response and Restoration (OR&R), Emergency Response Division (ERD), Seattle, Washington, and The Department of Homeland Security, United States Coast Guard Office of Incident Management and Preparedness, Washington, D.C.

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(R) (version 10.2) and SQL SERVER(R) (version 2005). The hardware configuration is PCs with Windows Operating System 7. The Spatial_Data_Organization Information section refers only to the source files in the ARC export format. The following files are included in the data set: benthic.e00, birds.e00, esil.e00, esip.e00, fish.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, soccocon.e00, and t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut.e00, biofile.e00, biore.e00, breed.e00, breed_dt.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, sources.e00, species.e00, and status.e00.

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**Attribute_Accuracy:**

**Attribute_Accuracy_Report:**

A multi-stage error checking process is used to verify both attribute accuracy and logical consistency throughout data production. The process includes a standardized data entry methodology, hardcopy data review by in-house and external resource experts, a final Quality Assurance/Quality Control (QA/QC) process, and multiple automated logical consistency checks. Quantitative data (such as densities, counts, abundances, or concentrations) provided by resource experts for inclusion in the data set may vary widely in attribute accuracy, depending upon the methodology used to collect and compile such data. For a more detailed evaluation of source data attribute accuracy, contact the sources listed in the Lineage section.

**Logical_Consistency_Report:**

A multi-stage error checking process, described in the above Attribute_Accuracy_Report, is used to verify both attribute accuracy and logical consistency throughout data production. This process includes multiple automated logical consistency checks that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and SQL SERVER(R) to ARC/INFO(R) consistencies. After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks. In the process of checking for topological and database consistencies, new ID's and RARNUM's or HUNUM's are also generated. The new ID's are a combination of atlas number, element number, and record number. In addition, the value used to represent the element is modified to reflect the type of feature being mapped. In the case of an element that is normally represented by a point or polygon, a value of 20 is added to the standard element value for mapping of linear features. In the case where an element usually mapped as a polygon is represented by a point, a value of 30 is added to the regular element value. The RARNUM's are also modified to include the atlas number, so multiple atlases can be combined and RARNUM's remain unique. RARNUM's are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUM's are also modified to include the atlas number.

**Completeness_Report:**

These data represent a synthesis of expert knowledge, available hardcopy documents, survey data, maps, and digital data on bird nesting, wintering, migratory staging and other spatial/temporal concentration areas. See also the NESTS data layer, part of the larger Delaware/New Jersey/Pennsylvania ESI database, for additional bird information. These data do not necessarily represent all bird occurrences in Delaware/New Jersey/Pennsylvania. The following species are included in this data set:

(Species_ID, Common Name, Scientific Name [n/a if not applicable]): 1, Common loon, Gavia immer; 3, Red-throated loon, Gavia stellata; 5, Horned grebe, Podiceps auritus; 8, Double-crested cormorant, Phalacrocorax auritus; 11, Tundra swan, Cygnus columbianus; 12, Canada goose, Branta canadensis; 13, Brant, Branta bernicla; 15, Snow goose, Chen caerulescens; 16, Mallard, Anas platyrhynchos; 17, Northern pintail, Anas acuta; 18, Green-winged teal, Anas crecca; 20, Northern shoveler, Anas clypeata; 21, Canvasback, Aythya valisineria; 22, Greater scaup, Aythya marila; 24, Common goldeneye, Bucephala clangula; 26, Bufflehead, Bucephala albeola; 27, Long-tailed duck, Clangula hyemalis; 29, White-winged scoter, Melanitta fusca; 30, Surf scoter, Melanitta perspicillata; 32, Common merganser, Mergus merganser; 33, Red-breasted merganser, Mergus serrator; 34, American coot, Fulica americana; 38, Herring gull, Larus argentatus; 40, Ring-billed gull, Larus delawarensis; 45, Common tern, Sterna hirundo; 52, Wilson's phalarope, Phalaropus tricolor; 54, Great blue heron, Ardea herodias; 55, Whimbrel, Numenius phaeopus; 56, Spotted sandpiper, Actitis macularia; 58, Greater yellowlegs, Tringa melanoleuca; 59, Lesser yellowlegs, Tringa flavipes; 60, Red knot, Calidris canutus; 61, Pectoral sandpiper, Calidris melanotos; 62, Least sandpiper, Calidris minutilla; 63, Dunlin, Calidris alpina; 64, Short-billed dowitcher, Limnodromus griseus; 65, Long-billed dowitcher, Limnodromus scolopaceus; 66, Western sandpiper, Calidris mauri; 67, Sanderling, Calidris alba; 69, Semipalmated plover, Charadrius semipalmatus; 70, Killdeer, Charadrius vociferus; 71, Black-bellied plover, Pluvialis squatarola; 73, Ruddy turnstone, Arenaria interpres; 75, Razorbill, Alca torda; 76, Bald eagle, Haliaeetus leucocephalus; 77, Osprey, Pandion haliaetus; 86, Least tern, Sterna antillarum; 87, Little blue heron, Egretta caerulea; 88, Great egret, Ardea alba; 89, Snowy egret, Egretta thula; 90, Black-crowned night-heron, Nycticorax nycticorax; 91, Glossy ibis, Plegadis falcinellus; 92, Great black-backed gull, Larus marinus; 93, Cattle egret, Bubulcus ibis; 94, Tricolored heron, Egretta tricolor; 97, Green heron, Butorides virescens; 98, Laughing gull, Larus atricilla; 103, Common eider, Somateria mollissima; 107, Peregrine falcon, Falco peregrinus; 118, Brown pelican, Pelecanus occidentalis; 120, Yellow-crowned night-heron, Nyctanassa violacea; 123, Endangered diving bird, n/a; 124, Redhead, Aythya americana; 125, Clapper rail, Rallus longirostris; 127, Sooty tern, Onychoprion fuscatus; 133, Black skimmer, Rynchops niger; 134, Gull-billed tern, Gavialia gavialis; 135, Common tern, Sterna hirundo; 136, Caspian tern, Hydroprogne caspia; 137, Royal tern, Thalasseus maximus; 138, Forster's tern, Sterna longirostris; 139, Least tern, Sterna antillarum; 140, Northern pintail, Anas acuta; 142, Black-necked stilt, Ixobrychus exilis; 147, Savannah sparrow, Passerculus sandwichensis; 148, Ruddy duck, Oxyura jamaicensis; 152, Hudsonian godwit, Limosa haemastica; 153, Piping plover, Charadrius melodus; 155, Willet, Catoptrophorus semipalmatus; 156, Semipalmated sandpiper, Calidris pusilla; 162, Gadwall, Anas strepera; 164, American golden-plover, Pluvialis dominica; 167, Northern gannet, Morus bassanus; 169, American wigeon, Anas americana; 172, Sandhill crane, Grus canadensis; 173, American white pelican, Pelecanus erythrorhynchos; 176, Short-eared owl, Asio flammeus; 178, Least bittern, Ixobrychus exilis; 179, Pied-billed grebe, Podilymbus podiceps; 180, Ring-necked duck, Aythya collaris; 181, Northern harrier, Circus cyaneus; 184, King rail, Rallus elegans; 185, American bittern, Botaurus lentiginosus; 186, American black duck, Anas rubripes; 187, Virginia rail, Rallus limicola; 188, Sora, Porzana carolina; 190, Blue-winged teal,
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**Positional Accuracy:**

**Horizontal Positional Accuracy:**

Spatial components for the biological data layers can come from expert interviews, hardcopy, or digital sources. Some of the spatial components of the biological data layers may have been developed using regional experts who estimate concentration areas. It is difficult to estimate the positional accuracy of such data, except to state that they are compiled on hardcopy base maps with a scale of 1:45,000. Some of the spatial components of the biological data sets are developed from pre-existing digital or hardcopy sources and reflect the positional accuracy of these original data. Note that biological resource data by their very nature are considered "fuzzy", and this should be understood when considering the positional accuracy of vector digital objects representing these resources. See the Lineage and Process_Description sections for more information on the original source data and how these data were integrated or manipulated to create the final data set.

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**Source Information:**

**Source Citation:**

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**Publication Date:**

2014

**Title:**

BIRD SEASONALITY FOR NEW JERSEY

**Geospatial Data Presentation Form:**

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**Other Citation Details:**

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Delaware Bay ESI: BIRDS

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The mapping extent was dependent upon information availability and location of mapped coastal habitats and shorelines. Three main sources of data were used to depict bird distribution and seasonality for this data layer: 1) personal interviews with resource experts from: Delaware Department of Natural Resources and Environmental Control (DNREC), NJ Department of Environmental Protection Division of Fish and Wildlife (NJDEP F&W), NJDEP F&W Endangered and Nongame Species Program (ENSP), U.S. Fish and Wildlife Service (USFWS), U.S. Geological Survey (USGS), and Pennsylvania Game Commission (PGC); 2) numerous published and unpublished reports; and 3) digital/tabular data sets provided by: DNREC, NJDEP F&W, NJDEP ENSP, USFWS, USGS, and PGC. DE, NJ, and PA waterfowl: Waterfowl surveys were conducted in (11 zones in DE, 29 zones in NJ, and 2 zones in PA) from Oct.-Jan. ranging from 1980-2012 (dependent on state). In all three states, surveys provided simple counts of all species within the survey zones. A 'wetlands and inland water bodies' habitat class was created by selecting ESI 10A, -B, -C, and -D within the survey zones and buffering them by 10 m before merging them with all adjacent inland water bodies. The resulting polygons were then edited to eliminate any gaps or isolated polygons less than 10,000 m². The second habitat class was defined as ‘large open water bodies’. This habitat type includes the inland bays and sounds of DE and NJ as well as
portions of the Delaware River. Concentrations were calculated as the maximum value of summed points within
a month across all years surveyed and generalized to categorical bins of 10s, 100s, 1,000s, etc. Survey zones
were aggregated if they were geographically adjacent and had similar maximum counts and species
assemblages. Delaware Bay and Atlantic Ocean seabirds – Two data sets were used: 1) USFWS Atlantic Coast
Wintering Sea Duck Survey (ACWSDS) and the USGS Atlantic Offshore Seabird Dataset Catalog (AOSDC).
Based on expert advice, data was first grouped into nearshore (1 nautical mile from shore) and offshore (1-12
nm) polygons. Data was further subdivided between DE and NJ coasts, and between the Delaware Bay and open
ocean waters. Data from the ACWSDS were used for the majority of the ESI study area, as the data had better
coverage, replication, and consistency. The AOSDC data was only incorporated along the Delaware River
between the Delaware Memorial Bridge and Nantuxent Point, NJ/Bombay Hook, DE. The majority of surveys
for the ACWSDS were flown from Oct.-Mar. along predetermined latitudinal transects spaced 5 nm apart.
Concentrations of seabird species for a given region were calculated as the maximum value of summed points
within a survey period across all years surveyed. DE Element Occurrence Data – Rare and endangered species
of birds were mapped in part using element occurrence data provided by DNREC. Polygons with diameters
greater than 100 m were mapped as is and all other polygons were mapped after applying a polygonal buffer and
a randomized geographic shift. DE Shorebirds – DNREC provided polygonal data representing red knot
concentration areas during spring migration, beach nesting bird locations, and impoundments. Please note that
names were obscured for all DE species that are listed DE State endangered and/or federally threatened to
generic names such as ‘endangered shorebird’. DNREC also provided shorebird flock count data along
Delaware Bay beaches. Data from the last 10 years (2003-2013) was summarized for inclusion in the atlas and
was generalized to categorical bins of 10s, 100s, 1,000s, etc., representing the max counts for each species
within each site over the survey period. DE Marshbirds and Passerines – DNREC provided Delaware Breeding
Bird Atlas 2008-2012 data for secretive marsh birds and marsh-breeding passerines. In each BBA quad in which
a species was indicated as “present”, that species was mapped to all appropriate ESI habitats. DE NWR birds –
Bombay Hook and Prime Hook NWRs provided Integrated Waterbird Management and Monitoring (IWMM)
survey data, Saltmarsh Habitat and Avian Research Program (SHARP) survey data, and Saltmarsh Integrity
(SMI) survey data. The IWMM data was limited to discrete survey areas within each refuge. Data from
2010-2013 was summarized for inclusion in the atlas. Concentrations were generalized to categorical bins of
10s, 100s, 1,000s, etc., representing high counts for each species within each IWMM site over the survey period.
SHARP and SMI surveys covered refuge habitat more broadly, so they were used to create species lists that
covered the remaining extent of these refuges. New Jersey ENSP Shorebirds – Polygonal buffers were provided
by NJ ENSP for spring shorebird concentration areas and red knot ‘status assessments’. NJ ENSP provided
polygonal data on Colonial Waterbird nesting areas. Colonial waterbirds utilize many habitats for breeding,
including salt marshes and salt marsh islands, barrier islands and beaches, dredge spoil islands, and natural sand
shoals, particularly behind the barrier islands and in the major bay systems in coastal NJ. NJ ENSP Raptors - A
buffer, as specified by the data provider, was applied to all raptor nests that were delivered to RPI as points.
Raptor nests that were delivered to RPI as polygons (buffer was applied by NJ ENSP around nest site prior to
data delivery) were portrayed ‘as is’. NJ NWR birds – Supawna Meadows NWR provided marsh bird survey
and saltmarsh sparrow survey data. Species, including: shorebirds, wading birds, raptors, gulls, terns, and other
passerines were mapped to the entirety of the Supawna Meadows NWR and adjacent marshes. Pea Patch Island
(DE) nesting wading birds survey data were also provided by Supawna Meadows NWR. Data from Edwin B.
Forsythe NWR were compiled with data received from ENSP to capture the full suite and range of species
mapped within the reserve boundaries. Pennsylvania BBA birds – PGC provided data from the 2nd
Pennsylvania Breeding Bird Atlas (2ndPBBA). The 2ndPBBA atlas contained data on all breeding birds and
observance data of non-breeding birds. Breeding bird data records categorized as “Confirmed” or “Probable”
were mapped in the appropriate habitat for each species within the 2nd BBA quad where each species was
present. These records were listed with a nesting season in the ESI seasonality table. Observance data of
non-nesters (categorized in the dataset as “Observed”) were mapped in the ESI atlas when coordinates were
included with the record. Nesting seasons were not included in the ESI seasonality table for these records.
Pennsylvania raptors – Peregrine falcon (PA SE) and bald eagle (PA ST) nest locations were provided by PGC.
Nest points were mapped as is. Federally threatened (FT) and state listed endangered (SE) or threatened (ST) or
rare (not listed) bird species for which common names were obscured in one or more states (DE and/or NJ), due
to requests from data providers within those states, were renamed based on their federal or state listing status
and ESI subelement: e.g., ‘endangered tern’, ’threatened shorebird’, ‘rare passerine’, etc. The above digital and/or
hardcopy sources were compiled by the project biologist to create the BIRDS data layer. Depending on the type
of source data, three general approaches are used for compiling the data layer: 1) information gathered during
initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:45,000 topographic
quadangles and digitized; 2) hardcopy maps are digitized at their source scale; 3) digital data layers are
evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional
information on the type of source data for this data layer. The ESI, biology, and human-use data are compiled
into the standard ESI digital data format. A second set of interviews with participating resource experts are conducted to review the compiled data. If necessary, edits to the BIRDS data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.

Process_Date: 201403

Process_Contact:

Contact Information:

Contact Organization:
NOAA, Office of Response and Restoration

Contact Person:
ESI Manager

Contact Address:
Address Type:
Physical address
Address:
7600 Sand Point Way, N.E.

City:
Seattle

State or Province:
Washington

Postal Code:
98115-6349

Contact Voice Telephone:
(206) 526-6944

Contact Facsimile Telephone:
(206) 526-6329

Contact Electronic Mail Address:
orr.esi@noaa.gov

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:
5632

SDTS Terms Description:

SDTS Point and Vector Object Type:
Area point
Point and Vector Object Count:
5633

SDTS Terms Description:

SDTS Point and Vector Object Type:
Complete chain
Point and Vector Object Count:
13766

SDTS Terms Description:

SDTS Point and Vector Object Type:
Link
Point and Vector Object Count:
2305060

SDTS Terms Description:

SDTS Point and Vector Object Type:
Node, planar graph
Point and Vector Object Count:
10116

Spatial Reference Information:

Horizontal Coordinate System Definition:

Geographic:
Latitude Resolution: 0.0000001
Longitude Resolution: 0.0000001
Geographic Coordinate Units: Decimal degrees

Geodetic Model:
Horizontal Datum Name: North American Datum of 1983
Ellipsoid Name: Geodetic Reference System 80
Semi-major Axis: 6378137.000000
Denominator of Flattening Ratio: 298.257222

Entity and Attribute Information:

Detailed Description:

Entity Type:
Entity Type Label: BIRDS.PAT
Entity Type Definition: The BIRDS.PAT table contains attribute information for the vector polygons in this data set representing bird nesting, migratory staging, and wintering sites. Note that all attribute information is stored in a series of relational files, described below and in the Overview_Description section. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the relationships between attribute tables in the ESI data structure.
Entity Type Definition Source: NOAA ESI Guidelines

Attribute:
Attribute Label: ID
Attribute Definition: An identifier that links vector objects in the biology data layers to records in the BIO_LUT data table. ID is a concatenation of atlas number (212), element number (1), and record number. ID values of 9999 are holes in polygons and do not contain information.
Attribute Definition Source: NOAA
Attribute Domain Values:
Range Domain:
Range Domain Minimum: 2120100002
Range Domain Maximum: 2120106183

Attribute:
Attribute Label: RARNUM
Attribute Definition: An identifier that links directly to the BIORES table or the flat format BIOFILE table. RARNUM values of 0 are
holes in the polygons and do not contain information.

**Attribute Definition Source:**
NOAA

**Attribute Domain Values:**

- **Range Domain:**
  - **Range Domain Minimum:** 212000001
  - **Range Domain Maximum:** 212001031

**Detailed Description:**

**Entity Type:**

- **Entity Type Label:** BIO_LUT

**Entity Type Definition:**
The data table BIO_LUT is a lookup table that contains items necessary for linking vector objects in the biological data layers with the BIORES data table. Note that all attribute information is stored in a series of relational files, described below and in the Overview_Description section. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute:**

- **Attribute Label:** RARNUM

**Attribute Definition:**
An identifier that links records in the BIO_LUT data table to records in the BIORES data table or the flat format BIOFILE data table. RARNUM values of 0 are holes in polygons and do not contain information.

**Attribute Definition Source:**
NOAA

**Attribute Domain Values:**

- **Range Domain:**
  - **Range Domain Minimum:** 212000001
  - **Range Domain Maximum:** 212001295

**Attribute:**

- **Attribute Label:** ID

**Attribute Definition:**
An identifier that links vector objects in the biology data layers to records in the BIO_LUT data table. ID is a concatenation of atlas number (212), element number (1), and record number. ID values of 9999 are holes in polygons and do not contain information.

**Attribute Definition Source:**
NOAA

**Attribute Domain Values:**

- **Range Domain:**
  - **Range Domain Minimum:** 2120100002
  - **Range Domain Maximum:** 2120900295

**Detailed Description:**

**Entity Type:**

- **Entity Type Label:** BIORES

**Entity Type Definition:**
The data table BIORES contains both biological attribute data and items necessary for linking vector objects in the biological data layers via the BIO_LUT data table to other associated data tables. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

**Entity Type Definition Source:**
NOAA ESI Guidelines

Attribute:
  Attribute_Label: RARNUM
  Attribute_Definition: An identifier that links records in the BIORES data table to records in the BIO_LUT data table or the flat format BIOFILE data table.
  Attribute_Definition_Source: NOAA
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum: 212000001
      Range_Domain_Maximum: 212001295

Attribute:
  Attribute_LABEL: SPECIES_ID
  Attribute_Definition: Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI species list maintained at NOAA.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum: 1
      Range_Domain_Maximum: N

Attribute:
  Attribute_LABEL: CONC
  Attribute_Definition: The field CONC refers to "concentration," abundance, or density values, and may contain counts of individuals for each species present at a particular nesting or wintering site. The field may contain a term that describes relative abundance of birds at a particular site (XX INDIV or 1000S). In cases where no quantitative count data was available, the field may either be blank or contain descriptive terms such as "ABUNDANT", "HIGH", "COMMON", "OCCASIONAL", "RARE", "UNCOMMON", or "VERY-HIGH". If no concentration information was available from any source, the field was populated with ".". Counts were derived from a variety of surveys, and may range in date (see Lineage).
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:
  Attribute_LABEL: SEASON_ID
  Attribute_Definition: Numeric identifier for the unique monthly presence and life history characteristics of each species at a given location.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum: 1
      Range_Domain_Maximum: N
Attribute Label: G_SOURCE
Attribute Definition:
Geographic source identifier that links records in the BIORES data table to records in the SOURCES data table.
Attribute Definition Source:
NOAA ESI Guidelines
Attribute Domain Values:
Range Domain:
  Range Domain Minimum: 1
  Range Domain Maximum: N

Attribute Label: S_SOURCE
Attribute Definition:
Seasonality source identifier that links records in the BIORES data table to records in the SOURCES data table.
Attribute Definition Source:
NOAA ESI Guidelines
Attribute Domain Values:
Range Domain:
  Range Domain Minimum: 1
  Range Domain Maximum: N

Attribute Label: ELEMENT
Attribute Definition:
Major categories of biological data.
Attribute Definition Source:
NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: BIRD
  Enumerated Domain Value Definition: Birds
  Enumerated Domain Value Definition Source:
    NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: FISH
  Enumerated Domain Value Definition: Fish
  Enumerated Domain Value Definition Source:
    NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: HABITAT
  Enumerated Domain Value Definition: Habitats and plants
  Enumerated Domain Value Definition Source:
    NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: INVERT
Enumerated_Domain_Value_Definition:
Invertebrates
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
M_MAMMAL
Enumerated_Domain_Value_Definition:
Marine mammals
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
REPTILE
Enumerated_Domain_Value_Definition:
Reptiles and Amphibians
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
T_MAMMAL
Enumerated_Domain_Value_Definition:
Terrestrial mammals
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute:
Attribute_Label:
EL_SPE
Attribute_Definition:
Concatenation of ELEMENT and SPECIES_ID. This item links records in the BIORES data table to records in the SPECIES and STATUS data tables.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
E####
Enumerated_Domain_Value_Definition:
Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1; EL_SPE = 'B00001').
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute:
Attribute_Label:
EL_SPE_SEA
Attribute_Definition:
Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the BIORES data table to records in the SEASONAL and BREED data tables.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
E#######
Enumerated_Domain_Value_Definition:
Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID =
Entity Type:

Entity Type Label: SPECIES

Entity Type Definition: The data table SPECIES identifies all species in the ESI data set. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure. Refer to the Completeness_Report for a list of layer-specific species.

Entity Type Definition Source: NOAA ESI Guidelines

Attribute:

Attribute Label: SPECIES_ID

Attribute Definition: Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI species list maintained at NOAA.

Attribute Definition Source: NOAA ESI Guidelines

Attribute Domain Values:

Range Domain:

Range Domain Minimum: 1

Range Domain Maximum: N

Attribute:

Attribute Label: NAME

Attribute Definition: Species common name for the entire ESI data set.

Attribute Definition Source: NOAA ESI Guidelines

Attribute Domain Values:

Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute Label: GEN_SPEC

Attribute Definition: Species scientific name for the entire ESI data set.

Attribute Definition Source: NOAA ESI Guidelines

Attribute Domain Values:

Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute Label: ELEMENT

Attribute Definition: Major categories of biological data.

Attribute Definition Source: NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: BIRD

Enumerated Domain Value Definition: Birds
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      FISH
    Enumerated_Domain_Value_Definition: Fish
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      HABITAT
    Enumerated_Domain_Value_Definition: Habitats and plants
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      INVERT
    Enumerated_Domain_Value_Definition: Invertebrates
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      M_MAMMAL
    Enumerated_Domain_Value_Definition: Marine Mammals
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      REPTILE
    Enumerated_Domain_Value_Definition: Reptiles and Amphibians
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      T_MAMMAL
    Enumerated_Domain_Value_Definition: Terrestrial Mammals
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: SUBELEMENT
  Attribute_Definition: Element subgroup delineating a logical grouping of species.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
alcid
  Enumerated_Domain_Value_Definition:
  Alcid
  Enumerated_Domain_Value_Definition_Source:
  NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
  Enumerated_Domain_Value:
  amphibia
  Enumerated_Domain_Value_Definition:
  Amphibian
  Enumerated_Domain_Value_Definition_Source:
  NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
  Enumerated_Domain_Value:
  bivalve
  Enumerated_Domain_Value_Definition:
  Bivalve
  Enumerated_Domain_Value_Definition_Source:
  NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
  Enumerated_Domain_Value:
  cephalopod
  Enumerated_Domain_Value_Definition:
  Cephalopod
  Enumerated_Domain_Value_Definition_Source:
  NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
  Enumerated_Domain_Value:
  crab
  Enumerated_Domain_Value_Definition:
  Crab
  Enumerated_Domain_Value_Definition_Source:
  NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
  Enumerated_Domain_Value:
  diadromous
  Enumerated_Domain_Value_Definition:
  Diadromous fish
  Enumerated_Domain_Value_Definition_Source:
  NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
  Enumerated_Domain_Value:
  diving
  Enumerated_Domain_Value_Definition:
  Diving bird
  Enumerated_Domain_Value_Definition_Source:
  NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
  Enumerated_Domain_Value:
  dolphin
  Enumerated_Domain_Value_Definition:
  Dolphin
  Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      e_nursery
    Enumerated_Domain_Value_Definition:
      Estuarine nursery fish
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      fish
    Enumerated_Domain_Value_Definition:
      Fish
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      freshwater
    Enumerated_Domain_Value_Definition:
      Freshwater fish
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      gastropod
    Enumerated_Domain_Value_Definition:
      Gastropod
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      gull_tern
    Enumerated_Domain_Value_Definition:
      Gull or tern
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      insect
    Enumerated_Domain_Value_Definition:
      Insect
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      invert
    Enumerated_Domain_Value_Definition:
      Invertebrate
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
lobster
Enumerated_Domain_Value_Definition:
Lobster
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
m_benthic
Enumerated_Domain_Value_Definition:
Marine benthic fish
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
m_pelagic
Enumerated_Domain_Value_Definition:
Marine pelagic fish
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
passerine
Enumerated_Domain_Value_Definition:
Passerine bird
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
pelagic
Enumerated_Domain_Value_Definition:
Pelagic bird
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
pinniped
Enumerated_Domain_Value_Definition:
Pinniped
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
plant
Enumerated_Domain_Value_Definition:
Plant
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
raptor
Enumerated_Domain_Value_Definition:
Raptor
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value:
            sav
        Enumerated_Domain_Value_Definition:
            Submerged aquatic vegetation
        Enumerated_Domain_Value_Definition_Source:
            NOAA ESI Guidelines

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value:
            shorebird
        Enumerated_Domain_Value_Definition:
            Shorebird
        Enumerated_Domain_Value_Definition_Source:
            NOAA ESI Guidelines

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value:
            sm_mammal
        Enumerated_Domain_Value_Definition:
            Small mammal
        Enumerated_Domain_Value_Definition_Source:
            NOAA ESI Guidelines

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value:
            snake
        Enumerated_Domain_Value_Definition:
            Snake
        Enumerated_Domain_Value_Definition_Source:
            NOAA ESI Guidelines

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value:
            turtle
        Enumerated_Domain_Value_Definition:
            Turtle
        Enumerated_Domain_Value_Definition_Source:
            NOAA ESI Guidelines

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value:
            wading
        Enumerated_Domain_Value_Definition:
            Wading bird
        Enumerated_Domain_Value_Definition_Source:
            NOAA ESI Guidelines

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value:
            waterfowl
        Enumerated_Domain_Value_Definition:
            Waterfowl
        Enumerated_Domain_Value_Definition_Source:
            NOAA ESI Guidelines
wetland

\textit{Enumerated\_Domain\_Value\_Definition:}
Wetland

\textit{Enumerated\_Domain\_Value\_Definition\_Source:}
NOAA ESI Guidelines

\textbf{Attribute\_Domain\_Values:}

\textbf{Enumerated\_Domain:}

\textbf{Enumerated\_Domain\_Value:}
whale

\textit{Enumerated\_Domain\_Value\_Definition:}
Whale

\textit{Enumerated\_Domain\_Value\_Definition\_Source:}
NOAA ESI Guidelines

\textbf{Attribute:}

\textbf{Attribute\_Label:}
NHP

\textbf{Attribute\_Definition:}
Natural Heritage Program global ranking.

\textit{Attribute\_Definition\_Source:}
Network of Natural Heritage Program

\textbf{Attribute\_Domain\_Values:}

\textbf{Codeset\_Domain:}

\textbf{Codeset\_Name:}
NHP Global Conservation Status Rank

\textit{Codeset\_Source:}
Natural Heritage Program

\textbf{Attribute:}

\textbf{Attribute\_Label:}
DATE\_PUB

\textbf{Attribute\_Definition:}
Date of NHP listing.

\textit{Attribute\_Definition\_Source:}
NOAA ESI Guidelines

\textbf{Attribute\_Domain\_Values:}

\textbf{Enumerated\_Domain:}

\textbf{Enumerated\_Domain\_Value:}
YYYYMM

\textit{Enumerated\_Domain\_Value\_Definition:}
YYYY for year and optionally MM for month

\textit{Enumerated\_Domain\_Value\_Definition\_Source:}
NOAA ESI Guidelines

\textbf{Attribute\_Domain\_Values:}

\textbf{Enumerated\_Domain:}

\textbf{Enumerated\_Domain\_Value:}
0

\textit{Enumerated\_Domain\_Value\_Definition:}
Date unspecified

\textit{Enumerated\_Domain\_Value\_Definition\_Source:}
NOAA ESI Guidelines

\textbf{Attribute:}

\textbf{Attribute\_Label:}
EL\_SPE

\textbf{Attribute\_Definition:}
Concatenation of ELEMENT and SPECIES\_ID. This item links records in the SPECIES data table to records in the BIORES and STATUS data tables.

\textit{Attribute\_Definition\_Source:}
NOAA ESI Guidelines

\textbf{Attribute\_Domain\_Values:}

\textbf{Enumerated\_Domain:}

\textbf{Enumerated\_Domain\_Value:}
**Enumerated Domain Value Definition:**

Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1; EL_SPE = 'B00001').

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Entity Type:**

**Entity Type Label:**
SEASONAL

**Entity Type Definition:**
The data table SEASONAL contains information on the seasonal presence of each species associated with each spatial vector object. See the Browse Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

**Entity Type Definition Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute Label:**
ELEMENT

**Attribute Definition:**
Major categories of biological data.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**
BIRD

**Enumerated Domain Value Definition:**
Birds

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**
FISH

**Enumerated Domain Value Definition:**
Fish

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**
HABITAT

**Enumerated Domain Value Definition:**
Habitats and plants

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**
INVERT

**Enumerated Domain Value Definition:**
Invertebrates

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**
M_MAMMAL

**Enumerated Domain Value Definition:**
Marine Mammals

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
REPTILE
Enumerated Domain Value Definition:
Reptiles and Amphibians
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
T_MAMMAL
Enumerated Domain Value Definition:
Terrestrial Mammals
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute:
Attribute Label:
SPECIES_ID
Attribute Definition:
Numeric identifier for each species that is unique within each element and refers to a nationwide ESI species list maintained at NOAA.
Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Range Domain:
Range Domain Minimum:
1
Range Domain Maximum:
N

Attribute:
Attribute Label:
SEASON_ID
Attribute Definition:
Numeric identifier for the unique monthly presence and life history characteristics of each species at a given location.
Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Range Domain:
Range Domain Minimum:
1
Range Domain Maximum:
N

Attribute:
Attribute Label:
JAN
Attribute Definition:
January
Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
X
Enumerated Domain Value Definition:
Present in January
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute:
  Attribute Label: FEB
  Attribute Definition: February
  Attribute Definition Source: NOAA ESI Guidelines
  Attribute Domain Values:
    Enumerated Domain:
      Enumerated Domain Value: X
      Enumerated Domain Value Definition: Present in February
      Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute:
  Attribute Label: MAR
  Attribute Definition: March
  Attribute Definition Source: NOAA ESI Guidelines
  Attribute Domain Values:
    Enumerated Domain:
      Enumerated Domain Value: X
      Enumerated Domain Value Definition: Present in March
      Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute:
  Attribute Label: APR
  Attribute Definition: April
  Attribute Definition Source: NOAA ESI Guidelines
  Attribute Domain Values:
    Enumerated Domain:
      Enumerated Domain Value: X
      Enumerated Domain Value Definition: Present in April
      Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute:
  Attribute Label: MAY
  Attribute Definition: May
  Attribute Definition Source: NOAA ESI Guidelines
  Attribute Domain Values:
    Enumerated Domain:
      Enumerated Domain Value: X
      Enumerated Domain Value Definition: Present in May
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:

Attribute_Label: JUN
Attribute_Definition: June
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
X
Enumerated_Domain_Value_Definition:
Present in June
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:

Attribute_Label: JUL
Attribute_Definition: July
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
X
Enumerated_Domain_Value_Definition:
Present in July
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:

Attribute_Label: AUG
Attribute_Definition: August
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
X
Enumerated_Domain_Value_Definition:
Present in August
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:

Attribute_Label: SEP
Attribute_Definition: September
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
X
Enumerated_Domain_Value_Definition:
Present in September
**Enumerated_Domain_Value_Definition_Source:** NOAA ESI Guidelines

**Attribute:**

- **Attribute_Label:** OCT
- **Attribute_Definition:** October
- **Attribute_Definition_Source:** NOAA ESI Guidelines

**Attribute Domain Values:**

- **Enumerated_Domain:**
  - **Enumerated_Domain_Value:** X
  - **Enumerated_Domain_Value_Definition:** Present in October
  - **Enumerated_Domain_Value_Definition_Source:** NOAA ESI Guidelines

**Attribute:**

- **Attribute_Label:** NOV
- **Attribute_Definition:** November
- **Attribute_Definition_Source:** NOAA ESI Guidelines

**Attribute Domain Values:**

- **Enumerated_Domain:**
  - **Enumerated_Domain_Value:** X
  - **Enumerated_Domain_Value_Definition:** Present in November
  - **Enumerated_Domain_Value_Definition_Source:** NOAA ESI Guidelines

**Attribute:**

- **Attribute_Label:** DEC
- **Attribute_Definition:** December
- **Attribute_Definition_Source:** NOAA ESI Guidelines

**Attribute Domain Values:**

- **Enumerated_Domain:**
  - **Enumerated_Domain_Value:** X
  - **Enumerated_Domain_Value_Definition:** Present in December
  - **Enumerated_Domain_Value_Definition_Source:** NOAA ESI Guidelines

**Attribute:**

- **Attribute_Label:** EL_SPE_SEA
- **Attribute_Definition:** Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the SEASONAL data table to records in the BIORES and BREED data tables.
- **Attribute_Definition_Source:** NOAA ESI Guidelines

**Attribute Domain Values:**

- **Enumerated_Domain:**
  - **Enumerated_Domain_Value:** E####
  - **Enumerated_Domain_Value_Definition:** Delaware Bay ESI: BIRDS
Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').

_Enumerated_Domain_Value_Definition_Source:_
NOAA ESI Guidelines

**Detailed_Description:**

**Entity_Type:**

**Entity_Type_Label:** BREED

**Entity_Type_Definition:**
The data table BREED identifies the monthly presence of certain life-history stages or activities for each species at a given location.

**Entity_Type_Definition_Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute_Label:** EL_SPE_SEA

**Attribute_Definition:**
Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the BREED data table to records in the BIORES and SEASONAL data tables.

**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:** E####

_Enumerated_Domain_Value_Definition:_
Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').

**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute_Label:** MONTH

**Attribute_Definition:**
Two-digit calendar month. Each life history stage or activity type for a particular species can have up to 12 records to account for each month of the year.

**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Range_Domain:**

**Range_Domain_Minimum:** 1

**Range_Domain_Maximum:** 12

**Attribute:**

**Attribute_Label:** BREED1

**Attribute_Definition:**
Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED1 = nesting; if ELEMENT is "FISH" then BREED1 = spawning; if ELEMENT is "INVERT" then BREED1 = spawning; if ELEMENT is "REPTILE" then BREED1 = nesting; if ELEMENT is "M_MAMMAL" then BREED1 = mating. This attribute is not used for HABITAT or T_MAMMAL.

**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:** Y
Enumerated_Domain_Value_Definition:
Life-history stage or activity present
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Enumerated_Domain:
Enumerated_Domain_Value:
N
Enumerated_Domain_Value_Definition:
Life-history stage or activity not present or not reported
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
-
Enumerated_Domain_Value_Definition:
Breed category not used or not appropriate for record(s) in question
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute:
Attribute_Label:
BREED2
Attribute_Definition:
Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED2 = migrating; if ELEMENT is "FISH" then BREED2 = eggs; if ELEMENT is "INVERT" then BREED2 = eggs; if ELEMENT is "REPTILE" then BREED2 = hatching; if ELEMENT is "M_MAMMAL" then BREED2 = calving. This attribute is not used for HABITAT or T_MAMMAL elements.
Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
Y
Enumerated_Domain_Value_Definition:
Life-history stage or activity present
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
N
Enumerated_Domain_Value_Definition:
Life-history stage or activity not present or not reported
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
-
Enumerated_Domain_Value_Definition:
Breed category not used or not appropriate for record(s) in question
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute:
Attribute_Label:
BREED3
Attribute_Definition:
Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED3 = molting; if ELEMENT is "FISH" then BREED3 = larvae; if ELEMENT is "INVERT" then BREED3 = larvae; if ELEMENT is
"REPTILE" then BREED3 = internesting; if ELEMENT is "M_MAMMAL" then BREED3 = pupping. This attribute is not used for HABITAT or T_MAMMAL elements.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
    Enumerated Domain Value:
        Y
    Enumerated Domain Value Definition:
        Life-history stage or activity present
    Enumerated Domain Value Definition Source:
        NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
    Enumerated Domain Value:
        N
    Enumerated Domain Value Definition:
        Life-history stage or activity not present or not reported
    Enumerated Domain Value Definition Source:
        NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
    Enumerated Domain Value:
        -
    Enumerated Domain Value Definition:
        Breed category not used or not appropriate for record(s) in question
    Enumerated Domain Value Definition Source:
        NOAA ESI Guidelines

Attribute:
Attribute Label: BREED4
Attribute Definition:
Life history stage or activity type, where: if ELEMENT is "FISH" then BREED4 = juveniles; if ELEMENT is "INVERT" then BREED4 = juveniles; if ELEMENT is "REPTILE" then BREED4 = juveniles; if ELEMENT is "M_MAMMAL" then BREED4 = molting. This attribute is not used for BIRD, HABITAT, or T_MAMMAL elements.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
    Enumerated Domain Value:
        Y
    Enumerated Domain Value Definition:
        Life-history stage or activity present
    Enumerated Domain Value Definition Source:
        NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
    Enumerated Domain Value:
        N
    Enumerated Domain Value Definition:
        Life-history stage or activity not present or not reported
    Enumerated Domain Value Definition Source:
        NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
    Enumerated Domain Value:
        -
    Enumerated Domain Value Definition:
        Breed category not used or not appropriate for record(s) in question
**Enumerated_Domain_Value_Definition_Source:**
NOAA ESI Guidelines

**Attribute:**
**Attribute_Label:**
BREED5
**Attribute_Definition:**
Life history stage or activity type, where: if ELEMENT is "FISH" then BREED5 = adults; if ELEMENT is "INVERT" then BREED5 = adults; if ELEMENT is "REPTILE" then BREED5 = adults. This attribute is not used for BIRD, M_MAMMAL, HABITAT or T_MAMMAL elements.

**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**
**Enumerated_Domain:**
**Enumerated_Domain_Value:**
Y
**Enumerated_Domain_Value_Definition:**
Life-history stage or activity present

**Enumerated_Domain_Value_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**
**Enumerated_Domain:**
**Enumerated_Domain_Value:**
N
**Enumerated_Domain_Value_Definition:**
Life-history stage or activity not present or not reported

**Enumerated_Domain_Value_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**
**Enumerated_Domain:**
**Enumerated_Domain_Value:**
-
**Enumerated_Domain_Value_Definition:**
Breed category not used or not appropriate for record(s) in question

**Enumerated_Domain_Value_Definition_Source:**
NOAA ESI Guidelines

**Detailed_Description:**

**Entity_Type:**
**Entity_Type_Label:**
STATUS
**Entity_Type_Definition:**
The data table STATUS identifies the species that are listed as either threatened or endangered by a state, federal, or international authority. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

**Entity_Type_Definition_Source:**
NOAA ESI Guidelines

**Attribute:**
**Attribute_Label:**
ELEMENT
**Attribute_Definition:**
Major categories of biological data.

**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**
**Enumerated_Domain:**
**Enumerated_Domain_Value:**
BIRD
**Enumerated_Domain_Value_Definition:**
Birds

**Enumerated_Domain_Value_Definition_Source:**
NOAA ESI Guidelines
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      FISH
      Enumerated_Domain_Value_Definition:
        Fish
        Enumerated_Domain_Value_Definition_Source:
          NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      HABITAT
      Enumerated_Domain_Value_Definition:
        Habitats and Plants
        Enumerated_Domain_Value_Definition_Source:
          NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      INVERT
      Enumerated_Domain_Value_Definition:
        Invertebrates
        Enumerated_Domain_Value_Definition_Source:
          NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      M_MAMMAL
      Enumerated_Domain_Value_Definition:
        Marine Mammals
        Enumerated_Domain_Value_Definition_Source:
          NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      REPTILE
      Enumerated_Domain_Value_Definition:
        Reptiles and Amphibians
        Enumerated_Domain_Value_Definition_Source:
          NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      T_MAMMAL
      Enumerated_Domain_Value_Definition:
        Terrestrial Mammals
        Enumerated_Domain_Value_Definition_Source:
          NOAA ESI Guidelines

Attribute:
  Attribute_Label:
    SPECIES_ID
  Attribute_Definition:
    Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI species list maintained at NOAA.
  Attribute_Definition_Source:
    NOAA ESI Guidelines

Attribute_Domain_Values:
  Range_Domain:
    Range_Domain_Minimum:
    1
Range Domain Maximum:
N
Attribute:
Attribute_Label: STATE
Attribute_Definition: Two-letter state abbreviation.
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute_Label: COUNTRY
Attribute_Definition: Three-letter country abbreviation.
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute_Label: S
Attribute_Definition: State threatened or endangered status.
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: E
Enumerated_Domain_Value_Definition: Endangered on state list
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: T
Enumerated_Domain_Value_Definition: Threatened on state list
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: C
Enumerated_Domain_Value_Definition: Species of Special Concern
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
Attribute_Label: F
Attribute_Definition: Federal threatened or endangered status.
Attribute_Definition_Source: NOAA ESI Guidelines
**Attribute Domain Values:**

*Enumerated Domain:*
  *Enumerated Domain Value:*
    E
    *Enumerated Domain Value Definition:*
    Endangered on federal list
    *Enumerated Domain Value Definition Source:*
    NOAA ESI Guidelines

*Attribute Domain Values:*

*Enumerated Domain:*
  *Enumerated Domain Value:*
    T
    *Enumerated Domain Value Definition:*
    Threatened on federal list
    *Enumerated Domain Value Definition Source:*
    NOAA ESI Guidelines

*Attribute Domain Values:*

*Enumerated Domain:*
  *Enumerated Domain Value:*
    C
    *Enumerated Domain Value Definition:*
    Species of Special Concern
    *Enumerated Domain Value Definition Source:*
    NOAA ESI Guidelines

**Attribute:**

*Attribute Label:*
  I
  *Attribute Definition:*
  International threatened or endangered status.
  *Attribute Definition Source:*
  NOAA ESI Guidelines

**Attribute Domain Values:**

*Enumerated Domain:*
  *Enumerated Domain Value:*
    E
    *Enumerated Domain Value Definition:*
    Endangered on international list
    *Enumerated Domain Value Definition Source:*
    NOAA ESI Guidelines

*Attribute Domain Values:*

*Enumerated Domain:*
  *Enumerated Domain Value:*
    T
    *Enumerated Domain Value Definition:*
    Threatened on international list
    *Enumerated Domain Value Definition Source:*
    NOAA ESI Guidelines

*Attribute Domain Values:*

*Enumerated Domain:*
  *Enumerated Domain Value:*
    C
    *Enumerated Domain Value Definition:*
    Species of Special Concern
    *Enumerated Domain Value Definition Source:*
    NOAA ESI Guidelines

**Attribute:**

*Attribute Label:*
  S_DATE
  *Attribute Definition:*
  Publication date of source material used to assign state status values for each species, if used.
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values: Enumerated_Domain:
    Enumerated_Domain_Value: YYYYMM
    Enumerated_Domain_Value_Definition: YYYY for year and optionally MM for month
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute: Attribute_Label: F_DATE
    Attribute_Definition: Publication date of source material used to assign federal status values for each species, if used.
    Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values: Enumerated_Domain:
    Enumerated_Domain_Value: YYYYMM
    Enumerated_Domain_Value_Definition: YYYY for year and optionally MM for month
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute: Attribute_Label: I_DATE
    Attribute_Definition: Publication date of source material used to assign international status values for each species, if used.
    Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values: Enumerated_Domain:
    Enumerated_Domain_Value: YYYYMM
    Enumerated_Domain_Value_Definition: YYYY for year and optionally MM for month
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute: Attribute_Label: EL_SPE
    Attribute_Definition: Concatenation of ELEMENT and SPECIES_ID. This item links the STATUS data table to the BIORES and SPECIES data tables.
    Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values: Enumerated_Domain:
    Enumerated_Domain_Value: E#####
    Enumerated_Domain_Value_Definition: Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g. ELEMENT = ‘BIRD’ and SPECIES_ID = 1; EL_SPE = ‘B00001’).
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Detailed_Description:
Entity_Type: Delaware Bay ESI: BIRDS
    Entity_Type_Label:
SOURCES

Entity_Type_Definition:
The data table SOURCES contains the primary sources used to create the ESI data set. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

Entity_Type_Definition_Source:
NOAA ESI Guidelines

Attribute:
Attribute_Label: SOURCE_ID
Attribute_Definition:
Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; SOURCE_ID and ESI_SOURCE in the ESIL and ESIP data layers; and SOURCE_ID in the HYDRO data layer.

Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Range_Domain:
  Range_Domain_Minimum: 1
  Range_Domain_Maximum:

Attribute:
Attribute_Label: ORIGINATOR
Attribute_Definition:
Author or developer of source material or data set.

Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Unrepresentable_Domain:
Acceptable values change from atlas to atlas.

Attribute:
Attribute_Label: DATE_PUB
Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: YYYYMM
  Enumerated_Domain_Value_Definition: YYYY for year and optionally MM for month

Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute:
Attribute_Label: TITLE
Attribute_Definition:
Title of source material or data.

Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Unrepresentable_Domain:
Acceptable values change from atlas to atlas.

Attribute:
Attribute_Label: DATA_FORMAT
**Attribute Definition:**
The format of the source material.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Unrepresentable Domain:**
Acceptable values change from atlas to atlas.

---

**Attribute:**
**Attribute Label:** PUB_PLACE
**Attribute Definition:** Publication place.

**Attribute Definition Source:** NOAA ESI Guidelines

**Attribute Domain Values:**

**Unrepresentable Domain:**
Acceptable values change from atlas to atlas.

---

**Attribute:**
**Attribute Label:** PUBLISHER
**Attribute Definition:** Publisher.

**Attribute Definition Source:** NOAA ESI Guidelines

**Attribute Domain Values:**

**Unrepresentable Domain:**
Acceptable values change from atlas to atlas.

---

**Attribute:**
**Attribute Label:** PUBLICATION
**Attribute Definition:** Additional citation information.

**Attribute Definition Source:** NOAA ESI Guidelines

**Attribute Domain Values:**

**Unrepresentable Domain:**
Acceptable values change from atlas to atlas.

---

**Attribute:**
**Attribute Label:** ONLINE_LINK
**Attribute Definition:** Online computer resource URL.

**Attribute Definition Source:** NOAA ESI Guidelines

**Attribute Domain Values:**

**Unrepresentable Domain:**
Acceptable values change from atlas to atlas.

---

**Attribute:**
**Attribute Label:** SCALE
**Attribute Definition:** Description of the source scale.

**Attribute Definition Source:** NOAA ESI Guidelines

**Attribute Domain Values:**

**Unrepresentable Domain:**
Acceptable values change from atlas to atlas.

---

**Attribute:**
**Attribute Label:** TIME_PERIOD

---
Attribute_Definition:
Date(s) of data collection that the source material is based upon.

Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Unrepresentable_Domain:
Acceptable values change from atlas to atlas.

Overview_Description:

Entity_and_Attribute_Overview:
In addition to the geographic data layers, six relational attribute or data tables (BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS) are used to store the complex biological data in the ESI data structure. The geographic data layer containing biological resource information (in this case, BIRDS) is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or it can be linked directly using RARNUM. The ID is a unique combination of the atlas number (for the Delaware/New Jersey/Pennsylvania atlas, the number is 212), an element/layer specific number (BIRDS are layer 1, FISH are layer 2, etc.), and a unique record number. The RARNUM represents a unique combination of species, seasonalities, concentrations, and source information. For each of these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases. BIORES and the other relational data tables are described in the Detailed_Description sections. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way these tables relate to the geographic data layers and other attribute tables in the ESI data structure. Due to the complexity of the relational database model, the data items are also post-processed into a flat file format. This table, called BIOFILE, may be used in place of the relational files to ease simple data queries. The items in the flat file are ELEMENT, SUBELEMENT, NAME, GEN_SPEC, S, F, NHP, DATE_PUB, CONC, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC, BREED1, BREED2, BREED3, BREED4, BREED5, RARNUM, G_SOURCE, S_SOURCE, and BREED. All of these items are the same as their counterparts in the individual data tables (described in the Detailed_Description sections), except the BREED1-BREED5 and BREED items. BREED is a newly generated variable used to link to the BREED_DT data table, a modified, more compact version of the relational BREED data table. BREED1-BREED5 give a text summary of when each life stage occurs within the associated map object. The life stages referred to are the same as those listed in the Detailed_Description of the BREED data table. The link to the BIOFILE may be made through the BIO_LUT, using ID to link to RARNUM, or BIOFILE may be linked directly to the RARNUM in each of the geographic layer's attribute data tables. As mentioned, BREED_DT is an auxiliary support data table to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item. A second supporting data table is SOURCES. This is the same as the source file described above, and the link from the flat file is both G_SOURCE and S_SOURCE. It should be noted that although the flat file eases data query, it is not a normalized database structure, and actual updates performed by the states and other responsible agencies should be done using the relational data tables. The entity-relationship diagram, describing relationships between attribute tables in the ESI data structure, does NOT include the BIOFILE data table, and this data table is NOT described in a Detailed_Description section.

Entity_and_Attribute_Detail_Citation:
A complete description of entity types, attributes, and attribute values for ESI atlases can be found in the NOAA ESI Guidelines (http://response.restoration.noaa.gov/esi_guidelines).

Distribution_Information:
Distributor:
Contact_Information:
Contact_Person_Primary:
Contact_Person:
ESI Manager
Contact_Organization:
NOAA, Office of Response and Restoration
Contact_Address:
Address_Type:
Physical Address
Address:
7600 Sand Point Way N.E.
City:
Seattle
State or Province: Washington
Postal Code: 98115-6349
Contact Voice Telephone: (206) 526-6944
Contact Facsimile Telephone: (206) 526-6329
Contact Electronic Mail Address: orr.esi@noaa.gov

Resource Description:
Downloadable Data

Distribution Liability:
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format. If problems are encountered either in downloading the ESI data or if any file appears corrupted, please contact the ESI manager.

Custom Order Process:
Contact NOAA if you require the data be provided to you on CD/DVD. (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export files, Shapefiles, and a file Geodatabase (the recommended format). The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

Back To Index

Metadata Reference Information:
Metadata Date: 20140620
Metadata Contact:
Contact Information:
  Contact Person Primary:
    Contact Person: ESI Manager
    Contact Organization: NOAA, Office of Response and Restoration
    Contact Position: GIS Manager
  Contact Address:
    Address Type: Physical Address
    Address: 7600 Sand Point Way, N.E.
    City: Seattle
    State or Province: Washington
    Postal Code: 98115-6349
    Contact Voice Telephone: (206) 526-6944
    Contact Facsimile Telephone: (206) 526-6329
    Contact Electronic Mail Address: orr.esi@noaa.gov
  Metadata Standard Name: Content Standards for Digital Geospatial Metadata
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: NESTS (Nest Points)

Metadata:

- Identification Information
- Data Quality Information
- Spatial Data Organization Information
- Spatial Reference Information
- Entity and Attribute Information
- Distribution Information
- Metadata Reference Information

Identification Information:
Citation:
Originator:

Originator:
Department of Homeland Security, United States Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.

Publication Date:
201403

Title:
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: NESTS (Nest Points)

Edition:
Second

Geospatial Data Presentation Form:
vector digital data

Series Information:
Series Name:
None

Issue Identification:
Delaware/New Jersey/Pennsylvania

Publication Information:
Publication Place:
Seattle, Washington

Publisher:
NOAA's Ocean Service, Office of Response and Restoration (OR&R), Emergency Response Division (ERD).

Other Citation Details:

Online Linkage:
http://response.restoration.noaa.gov/esi

Online Linkage:
http://response.restoration.noaa.gov/esi_download

Online Linkage:
http://response.restoration.noaa.gov/esi_guidelines

Description:
Abstract:
This data set contains sensitive biological resource data for raptor and wading bird nests in Delaware/New Jersey/Pennsylvania. Vector points in this data set represent raptor and wading bird nests. Species specific abundance,
seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer. This data set comprises a portion of the ESI data for Delaware/New Jersey/Pennsylvania. 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 Delaware/New Jersey/Pennsylvania ESI database, for additional bird information.

**Purpose:**
The ESI data were collected, mapped, and digitized to provide environmental data for oil spill planning and response. The Clean Water Act with amendments by the Oil Pollution Act of 1990 requires response plans for immediate and effective protection of sensitive resources.

**Time_Period_of_Content:**

**Time_Period_Information:**

**Range_of_Dates/Times:**

**Beginning_Date:**
2000

**Ending_Date:**
2013

**Currentness_Reference:**
The data were compiled during 2013-2014. The currentness dates for the data range from 2000 to 2013 and are documented in the Lineage section.

**Status:**

**Progress:**
Complete

**Maintenance_and_Update_Frequency:**
None Scheduled

**Spatial_Domain:**

**Bounding_Coordinates:**

**West_BoundingCoordinate:**
-75.75000

**East_BoundingCoordinate:**
-74.03800

**North_BoundingCoordinate:**
40.23700

**South_BoundingCoordinate:**
38.37500

**Keywords:**

**Theme:**

**Theme_Keyword_Thesaurus:**
ISO 19115 Topic Category

**Theme_Keyword:**
biota

**Theme_Keyword:**
environment

**Theme:**

**Theme_Keyword_Thesaurus:**
None

**Theme_Keyword:**
Environmental Monitoring

**Theme_Keyword:**
ESI

**Theme_Keyword:**
Sensitivity maps

**Theme_Keyword:**
Coastal resources

**Theme_Keyword:**
Oil spill planning

**Theme_Keyword:**
Coastal Zone Management

**Theme_Keyword:**
Wildlife
Theme_Keyword:
Nest
Theme_Keyword:
Bird

Theme:
Theme_Keyword_Thesaurus:
NOS Data Explorer Topic Category
Theme_Keyword:
Environmental Monitoring

Place:
Place_Keyword_Thesaurus:
None
Place_Keyword:
Delaware/New Jersey/Pennsylvania

Access_Constraints:
None

Use_Constraints:
DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Management boundaries are not to be considered legal boundaries. Edges may have been altered for cartographic processes. Besides the above warnings, there are no use constraints on these data. Note that the ESI database should not be used to the exclusion of other pertinent data or information held by state or federal agencies or other organizations. Likewise, information contained in the database cannot be used in place of consultations with environmental, natural resource, and cultural resource agencies, or in place of field surveys. Recognize that the information contained in the ESI database represents known concentration areas or occurrences of natural, cultural, and human-use resources, but does not necessarily represent the full distribution or range of each species or resource. This is particularly important to recognize when considering potential impacts to protected resources, such as endangered species, wetlands, etc. Acknowledgment of the originators, publishers, contributors, and sources listed would be appreciated in products derived from these data.

Browse_Graphic:
Browse_Graphic_File_Name:
Browse_Graphic_File_Description:
Depicts the relationships between spatial data layers and attribute data tables for the Delaware/New Jersey/Pennsylvania ESI data.
Browse_Graphic_File_Type:
JPEG

Browse_Graphic:
Browse_Graphic_File_Name:
Browse_Graphic_File_Description:
Depicts the relationships between spatial data layers and desktop data tables for the Delaware/New Jersey/Pennsylvania ESI data.
Browse_Graphic_File_Type:
JPEG

Data_Set_Credit:
This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Office of Response and Restoration (OR&R), Emergency Response Division (ERD), Seattle, Washington; and The Department of Homeland Security, United States Coast Guard Office of Incident Management and Preparedness, Washington, D.C.

Native_Data_Set_Environment:
The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(R) (version 10.2) and SQL SERVER(R) (version 2005). The hardware configuration is PCs with Windows Operating System 7. The Spatial_Data_Organization Information section refers only to the source files in the ARC export format. The following files are included in the data set: benthic.e00, birds.e00, esil.e00, esp.e00, fish.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, soccon.e00, and t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut.e00, biofile.e00, biore.e00, breed.e00, breed_dt.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, sources.e00, species.e00, and status.e00.
**Data Quality Information:**

**Attribute Accuracy:**

*Attribute Accuracy Report*:

A multi-stage error checking process is used to verify both attribute accuracy and logical consistency throughout data production. The process includes a standardized data entry methodology, hardcopy data review by in-house and external resource experts, a final Quality Assurance/Quality Control (QA/QC) process, and multiple automated logical consistency checks. Quantitative data (such as densities, counts, abundances, or concentrations) provided by resource experts for inclusion in the data set may vary widely in attribute accuracy, depending upon the methodology used to collect and compile such data. For a more detailed evaluation of source data attribute accuracy, contact the sources listed in the Lineage section.

**Logical Consistency Report**:

A multi-stage error checking process, described in the above Attribute Accuracy Report, is used to verify both attribute accuracy and logical consistency throughout data production. This process includes multiple automated logical consistency checks that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and SQL SERVER(R) to ARC/INFO(R) consistencies. After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks. In the process of checking for topological and database consistencies, new ID's and RARNUM's or HUNUM's are also generated. The new ID's are a combination of atlas number, element number, and record number. In addition, the value used to represent the element is modified to reflect the type of feature being mapped. In the case of an element that is normally represented by a point or polygon, a value of 20 is added to the standard element value for mapping of linear features. In the case where an element usually mapped as a polygon is represented by a point, a value of 30 is added to the regular element value. The RARNUM's are also modified to include the atlas number, so multiple atlases can be combined and RARNUM's remain unique. RARNUM's are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUM's are also modified to include the atlas number.

**Completeness Report**:

These data represent a synthesis of expert knowledge, survey data, maps, and digital data on bird nesting sites. See also the BIRDS data layer, part of the larger Delaware/New Jersey/Pennsylvania ESI database, for additional bird information. These data do not necessarily represent all nest occurrences in Delaware/New Jersey/Pennsylvania. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 76, Bald eagle, Haliaeetus leucocephalus; 77, Osprey, Pandion haliaetus; 90, Black-crowned night-heron, Nycticorax nycticorax; 107, Peregrine falcon, Falco peregrinus.

**Positional Accuracy**:

*Horizontal Positional Accuracy Report*:

Spatial components for the biological data layers can come from expert interviews, hardcopy, or digital sources. Some of the spatial components of the biological data layers may have been developed using regional experts who estimate concentration areas. It is difficult to estimate the positional accuracy of such data, except to state that they are compiled on hardcopy base maps with a scale of 1:45,000. Some of the spatial components of the biological data sets are developed from pre-existing digital or hardcopy sources and reflect the positional accuracy of these original data. Note that biological resource data by their very nature are considered "fuzzy", and this should be understood when considering the positional accuracy of vector digital objects representing these resources. See the Lineage and Process_Description sections for more information on the original source data and how these data were integrated or manipulated to create the final data set.

**Lineage**:

*Source Information*:

*Source Citation*:

Citation Information:

**Originator:**

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL (DNREC)

**Publication Date:**

2012

**Title:**

SAFE DATES FOR DELAWARE BIRDS WITH ADDITIONAL NOTES AND DATES

**Geospatial Data Presentation Form:**

document

**Publication Information:**

**Publication Place:**

DOVER, DE

**Publisher:**
DELAWARE DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

Other_Citation_Details:
PART OF THE BREEDING BIRD ATLAS PROJECT

Online_Linkage:

Type_of_Source_Media:
one

Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
  Calendar_Date:
    2012

Source_Currentness_Reference:
DATE OF PUBLICATION

Source_Citation_Abbreviation:
Src_0

Source_Contribution:
NESTS INFORMATION

Source_Information:
Source_Citation:
  Citation_Information:
    Originator:
      DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL
      CONTROL (DNREC) - ANTHONY GONZON
    Publication_Date:
      2007
    Title:
      DELAWARE OSPREY NEST SITES
  Geospatial_Data_Presentation_Form:
    vector digital data
  Other_Citation_Details:
    UNPUBLISHED

Type_of_Source_Media:
EMAIL

Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
  Calendar_Date:
    2007

Source_Currentness_Reference:
DATE OF SURVEY

Source_Citation_Abbreviation:
Src_1

Source_Contribution:
NESTS INFORMATION

Source_Information:
Source_Citation:
  Citation_Information:
    Originator:
      HESS, G.K., R.L. WEST, M.V. BARNHILL III, L.M. FLEMING
    Publication_Date:
      2000
    Title:
      BIRDS OF DELAWARE
  Geospatial_Data_Presentation_Form:
    HARDCOPY TEXT
  Publication_Information:
    Publication_Place:
      PITTSBURGH, PA
    Publisher:
UNIVERSITY OF PITTSBURGH PRESS

Type of Source Media: paper
Source Time Period of Content:
Time Period Information:
   Single Date/Time:
      Calendar Date:
         2000
Source Currentness Reference:
   DATE OF PUBLICATION
Source Citation Abbreviation:
   Src_2
Source Contribution:
   NESTS INFORMATION
Source Information:
Source Citation:
   Citation Information:
      Originator:
         PENNSYLVANIA GAME COMMISSION (PGC) - ARTHUR MCMORRIS
Publication Date:
   2013
Title:
   BIRDS OF PENNSYLVANIA
Geospatial Data Presentation Form:
   EXPERT KNOWLEDGE
Other Citation Details:
   UNPUBLISHED

Type of Source Media: PERSONAL COMMUNICATION
Source Time Period of Content:
Time Period Information:
   Single Date/Time:
      Calendar Date:
         2013
Source Currentness Reference:
   DATE OF COMMUNICATION
Source Citation Abbreviation:
   Src_3
Source Contribution:
   NESTS INFORMATION
Source Information:
Source Citation:
   Citation Information:
      Originator:
         PENNSYLVANIA GAME COMMISSION (PGC) - DANIEL BRAUNING
Publication Date:
   2012
Title:
   PENNSYLVANIA PEREGRINE FALCON NEST SITES
Geospatial Data Presentation Form:
   spreadsheet
Other Citation Details:
   UNPUBLISHED

Type of Source Media: EMAIL
Source Time Period of Content:
Time Period Information:
   Range of Dates/Times:
      Beginning Date:
         2012
Ending_Date: 2012
Source_Currentness_Reference:
   DATE OF SURVEY
Source_Citation_Abbreviation: Src_4
Source_Contribution: NESTS INFORMATION
Source_Information:
Source_Citation:
   Citation_Information:
      Originator:
         PENNSYLVANIA GAME COMMISSION (PGC) - DANIEL BRAUNING
Publication_Date: 2012
Title:
   SOUTHEASTERN PENNSYLVANIA BALD EAGLE NEST SITES
Geospatial_Data_Presentation_Form:
   spreadsheet
Other_Citation_Details:
   UNPUBLISHED
Type_of_Source_Media:
   EMAIL
Source_Time_Period_of_Content:
   Time_Period_Information:
      Single_Date/Time:
         Calendar_Date: 2012
Source_Currentness_Reference:
   DATE OF SURVEY
Source_Citation_Abbreviation: Src_5
Source_Contribution: NESTS INFORMATION
Source_Information:
Source_Citation:
   Citation_Information:
      Originator:
         PENNSYLVANIA GAME COMMISSION (PGC) - PATTI BARBER
Publication_Date: 2013
Title:
   BIRDS OF PENNSYLVANIA
Geospatial_Data_Presentation_Form:
   EXPERT KNOWLEDGE
Other_Citation_Details:
   UNPUBLISHED
Type_of_Source_Media:
   PERSONAL COMMUNICATION
Source_Time_Period_of_Content:
   Time_Period_Information:
      Single_Date/Time:
         Calendar_Date: 2013
Source_Currentness_Reference:
   DATE OF COMMUNICATION
Source_Citation_Abbreviation: Src_6
Source_Contribution: NESTS INFORMATION
The mapping extent was dependent upon information availability and location of mapped coastal habitats and shorelines. Two main sources of data were used to depict nests for this data layer: 1) personal interviews with resource experts from: Delaware Department of Natural Resources and Environmental Control (DNREC), U.S. Fish and Wildlife Service (USFWS) Bombay Hook National Wildlife Refuge (NWR), and Pennsylvania Game Commission (PGC); and 2) digital/tabular data sets provided by DNREC and PGC. Peregrine falcon (PA state endangered) and bald eagle (PA state threatened) nest locations were provided by PGC. Osprey nest locations were provided by DNREC. Nest points were mapped as is. Nest locations for bald eagles and black-crowned night-heron (DE SE) were provided by Bombay Hook National Wildlife Refuge (NWR). The above digital and/or hardcopy sources were compiled by the project biologist to create the NESTS data layer. Depending on the type of source data, three general approaches are used for compiling the data layer: 1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:45,000 topographic quadrangles and digitized; 2) hardcopy maps are digitized at their source scale; 3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer. The ESI, biology, and human-use data are compiled into the standard ESI digital data format. A second set of interviews with participating resource experts are conducted to review the compiled data. If necessary, edits to the NESTS data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.
Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: orr.esi@noaa.gov

Spatial_Data_Organization_Information:
Direct_Spatial_Reference_Method: Vector
Point_and_Vector_Object_Information:
SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: Entity point
Point_and_Vector_Object_Count: 322

Spatial_REFERENCE_Information:
Horizontal_Coordinate_System_Definition:
Geographic:
Latitude_Resolution: 0.0000001
Longitude_Resolution: 0.0000001
Geographic_Coordinate_Units: Decimal degrees
Geodetic_Model:
Horizontal_Datum_Name: North American Datum of 1983
Ellipsoid_Name: Geodetic Reference System 80
Semi-major_Axis: 6378137.000000
Denominator_of_Flattening_Ratio: 298.257222

Entity_and_Attribute_Information:
Detailed_Description:
Entity_Type:
Entity_Type_Label: NESTS.PAT
Entity_Type_Definition: The NESTS.PAT table contains attribute information for the vector points in this data set representing raptor and wading bird nests. Note that all attribute information is stored in a series of relational files, described below and in the Overview_Description section. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the relationships between attribute tables in the ESI data structure.
Entity_Type_Definition_Source: NOAA ESI Guidelines
**Attribute:**

**Attribute_Label:**

ID

**Attribute_Definition:**

An identifier that links vector objects in the biology data layers to records in the BIO_LUT data table. ID is a concatenation of atlas number (212), element number (5), and record number.

**Attribute_Definition_Source:**

NOAA

**Attribute_Domain_Values:**

**Range_Domain:**

- **Range_Domain_Minimum:** 2120500001
- **Range_Domain_Maximum:** 2120500322

**Attribute:**

**Attribute_Label:**

RARNUM

**Attribute_Definition:**

An identifier that links directly to the BIORES table or the flat format BIOFILE table.

**Attribute_Definition_Source:**

NOAA

**Attribute_Domain_Values:**

**Range_Domain:**

- **Range_Domain_Minimum:** 212000035
- **Range_Domain_Maximum:** 212000124

**Detailed_Description:**

**Entity_Type:**

**Entity_Type_Label:**

BIO_LUT

**Entity_Type_Definition:**

The data table BIO_LUT is a lookup table that contains items necessary for linking vector objects in the biological data layers with the BIORES data table. Note that all attribute information is stored in a series of relational files, described below and in the Overview_Description section. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

**Entity_Type_Definition_Source:**

NOAA ESI Guidelines

**Attribute:**

**Attribute_Label:**

RARNUM

**Attribute_Definition:**

An identifier that links records in the BIO_LUT data table to records in the BIORES data table or the flat format BIOFILE data table.

**Attribute_Definition_Source:**

NOAA

**Attribute_Domain_Values:**

**Range_Domain:**

- **Range_Domain_Minimum:** 212000001
- **Range_Domain_Maximum:** 212001295

**Attribute:**

**Attribute_Label:**

ID

**Attribute_Definition:**

An identifier that links vector objects in the biology data layers to records in the BIO_LUT data table. ID is a concatenation of atlas number (212), element number (5), and record number.

**Attribute_Definition_Source:**
NOAA

Attribute_Domain_Values:
  Range_Domain:
    Range_Domain_Minimum:
      2120100002
    Range_Domain_Maximum:
      2120900295

Detailed_Description:
  Entity_Type:
    Entity_Type_Label: BIORES
    Entity_Type_Definition: The data table BIORES contains both biological attribute data and items necessary for linking vector objects in the biological data layers via the BIO_LUT data table to other associated data tables. See the Browse Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.
    Entity_Type_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: RARNUM
  Attribute_Definition: An identifier that links records in the BIORES data table to records in the BIO_LUT data table or the flat format BIOFILE data table.
  Attribute_Definition_Source: NOAA
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum:
        212000001
      Range_Domain_Maximum:
        212001295

Attribute:
  Attribute_Label: SPECIES_ID
  Attribute_Definition: Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI species list maintained at NOAA.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum:
        1
      Range_Domain_Maximum:
        N

Attribute:
  Attribute_Label: CONC
  Attribute_Definition: The field CONC refers to "concentration," abundance, or density values and may contain counts of individuals or nests for each species present at a particular nesting site. The field may contain counts of individuals or nests (XX INDIV) or (X NEST).
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Unrepresentable_Domain: Acceptable values change from atlas to atlas.
SEASON_ID
Attribute_Definition:
Numeric identifier for the unique monthly presence and life history characteristics of each species at a given location.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Range_Domain:
  Range_Domain_Minimum: 1
  Range_Domain_Maximum: N

Attribute:
Attribute_Label: G_SOURCE
Attribute_Definition:
Geographic source identifier that links records in the BIORES data table to records in the SOURCES data table.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Range_Domain:
  Range_Domain_Minimum: 1
  Range_Domain_Maximum: N

Attribute:
Attribute_Label: S_SOURCE
Attribute_Definition:
Seasonality source identifier that links records in the BIORES data table to records in the SOURCES data table.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Range_Domain:
  Range_Domain_Minimum: 1
  Range_Domain_Maximum: N

Attribute:
Attribute_Label: ELEMENT
Attribute_Definition:
Major categories of biological data.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: BIRD
  Enumerated_Domain_Value_Definition: Birds
  Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Enumerated_Domain:
  Enumerated_Domain_Value: FISH
  Enumerated_Domain_Value_Definition: Fish
  Enumerated_Domain_Value_Definition_Source: Delaware Bay ESI: NESTS
Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: HABITAT
    Enumerated Domain Value Definition: Habitats and plants
    Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: INVERT
    Enumerated Domain Value Definition: Invertebrates
    Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: M_MAMMAL
    Enumerated Domain Value Definition: Marine mammals
    Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: REPTILE
    Enumerated Domain Value Definition: Reptiles and Amphibians
    Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: T_MAMMAL
    Enumerated Domain Value Definition: Terrestrial mammals
    Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute:
  Attribute Label: EL_SPE
  Attribute Definition: Concatenation of ELEMENT and SPECIES_ID. This item links records in the BIORES data table to records in the SPECIES and STATUS data tables.
  Attribute Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: E#####
    Enumerated Domain Value Definition: Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1; EL_SPE = 'B00001').
    Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute:
  Attribute Label:
EL_SPE_SEA

Attribute Definition:
Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the BIORES data table to records in the SEASONAL and BREED data tables.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
E#####

Enumerated Domain Value Definition:
Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Detailed Description:

Entity Type:

Entity Type Label:
SPECIES

Entity Type Definition:
The data table SPECIES identifies all species in the ESI data set. See the Browse Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure. Refer to the Completeness_Report for a list of layer-specific species.

Entity Type Definition Source:
NOAA ESI Guidelines

Attribute:

Attribute Label:
SPECIES_ID

Attribute Definition:
Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI species list maintained at NOAA.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:

Range Domain:

Range Domain Minimum:
1

Range Domain Maximum:
N

Attribute:

Attribute Label:
NAME

Attribute Definition:
Species common name for the entire ESI data set.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:

Unrepresentable Domain:
Acceptable values change from atlas to atlas.

Attribute:

Attribute Label:
GEN_SPEC

Attribute Definition:
Species scientific name for the entire ESI data set.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:

Unrepresentable Domain:
Acceptable values change from atlas to atlas.
Attribute:

Attribute_Label:
   ELEMENT

Attribute_Definition:
   Major categories of biological data.

Attribute_Definition_Source:
   NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:
   Enumerated_Domain_Value:
      BIRD
   Enumerated_Domain_Value_Definition:
      Birds
   Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:
   Enumerated_Domain_Value:
      FISH
   Enumerated_Domain_Value_Definition:
      Fish
   Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:
   Enumerated_Domain_Value:
      HABITAT
   Enumerated_Domain_Value_Definition:
      Habitats and plants
   Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:
   Enumerated_Domain_Value:
      INVERT
   Enumerated_Domain_Value_Definition:
      Invertebrates
   Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:
   Enumerated_Domain_Value:
      M_MAMMAL
   Enumerated_Domain_Value_Definition:
      Marine Mammals
   Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:
   Enumerated_Domain_Value:
      REPTILE
   Enumerated_Domain_Value_Definition:
      Reptiles and Amphibians
   Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:
   Enumerated_Domain_Value:
      T_MAMMAL
   Enumerated_Domain_Value_Definition:
Terrestrial Mammals

Attribute:

Attribute_Label: SUBELEMENT

Attribute_Definition: Element subgroup delineating a logical grouping of species.

Attribute_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: alcid

Enumerated_Domain_Value_Definition: Alcid

Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Enumerated_Domain:

Enumerated_Domain_Value: amphibian

Enumerated_Domain_Value_Definition: Amphibian

Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Enumerated_Domain:

Enumerated_Domain_Value: bivalve

Enumerated_Domain_Value_Definition: Bivalve

Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Enumerated_Domain:

Enumerated_Domain_Value: cephalopod

Enumerated_Domain_Value_Definition: Cephalopod

Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Enumerated_Domain:

Enumerated_Domain_Value: crab

Enumerated_Domain_Value_Definition: Crab

Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Enumerated_Domain:

Enumerated_Domain_Value: diadromous

Enumerated_Domain_Value_Definition: Diadromous fish

Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Enumerated_Domain_Value:
diving
Enumerated_Domain_Value_Definition:
Diving bird
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
dolphin
Enumerated_Domain_Value_Definition:
Dolphin
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
e_nursery
Enumerated_Domain_Value_Definition:
Estuarine nursery fish
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
  fish
Enumerated_Domain_Value_Definition:
Fish
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
freshwater
Enumerated_Domain_Value_Definition:
Freshwater fish
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
gastropod
Enumerated_Domain_Value_Definition:
Gastropod
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
gull_tern
Enumerated_Domain_Value_Definition:
Gull or tern
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
insect
Enumerated_Domain_Value_Definition:
Insect
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: invert
  Enumerated_Domain_Value_Definition: Invertebrate
  Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: lobster
  Enumerated_Domain_Value_Definition: Lobster
  Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: m_benthic
  Enumerated_Domain_Value_Definition: Marine benthic fish
  Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: m_pelagic
  Enumerated_Domain_Value_Definition: Marine pelagic fish
  Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: passerine
  Enumerated_Domain_Value_Definition: Passerine bird
  Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: pelagic
  Enumerated_Domain_Value_Definition: Pelagic bird
  Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: pinniped
  Enumerated_Domain_Value_Definition: Pinniped
  Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
  plant
Enumerated_Domain_Value_Definition:
  Plant
Enumerated_Domain_Value_Definition_Source:
  NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
    raptor
Enumerated_Domain_Value_Definition:
  Raptor
Enumerated_Domain_Value_Definition_Source:
  NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
    sav
Enumerated_Domain_Value_Definition:
  Submerged aquatic vegetation
Enumerated_Domain_Value_Definition_Source:
  NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
    shorebird
Enumerated_Domain_Value_Definition:
  Shorebird
Enumerated_Domain_Value_Definition_Source:
  NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
    sm_mammal
Enumerated_Domain_Value_Definition:
  Small mammal
Enumerated_Domain_Value_Definition_Source:
  NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
    snake
Enumerated_Domain_Value_Definition:
  Snake
Enumerated_Domain_Value_Definition_Source:
  NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
    turtle
Enumerated_Domain_Value_Definition:
  Turtle
Enumerated_Domain_Value_Definition_Source:
  NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
    wading
Enumerated_Domain_Value_Definition:
  Wading bird
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
   Enumerated_Domain:
      Enumerated_Domain_Value: waterfowl
      Enumerated_Domain_Value_Definition: Waterfowl
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
   Enumerated_Domain:
      Enumerated_Domain_Value: wetland
      Enumerated_Domain_Value_Definition: Wetland
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
   Enumerated_Domain:
      Enumerated_Domain_Value: whale
      Enumerated_Domain_Value_Definition: Whale
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
   Attribute_Label: NHP
   Attribute_Definition: Natural Heritage Program global ranking.
   Attribute_Definition_Source: Network of Natural Heritage Program

Attribute_Domain_Values:
   Codeset_Domain:
      Codeset_Name: NHP Global Conservation Status Rank
      Codeset_Source: Natural Heritage Program

Attribute:
   Attribute_Label: DATE_PUB
   Attribute_Definition: Date of NHP listing.
   Attribute_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
   Enumerated_Domain:
      Enumerated_Domain_Value: YYYYMM
      Enumerated_Domain_Value_Definition: YYYY for year and optionally MM for month
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
   Enumerated_Domain:
      Enumerated_Domain_Value: 0
      Enumerated_Domain_Value_Definition: Date unspecified
**Attribute:**

**Attribute** _Label_: EL_SPE

**Attribute** _Definition_: Concatenation of ELEMENT and SPECIES_ID. This item links records in the SPECIES data table to records in the BIORES and STATUS data tables.

**Attribute** _Definition** Source_: NOAA ESI Guidelines

**Attribute** _Domain Values_: 

**Enumerated** _Domain_: 

**Enumerated** _Domain** Value_: E####

**Enumerated** _Domain** Value** Definition_: Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1; EL_SPE = 'B00001').

**Enumerated** _Domain** Value** Definition** Source_: NOAA ESI Guidelines

**Detailed Description:**

**Entity Type:**

**Entity** _Type Label_: SEASONAL

**Entity** _Type Definition_: The data table SEASONAL contains information on the seasonal presence of each species associated with each spatial vector object. See the Browse Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

**Entity** _Type Definition** Source_: NOAA ESI Guidelines

**Attribute:**

**Attribute** _Label_: ELEMENT

**Attribute** _Definition_: Major categories of biological data.

**Attribute** _Definition** Source_: NOAA ESI Guidelines

**Attribute** _Domain Values_: 

**Enumerated** _Domain_: 

**Enumerated** _Domain** Value_: BIRD

**Enumerated** _Domain** Value** Definition_: Birds

**Enumerated** _Domain** Value** Definition** Source_: NOAA ESI Guidelines

**Attribute** _Domain Values_: 

**Enumerated** _Domain_: 

**Enumerated** _Domain** Value_: FISH

**Enumerated** _Domain** Value** Definition_: Fish

**Enumerated** _Domain** Value** Definition** Source_: NOAA ESI Guidelines

**Attribute** _Domain Values_: 

**Enumerated** _Domain_: 

**Enumerated** _Domain** Value_: HABITAT

**Enumerated** _Domain** Value** Definition_: Habitats and plants

**Enumerated** _Domain** Value** Definition** Source_: NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value:
    INVERT
  Enumerated Domain Value Definition:
    Invertebrates
  Enumerated Domain Value Definition Source:
    NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value:
    M_MAMMAL
  Enumerated Domain Value Definition:
    Marine Mammals
  Enumerated Domain Value Definition Source:
    NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value:
    REPTILE
  Enumerated Domain Value Definition:
    Reptiles and Amphibians
  Enumerated Domain Value Definition Source:
    NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value:
    T_MAMMAL
  Enumerated Domain Value Definition:
    Terrestrial Mammals
  Enumerated Domain Value Definition Source:
    NOAA ESI Guidelines

Attribute:
  Attribute Label: SPECIES_ID
  Attribute Definition:
    Numeric identifier for each species that is unique within each element and refers to a nationwide ESI species list maintained at NOAA.
  Attribute Definition Source:
    NOAA ESI Guidelines
  Attribute Domain Values:
    Range Domain:
      Range Domain Minimum:
        1
      Range Domain Maximum:
        N

Attribute:
  Attribute Label: SEASON_ID
  Attribute Definition:
    Numeric identifier for the unique monthly presence and life history characteristics of each species at a given location.
  Attribute Definition Source:
    NOAA ESI Guidelines
  Attribute Domain Values:
    Range Domain:
      Range Domain Minimum:
        1
      Range Domain Maximum:
        N
Attribute:
  Attribute_Label: JAN
  Attribute_Definition: January
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        X
      Enumerated_Domain_Value_Definition:
        Present in January
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: FEB
  Attribute_Definition: February
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        X
      Enumerated_Domain_Value_Definition:
        Present in February
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: MAR
  Attribute_Definition: March
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        X
      Enumerated_Domain_Value_Definition:
        Present in March
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: APR
  Attribute_Definition: April
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        X
      Enumerated_Domain_Value_Definition:
        Present in April
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute:
  Attribute_Label: MAY
  Attribute_Definition: May
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        X
      Enumerated_Domain_Value_Definition:
        Present in May
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: JUN
  Attribute_Definition: June
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        X
      Enumerated_Domain_Value_Definition:
        Present in June
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: JUL
  Attribute_Definition: July
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        X
      Enumerated_Domain_Value_Definition:
        Present in July
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: AUG
  Attribute_Definition: August
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        X
      Enumerated_Domain_Value_Definition:
        Present in August
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute:
Attribute_Label: SEP
Attribute_Definition: September
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
    X
  Enumerated_Domain_Value_Definition: Present in September
  Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
Attribute_Label: OCT
Attribute_Definition: October
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
    X
  Enumerated_Domain_Value_Definition: Present in October
  Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
Attribute_Label: NOV
Attribute_Definition: November
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
    X
  Enumerated_Domain_Value_Definition: Present in November
  Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
Attribute_Label: DEC
Attribute_Definition: December
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
    X
  Enumerated_Domain_Value_Definition: Present in December
  Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute:

Attribute_Label: EL_SPE_SEA
Attribute_Definition: Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the SEASONAL data table to records in the BIORES and BREED data tables.
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: E#######
Enumerated_Domain_Value_Definition: Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Detailed_Description:

Entity_Type:

Entity_Type_Label: BREED
Entity_Type_Definition: The data table BREED identifies the monthly presence of certain life-history stages or activities for each species at a given location.
Entity_Type_Definition_Source: NOAA ESI Guidelines

Attribute:

Attribute_Label: EL_SPE_SEA
Attribute_Definition: Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the BREED data table to records in the BIORES and SEASONAL data tables.
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: E#######
Enumerated_Domain_Value_Definition: Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:

Attribute_Label: MONTH
Attribute_Definition: Two-digit calendar month. Each life history stage or activity type for a particular species can have up to 12 records to account for each month of the year.
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum:

1
Range_Domain_Maximum:

12
**Attribute Label:**
BREED1

**Attribute Definition:**
Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED1 = nesting; if ELEMENT is "FISH" then BREED1 = spawning; if ELEMENT is "INVERT" then BREED1 = spawning; if ELEMENT is "REPTILE" then BREED1 = nesting; if ELEMENT is "M_MAMMAL" then BREED1 = mating. This attribute is not used for HABITAT or T_MAMMAL.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

- **Enumerated Domain:**
  - **Enumerated Domain Value:** Y
  - **Enumerated Domain Value Definition:** Life-history stage or activity present
  - **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

- **Enumerated Domain:**
  - **Enumerated Domain Value:** N
  - **Enumerated Domain Value Definition:** Life-history stage or activity not present or not reported
  - **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

- **Enumerated Domain:**
  - **Enumerated Domain Value:** -
  - **Enumerated Domain Value Definition:** Breed category not used or not appropriate for record(s) in question
  - **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

**Attribute:**

**Attribute Label:**
BREED2

**Attribute Definition:**
Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED2 = migrating; if ELEMENT is "FISH" then BREED2 = eggs; if ELEMENT is "INVERT" then BREED2 = eggs; if ELEMENT is "REPTILE" then BREED2 = hatching; if ELEMENT is "M_MAMMAL" then BREED2 = calving. This attribute is not used for HABITAT or T_MAMMAL elements.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

- **Enumerated Domain:**
  - **Enumerated Domain Value:** Y
  - **Enumerated Domain Value Definition:** Life-history stage or activity present
  - **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

- **Enumerated Domain:**
  - **Enumerated Domain Value:** N
  - **Enumerated Domain Value Definition:** Life-history stage or activity not present or not reported
  - **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

- **Enumerated Domain:**
  - **Enumerated Domain Value:** -
  - **Enumerated Domain Value Definition:** Breed category not used or not appropriate for record(s) in question
  - **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines
**Enumerated Domain:**

- **Enumerated Domain Value:**

  **Enumerated Domain Value Definition:**
  Breed category not used or not appropriate for record(s) in question

  **Enumerated Domain Value Definition Source:**
  NOAA ESI Guidelines

**Attribute:**

**Attribute Label:**

BREED3

**Attribute Definition:**

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED3 = molting; if ELEMENT is "FISH" then BREED3 = larvae; if ELEMENT is "INVERT" then BREED3 = larvae; if ELEMENT is "REPTILE" then BREED3 = internesting; if ELEMENT is "M_MAMMAL" then BREED3 = pupping. This attribute is not used for HABITAT or T_MAMMAL elements.

**Attribute Definition Source:**

NOAA ESI Guidelines

**Attribute Domain Values:**

- **Enumerated Domain:**

  - **Enumerated Domain Value:** Y

    **Enumerated Domain Value Definition:**
    Life-history stage or activity present

    **Enumerated Domain Value Definition Source:**
    NOAA ESI Guidelines

  - **Enumerated Domain Value:** N

    **Enumerated Domain Value Definition:**
    Life-history stage or activity not present or not reported

    **Enumerated Domain Value Definition Source:**
    NOAA ESI Guidelines

**Attribute Domain Values:**

- **Enumerated Domain:**

  - **Enumerated Domain Value:** -

    **Enumerated Domain Value Definition:**
    Breed category not used or not appropriate for record(s) in question

    **Enumerated Domain Value Definition Source:**
    NOAA ESI Guidelines

**Attribute:**

**Attribute Label:**

BREED4

**Attribute Definition:**

Life history stage or activity type, where: if ELEMENT is "FISH" then BREED4 = juveniles; if ELEMENT is "INVERT" then BREED4 = juveniles; if ELEMENT is "REPTILE" then BREED4 = juveniles; if ELEMENT is "M_MAMMAL" then BREED4 = molting. This attribute is not used for BIRD, HABITAT, or T_MAMMAL elements.

**Attribute Definition Source:**

NOAA ESI Guidelines

**Attribute Domain Values:**

- **Enumerated Domain:**

  - **Enumerated Domain Value:** Y

    **Enumerated Domain Value Definition:**
    Life-history stage or activity present

    **Enumerated Domain Value Definition Source:**
    NOAA ESI Guidelines

  - **Enumerated Domain Value:** -

    **Enumerated Domain Value Definition:**
    Breed category not used or not appropriate for record(s) in question

    **Enumerated Domain Value Definition Source:**
    NOAA ESI Guidelines

  - **Enumerated Domain Value:**
Enumerated_Domain:
  Enumerated_Domain_Value:
    N
  Enumerated_Domain_Value_Definition:
    Life-history stage or activity not present or not reported
  Enumerated_Domain_Value_Definition_Source:
    NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      -
    Enumerated_Domain_Value_Definition:
      Breed category not used or not appropriate for record(s) in question
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute:
  Attribute_Label:
    BREED5
  Attribute_Definition:
    Life history stage or activity type, where: if ELEMENT is "FISH" then BREED5 = adults; if ELEMENT is "INVERT" then BREED5 = adults; if ELEMENT is "REPTILE" then BREED5 = adults. This attribute is not used for BIRD, M_MAMMAL, HABITAT or T_MAMMAL elements.
  Attribute_Definition_Source:
    NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      Y
    Enumerated_Domain_Value_Definition:
      Life-history stage or activity present
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      N
    Enumerated_Domain_Value_Definition:
      Life-history stage or activity not present or not reported
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      -
    Enumerated_Domain_Value_Definition:
      Breed category not used or not appropriate for record(s) in question
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Detailed_Description:
Entity_Type:
  Entity_Type_Label:
    STATUS
  Entity_Type_Definition:
    The data table STATUS identifies the species that are listed as either threatened or endangered by a state, federal, or international authority. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.
  Entity_Type_Definition_Source:
    NOAA ESI Guidelines

Attribute:
  Attribute_Label:
ATTRIBUTE_DEFINITION:
Major categories of biological data.

ATTRIBUTE_DEFINITION_SOURCE:
NOAA ESI Guidelines

ATTRIBUTE_DOMAIN_VALUES:
Enumerated_Domain:
Enumerated_Domain_Value:
BIRD
Enumerated_Domain_Value_Definition:
Birds
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Enumerated_Domain:
Enumerated_Domain_Value:
FISH
Enumerated_Domain_Value_Definition:
Fish
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Enumerated_Domain:
Enumerated_Domain_Value:
HABITAT
Enumerated_Domain_Value_Definition:
Habitats and Plants
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Enumerated_Domain:
Enumerated_Domain_Value:
INVERT
Enumerated_Domain_Value_Definition:
Invertebrates
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Enumerated_Domain:
Enumerated_Domain_Value:
M_MAMMAL
Enumerated_Domain_Value_Definition:
Marine Mammals
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Enumerated_Domain:
Enumerated_Domain_Value:
REPTILE
Enumerated_Domain_Value_Definition:
Reptiles and Amphibians
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Enumerated_Domain:
Enumerated_Domain_Value:
T_MAMMAL
Enumerated_Domain_Value_Definition:
Terrestrial Mammals
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute:
  Attribute_Label: SPECIES_ID
  Attribute_Definition: Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI species list maintained at NOAA.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum: 1
      Range_Domain_Maximum: N

Attribute:
  Attribute_Label: STATE
  Attribute_Definition: Two-letter state abbreviation.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:
  Attribute_Label: COUNTRY
  Attribute_Definition: Three-letter country abbreviation.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:
  Attribute_Label: S
  Attribute_Definition: State threatened or endangered status.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: E
      Enumerated_Domain_Value_Definition: Endangered on state list
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: T
      Enumerated_Domain_Value_Definition: Threatened on state list
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
Enumerated_Domain_Value: C
Enumerated_Domain_Value_Definition: Species of Special Concern
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
Attribute_Label: F
Attribute_Definition: Federal threatened or endangered status.
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: E
Enumerated_Domain_Value_Definition: Endangered on federal list
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Enumerated_Domain_Value: T
Enumerated_Domain_Value_Definition: Threatened on federal list
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Enumerated_Domain_Value: C
Enumerated_Domain_Value_Definition: Species of Special Concern
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
Attribute_Label: I
Attribute_Definition: International threatened or endangered status.
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: E
Enumerated_Domain_Value_Definition: Endangered on international list
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Enumerated_Domain_Value: T
Enumerated_Domain_Value_Definition: Threatened on international list
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      C
    Enumerated_Domain_Value_Definition:
      Species of Special Concern
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines
  Attribute:
    Attribute_Label:
      S_DATE
    Attribute_Definition:
      Publication date of source material used to assign state status values for each species, if used.
    Attribute_Definition_Source:
      NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        YYYYMM
      Enumerated_Domain_Value_Definition:
        YYYY for year and optionally MM for month
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines
  Attribute:
    Attribute_Label:
      F_DATE
    Attribute_Definition:
      Publication date of source material used to assign federal status values for each species, if used.
    Attribute_Definition_Source:
      NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        YYYYMM
      Enumerated_Domain_Value_Definition:
        YYYY for year and optionally MM for month
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines
  Attribute:
    Attribute_Label:
      I_DATE
    Attribute_Definition:
      Publication date of source material used to assign international status values for each species, if used.
    Attribute_Definition_Source:
      NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        YYYYMM
      Enumerated_Domain_Value_Definition:
        YYYY for year and optionally MM for month
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines
  Attribute:
    Attribute_Label:
      EL_SPE
    Attribute_Definition:
      Concatenation of ELEMENT and SPECIES_ID. This item links the STATUS data table to the BIORES and SPECIES data tables.
    Attribute_Definition_Source:
NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**

E####

**Enumerated_Domain_Value_Definition:**

Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g. ELEMENT = ‘BIRD’ and SPECIES_ID = 1; EL_SPE = ‘B00001’).

**Enumerated_Domain_Value_Source:**

NOAA ESI Guidelines

**Detailed_Description:**

**Entity_Type:**

**Entity_Type_Label:** SOURCES

**Entity_Type_Definition:**

The data table SOURCES contains the primary sources used to create the ESI data set. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

**Entity_Type_Definition_Source:**

NOAA ESI Guidelines

**Attribute:**

**Attribute_Label:** SOURCE_ID

**Attribute_Definition:**

Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BORES table; SOURCE_ID and ESI_SOURCE in the ESIL and ESIP data layers; and SOURCE_ID in the HYDRO data layer.

**Attribute_Definition_Source:**

NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Range_Domain:**

**Range_Domain_Minimum:** 1

**Range_Domain_Maximum:** N

**Attribute:**

**Attribute_Label:** ORIGINATOR

**Attribute_Definition:**

Author or developer of source material or data set.

**Attribute_Definition_Source:**

NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Unrepresentable_Domain:**

Acceptable values change from atlas to atlas.

**Attribute:**

**Attribute_Label:** DATE_PUB

**Attribute_Definition:**

Date of source material, publication, or date of personal communication with expert source.

**Attribute_Definition_Source:**

NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**

YYYYMM

**Enumerated_Domain_Value_Definition:**

YYYY for year and optionally MM for month

**Enumerated_Domain_Value_Source:**

NOAA ESI Guidelines
Attribute:
  Attribute_Label: TITLE
  Attribute_Definition: Title of source material or data.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Unrepresentable_Domain:
    Acceptable values change from atlas to atlas.

Attribute:
  Attribute_Label: DATA_FORMAT
  Attribute_Definition: The format of the source material.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Unrepresentable_Domain:
    Acceptable values change from atlas to atlas.

Attribute:
  Attribute_Label: PUB_PLACE
  Attribute_Definition: Publication place.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Unrepresentable_Domain:
    Acceptable values change from atlas to atlas.

Attribute:
  Attribute_Label: PUBLISHER
  Attribute_Definition: Publisher.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Unrepresentable_Domain:
    Acceptable values change from atlas to atlas.

Attribute:
  Attribute_Label: PUBLICATION
  Attribute_Definition: Additional citation information.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Unrepresentable_Domain:
    Acceptable values change from atlas to atlas.

Attribute:
  Attribute_Label: ONLINE_LINK
  Attribute_Definition: Online computer resource URL.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Unrepresentable_Domain:
    Acceptable values change from atlas to atlas.
Attribute:
Attribute_Label: SCALE
Attribute_Definition: Description of the source scale.
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values: 
  Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute_Label: TIME_PERIOD
Attribute_Definition: Date(s) of data collection that the source material is based upon.
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values: 
  Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Overview_Description:
Entity_and_Attribute_Overview:
In addition to the geographic data layers, six relational attribute or data tables (BIORES, BREEED, SEASONAL, SOURCES, SPECIES, and STATUS) are used to store the complex biological data in the ESI data structure. The geographic data layer containing biological resource information (in this case, NESTS) is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or it can be linked directly using RARNUM. The ID is a unique combination of the atlas number (for the Delaware/New Jersey/Pennsylvania atlas, the number is 212), an element/layer specific number (BIRDS are layer 1, FISH are layer 2, etc.), and a unique record number. The RARNUM represents a unique combination of species, seasonalities, concentrations, and source information. For each of these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases. BIORES and the other relational data tables are described in the Detailed_Description sections. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way these tables relate to the geographic data layers and other attribute tables in the ESI data structure. Due to the complexity of the relational database model, the data items are also post-processed into a flat file format. This table, called BIOFILE, may be used in place of the relational files to ease simple data queries. The items in the flat file are ELEMENT, SUBELEMENT, NAME, GEN_SPEC, S, F, NHP, DATE_PUB, CONC, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC, BREEED1, BREEED2, BREEED3, BREEED4, BREEED5, RARNUM, G_SOURCE, S_SOURCE, and BREEED. All of these items are the same as their counterparts in the individual data tables (described in the Detailed_Description sections), except the BREEED1-BREEED5 and BREEED items. BREEED is a newly generated variable used to link to the BREEED_DT data table, a modified, more compact version of the relational BREEED data table. BREEED1-BREEED5 give a text summary of when each life stage occurs within the associated map object. The life stages referred to are the same as those listed in the Detailed_Description of the BREEED data table. The link to the BIOFILE may be made through the BIO_LUT, using ID to link to RARNUM, or BIOFILE may be linked directly to the RARNUM in each of the geographic layer's attribute data tables. As mentioned, BREEED_DT is an auxiliary support data table to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREEED_DT is the BREEED item. A second supporting data table is SOURCES. This is the same as the source file described above, and the link from the flat file is both G_SOURCE and S_SOURCE. It should be noted that although the flat file eases data query, it is not a normalized database structure, and actual updates performed by the states and other responsible agencies should be done using the relational data tables. The entity-relationship diagram describing relationships between attribute tables in the ESI data structure does NOT include the BIOFILE data table, and this data table is NOT described in a Detailed_Description section.

Entity_and_Attribute_Detail_Citation:
A complete description of entity types, attributes, and attribute values for ESI atlases can be found in the NOAA ESI Guidelines (http://response.restoration.noaa.gov/esi_guidelines).

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Distribution_Information:
Distributor:
Contact Information:
Contact Person Primary:
Contact Person:
ESI Manager
Contact Organization:
NOAA, Office of Response and Restoration
Contact Address:
Address Type:
Physical Address
Address:
7600 Sand Point Way N.E.
City:
Seattle
State or Province:
Washington
Postal Code:
98115-6349
Contact Voice Telephone:
(206) 526-6944
Contact Facsimile Telephone:
(206) 526-6329
Contact Electronic Mail Address:
orr.esi@noaa.gov

Resource Description:
Downloadable Data

Distribution Liability:
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format. If problems are encountered either in downloading the ESI data or if any file appears corrupted, please contact the ESI manager.

Custom Order Process:
Contact NOAA if you require the data be provided to you on CD/DVD. (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export files, Shapefiles, and a file Geodatabase (the recommended format). The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

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Metadata Reference Information:
Metadata Date:
201403
Metadata Contact:
Contact Information:
Contact Person Primary:
Contact Person:
ESI Manager
Contact Organization:
NOAA, Office of Response and Restoration
Contact Position:
GIS Manager
Contact Address:
Address Type:
Physical Address
Address:
7600 Sand Point Way, N.E.
City:
Seattle
State_or_Province:
Washington
Postal_Code:
98115-6349
Contact_Voice_Telephone:
(206) 526-6944
Contact_Facsimile_Telephone:
(206) 526-6329
Contact_Electronic_Mail_Address:
orr.esi@noaa.gov

Metadata_Standard_Name:
Content Standards for Digital Geospatial Metadata

Metadata_Standard_Version:
FGDC-STD-001-1998

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Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: FISH (Fish Polygons)

Metadata:

- Identification Information
- Data Quality Information
- Spatial Data Organization Information
- Spatial Reference Information
- Entity and Attribute Information
- Distribution Information
- Metadata Reference Information

Identification Information:

Citation Information:

Originator:

Originator:
Department of Homeland Security, United States Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.

Publication_Date:
201403

Title:
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: FISH (Fish Polygons)

Edition:
Second

Geospatial_Data_Presentation_Form:
vector digital data

Series Information:

Series_Name:
None

Issue_Identification:
Delaware/New Jersey/Pennsylvania

Publication_Information:
Publication_Place:
Seattle, Washington

Publisher:
NOAA's Ocean Service, Office of Response and Restoration (OR&R), Emergency Response Division (ERD).

Other_Citation_Details:

Online_Linkage:
http://response.restoration.noaa.gov/esi

Other_Links:
http://response.restoration.noaa.gov/esi_downloads

Other_Links:
http://response.restoration.noaa.gov/esi_guidelines

Description:

Abstract:
This data set contains sensitive biological resource data for marine, estuarine, anadromous, and freshwater fish species in Delaware/New Jersey/Pennsylvania. Vector polygons in this data set represent fish distribution, concentration areas,
spawning areas, and anadromous fish spawning runs. Species specific abundance, seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer. This data set comprises a portion of the ESI data for Delaware/New Jersey/Pennsylvania. 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 FISHL data layer, part of the larger Delaware/New Jersey/Pennsylvania ESI database, for additional fish information.

**Purpose:**
The ESI data were collected, mapped, and digitized to provide environmental data for oil spill planning and response. The Clean Water Act with amendments by the Oil Pollution Act of 1990 requires response plans for immediate and effective protection of sensitive resources.

**Time_Period_of_Content:**

**Time_Period_Information:**
**Range_of_Dates/Times:**
- **Beginning_Date:** 1985
- **Ending_Date:** 2013

**Currentness_Reference:**
The data were compiled during 2013-2014. The currentness dates for the data range from 1985 to 2013 and are documented in the Lineage section.

**Status:**

**Progress:**
Complete

**Maintenance_and_Update_Frequency:**
None Scheduled

**Spatial_Domain:**

**Bounding_Coordinates:**
- **West_BoundingCoordinate:** -75.75000
- **East_BoundingCoordinate:** -74.03800
- **North_BoundingCoordinate:** 40.23700
- **South_BoundingCoordinate:** 38.37500

**Keywords:**

**Theme:**

**Theme_Keyword_Thesaurus:**
ISO 19115 Topic Category

**Theme_Keyword:**
biota

**Theme_Keyword:**
environment

**Theme:**

**Theme_Keyword_Thesaurus:**
None

**Theme_Keyword:**
Environmental Monitoring

**Theme_Keyword:**
ESI

**Theme_Keyword:**
Sensitivity maps

**Theme_Keyword:**
Coastal resources

**Theme_Keyword:**
Oil spill planning

**Theme_Keyword:**
Coastal Zone Management

**Theme_Keyword:**
Wildlife

*Theme_Keyword:* Fish

*Theme:*  
  *Theme_Keyword_Thesaurus:* NOS Data Explorer Topic Category

*Theme_Keyword:* Environmental Monitoring

*Place:*  
  *Place_Keyword_Thesaurus:* None

*Place_Keyword:* Delaware/New Jersey/Pennsylvania

*Access_Constraints:* None

*Use_Constraints:*  
DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Management boundaries are not to be considered legal boundaries. Edges may have been altered for cartographic processes. Besides the above warnings, there are no use constraints on these data. Note that the ESI database should not be used to the exclusion of other pertinent data or information held by state or federal agencies or other organizations. Likewise, information contained in the database cannot be used in place of consultations with environmental, natural resource, and cultural resource agencies, or in place of field surveys. Recognize that the information contained in the ESI database represents known concentration areas or occurrences of natural, cultural, and human-use resources, but does not necessarily represent the full distribution or range of each species or resource. This is particularly important to recognize when considering potential impacts to protected resources, such as endangered species, wetlands, etc. Acknowledgment of the originators, publishers, contributors, and sources listed would be appreciated in products derived from these data.

*Browse_Graphic:*  
  **Browse_Graphic_File_Name:** http://response.restoration.noaa.gov/sites/default/files/esimaps/gisdata/DE_NJ_PA_2014_datafig.jpg

  **Browse_Graphic_File_Description:** Depicts the relationships between spatial data layers and attribute data tables for the Delaware/New Jersey/Pennsylvania ESI data.

  **Browse_Graphic_File_Type:** JPEG

*Browse_Graphic:*  
  **Browse_Graphic_File_Name:** http://response.restoration.noaa.gov/sites/default/files/esimaps/gisdata/DE_NJ_PA_2014_datafig2.jpg

  **Browse_Graphic_File_Description:** Depicts the relationships between spatial data layers and desktop data tables for the Delaware/New Jersey/Pennsylvania ESI data.

  **Browse_Graphic_File_Type:** JPEG

*Data_Set_Credit:*  
This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Office of Response and Restoration (OR&R), Emergency Response Division (ERD), Seattle, Washington; and The Department of Homeland Security, United States Coast Guard Office of Incident Management and Preparedness, Washington, D.C.

*Native_Data_Set_Software:*  
The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(R) (version 10.2) and SQL SERVER(R) (version 2005). The hardware configuration is PCs with Windows Operating System 7. The Spatial_Data_Organization Information section refers only to the source files in the ARC export format. The following files are included in the data set: benthic.e00, birds.e00, esil.e00, esip.e00, fish.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, soc_econ.e00, and t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut.e00, biofile.e00, biore.e00, breed.e00, breed_dt.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, sources.e00, and status.e00.

*Data_Quality_Information:*
Attribute_Accuracy:

Attribute_Accuracy_Report:

A multi-stage error checking process is used to verify both attribute accuracy and logical consistency throughout data production. The process includes a standardized data entry methodology, hardcopy data review by in-house and external resource experts, a final Quality Assurance/Quality Control (QA/QC) process, and multiple automated logical consistency checks. Quantitative data (such as densities, counts, abundances, or concentrations) provided by resource experts for inclusion in the data set may vary widely in attribute accuracy, depending upon the methodology used to collect and compile such data. For a more detailed evaluation of source data attribute accuracy, contact the sources listed in the Lineage section.

Logical_Consistency_Report:

A multi-stage error checking process, described in the above Attribute_Accuracy_Report, is used to verify both attribute accuracy and logical consistency throughout data production. This process includes multiple automated logical consistency checks that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and SQL SERVER(R) to ARC/INFO(R) consistencies. After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks. In the process of checking for topological and database consistencies, new ID's and RARNUM's or HUNUM's are also generated. The new ID's are a combination of atlas number, element number, and record number. In addition, the value used to represent the element is modified to reflect the type of feature being mapped. In the case of an element that is normally represented by a point or polygon, a value of 20 is added to the standard element value for mapping of linear features. In the case where an element usually mapped as a polygon is represented by a point, a value of 30 is added to the regular element value. The RARNUM's are also modified to include the atlas number, so multiple atlases can be combined and RARNUM's remain unique. RARNUM's are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUM's are also modified to include the atlas number.

Completeness_Report:

These data represent a synthesis of expert knowledge, survey data, and digital data on fish distribution, concentration areas, spawning areas, and anadromous fish spawning runs. See also the FISHL data layer, part of the larger Delaware/New Jersey/Pennsylvania ESI database, for additional fish information. These data do not necessarily represent all fish occurrences in Delaware/New Jersey/Pennsylvania. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 65, Bluefish, Pomatomus saltatrix; 74, Rainbow trout, Oncorhynchus mykiss; 81, Spiny dogfish, Squalus acanthias; 85, Alewife, Alosa pseudoharengus; 86, Blueback herring, Alosa aestivalis; 87, American shad, Alosa sapidissima; 88, Winter flounder, Pleuronectes americanus; 97, Tautog, Tautoga onitis; 98, American eel, Anguilla rostrata; 100, Brown trout, Salmo trutta; 101, Shortnose sturgeon, Acipenser brevisrostrum; 102, Atlantic sturgeon, Acipenser oxyrinchus; 104, Striped bass, Morone saxatilis; 105, Hickory shad, Alosa mediocris; 108, Summer flounder, Paralichthys dentatus; 110, Black sea bass, Centropristis striata; 113, Bay anchovy, Anchoa mitchilli; 115, Atlantic menhaden, Brevoortia tyrannus; 121, Spot, Leiostomus xanthurus; 122, Black drum, Pogonias cromis; 123, Atlantic croaker, Micropogonias undulates; 138, Weakfish, Cynoscion regalis; 145, White perch, Morone americana; 146, Atlantic herring, Clupea harengus; 147, Atlantic mackerel, Scomber scombrus; 148, Silver hake, Merluccius bilinearis; 149, Atlantic cod, Gadus morhua; 150, Scup, Stenotomus chrysops; 152, Yellow perch, Perca flavescens; 153, Northern kingfish, Menticirrhus saxatilis; 157, Goosefish, Lophius americanus; 158, Butterfish, Pepirulus triacanthus; 160, Windowpane, Scophthalmus aquosus; 163, Gizzard shad, Dorosoma cepedianum; 179, Largemouth bass, Micropterus salmoides; 180, Smallmouth bass, Micropterus dolomieu; 200, Blue catfish, Ictalurus furcatus; 201, Channel catfish, Ictalurus punctatus; 257, Flathead catfish, Pylodictis olivaris; 290, Striped anchovy, Anchoa hepsetus; 294, Spotted hake, Urophycis regia; 318, Atlantic sharpnose shark, Rhizoprionodon terraenovae; 322, Tiger shark, Galeocerdo cuvier; 365, Rare fish, n/a; 477, Cownose ray, Rhinoptera bonasus; 522, Yellowfin tuna, Thunnus albacares; 620, Endangered fish, n/a; 792, Skipjack tuna, Katsuwonous pelamis; 946, Albacore, Thunnus alalunga; 967, Sandbar shark, Carcharhinus plumbeus; 1089, Little skate, Leucoraja ocellata; 1130, Dusky shark, Carcharhinus obscurus; 1131, Winter skate, Leucoraja ocellata; 1146, Bluefin tuna, Thunnus thynnus; 1172, Tilefish, Lopholatilus chamaeleonticeps; 1238, Thresher shark, Alopias vulpinus; 1239, Bullnose ray, Myliobatis freminvillei.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

Spatial components for the biological data layers can come from expert interviews, hardcopy, or digital sources. Some of the spatial components of the biological data layers may have been developed using regional experts who estimate concentration areas. It is difficult to estimate the positional accuracy of such data, except to state that they are compiled on hardcopy base maps with a scale of 1:45,000. Some of the spatial components of the biological data sets are developed from pre-existing digital or hardcopy sources and reflect the positional accuracy of these original data. Note that biological resource data by their very nature are considered "fuzzy", and this should be understood when considering the positional accuracy of vector digital objects representing these resources. See the Lineage and Process_Description sections for more information on the original source.
data and how these data were integrated or manipulated to create the final data set.

**Lineage:**

**Source Information:**

**Source Citation:**

**Citation Information:**

**Originator:**

ABLE, K.W., AND M.P. FAHAY

**Publication Date:**

1998

**Title:**

THE FIRST YEAR IN THE LIFE OF ESTUARINE FISHES IN THE MIDDLE ATLANTIC BIGHT

**Geospatial Data Presentation Form:**

HARDCOPY TEXT

**Publication Information:**

**Publication Place:**

NEW BRUNSWICK, NJ

**Publisher:**

RUTGERS UNIVERSITY PRESS

**Type of Source Media:**

document

**Source Time Period of Content:**

**Time Period Information:**

**Range of Dates/Times:**

**Beginning Date:**

1998

**Ending Date:**

1998

**Source Currentness Reference:**

DATE OF PUBLICATION

**Source Citation Abbreviation:**

Src_0

**Source Contribution:**

FISH INFORMATION

**Source Information:**

**Source Citation:**

**Citation Information:**

**Originator:**

ATLANTIC STATES MARINE FISHERIES COMMISSION (ASMFC)

**Publication Date:**

2002

**Title:**

INTERSTATE FISHERY MANAGEMENT PLAN FOR SPINY DOGFISH

**Geospatial Data Presentation Form:**

document

**Publication Information:**

**Publication Place:**

ATLANTIC STATES MARINE FISHERIES COMMISSION

**Publisher:**

ATLANTIC STATES MARINE FISHERIES COMMISSION

**Other Citation Details:**

FISHERY MANAGEMENT REPORT NO. 40

**Online Linkage:**


**Type of Source Media:**

online

**Source Time Period of Content:**

**Time Period Information:**

**Range of Dates/Times:**

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Originator:
ATLANTIC STATES MARINE FISHERIES COMMISSION (ASMFC)
Publication_Date:
2013
Title:
ATLANTIC STATES MARINE FISHERIES COMMISSION ANADROMOUS FISH SPAWNING REACHES
Geospatial_Data_Presentation_Form:
vector digital data
Other_Citation_Details:
UNPUBLISHED
Type_of_Source_Media:
online
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Range_of_Dates/Times:
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2013
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Source_Citation:
Citation_Information:
Originator:
CASTRO, J.I.
Publication_Date:
2011
Title:
THE SHARKS OF NORTH AMERICA
Geospatial_Data_Presentation_Form:
HARDCOPY TEXT
Publication_Information:
Publication_Place:
NEW YORK
Publisher:
OXFORD UNIVERSITY PRESS
Type_of_Source_Media:
paper
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date:
2011
Ending_Date:
2011
Source_Currentness_Reference:
DATE OF PUBLICATION
Source_Citation_Abbreviation:
Src_3
Source_Contribution:
FISH INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator:
DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL
CONTROL (DNREC)
Publication_Date:
2012
Title:
DELAWARE BAY 16 FT TRAWL INDEPENDENT SAMPLING DATA
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spreadsheet
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Beginning_Date:
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DATE OF SURVEY
Source_Citation_Abbreviation:
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Source_Citation:
Citation_Information:
Originator:
DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL
CONTROL (DNREC)
Publication_Date:
2012
Title:
DELAWARE BAY 30 FT TRAWL INDEPENDENT SAMPLING DATA
Geospatial_Data_Presentation_Form:
spreadsheet
Other_Citation_Details:
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2003
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2012
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DATE OF SURVEY
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      DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL
      CONTROL (DNREC)
    Publication_Date:
      2012
    Title:
      DELAWARE RIVER 16 FT TRAWL INDEPENDENT SAMPLING DATA
  Geospatial_Data_Presentation_Form:
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  Other_Citation_Details:
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FISH INFORMATION
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Source_Citation:
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    Originator:
      DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL
      CONTROL (DNREC)
    Publication_Date:
      2012
    Title:
      ELEMENT OCCURRENCE RECORDS
  Geospatial_Data_Presentation_Form:
    vector digital data
  Other_Citation_Details:
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      Ending_Date:
        2012
Source_Currentness_Reference:
DATE OF SURVEY
Source_Citation_Abbreviation: Src_7
Source_Contribution: FISH INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator:
DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL (DNREC)
Publication_Date: 2012
Title:
INDIAN RIVER AND REHOBOOTH BAY 16 FT TRAWL INDEPENDENT SAMPLING DATA
Geospatial_Data_Presentation_Form:
spreadsheet
Other_Citation_Details:
UNPUBLISHED
Type_of_Source_Media:
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Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date: 2003
Ending_Date: 2012
Source_Currentness_Reference:
DATE OF SURVEY
Source_Citation_Abbreviation: Src_8
Source_Contribution: FISH INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator:
DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL (DNREC) - FISH AND SHELLFISH GROUP
Publication_Date: 2013
Title:
DELAWARE BAY FISH, SHELLFISH, MARINE MAMMAL, REPTILE REVIEW MEETING
Geospatial_Data_Presentation_Form:
EXPERT KNOWLEDGE
Other_Citation_Details:
UNPUBLISHED
Type_of_Source_Media:
PERSONAL COMMUNICATION
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date: 2013
Ending_Date: 2013
Source_Currentness_Reference:
DATE OF COMMUNICATION
Source_Citation_Abbreviation:
Source_Citation:
Citation_Information:
Originator:
DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL (DNREC)- MATT FISHER
Publication_Date: 2012
Title: ATLANTIC STURGEON JUVENILE TELEMETRY DATA
Geospatial_Data_Presentation_Form: document
Other_Citation_Details: UNPUBLISHED
Type_of_Source_Media: EMAIL
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date: 2012
Ending_Date: 2012
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: Src_10
Source_Contribution: FISH INFORMATION

Source_Citation:
Citation_Information:
Originator:
DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL (DNREC) - MATT FISHER
Publication_Date: 2013
Title: DELAWARE BAY ATLANTIC AND SHORTNOSE STURGEON REVIEW
Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
Other_Citation_Details: UNPUBLISHED
Type_of_Source_Media: PERSONAL COMMUNICATION
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date: 2013
Ending_Date: 2013
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: Src_11
Source_Contribution:
2010

Source Currentness Reference:
DATE OF PUBLICATION

Source Citation Abbreviation:
Src_13

Source Contribution:
FISH INFORMATION

Source Information:
Source Citation:

Citation Information:
Originator:
FISHER, M., D. FOX, M. DELUCIA, AND THE NATURE CONSERVANCY

Publication Date:
2013

Title:
ATLANTIC STURGEON AND SHORTNOSE STURGEON DISTRIBUTIONS IN DELAWARE BAY

Geospatial Data Presentation Form:
vector digital data

Other Citation Details:
UNPUBLISHED

Type of Source Media:
EMAIL

Source Time Period of Content:

Time Period Information:
Range of Dates/Times:
Beginning Date:
2013

Ending Date:
2013

Source Currentness Reference:
DATE OF COMMUNICATION

Source Citation Abbreviation:
Src_14

Source Contribution:
FISH INFORMATION

Source Information:
Source Citation:

Citation Information:
Originator:
MERSON, REBEKA R., H.L. PRATT JR.

Publication Date:
2001

Title:
DISTRIBUTION, MOVEMENTS AND GROWTH OF YOUNG SANDBAR SHARKS, CARCHARHINUS PLUMBEUS, IN THE NURSERY GROUNDS OF DELAWARE BAY

Geospatial Data Presentation Form:
document

Publication Information:
Publication Place:
BERLIN, HEIDELBERG

Publisher:
SPRINGER SCIENCE+BUSINESS MEDIA

Other Citation Details:

Type of Source Media:
one online

Source Time Period of Content:

Time Period Information:
Range of Dates/Times:
Beginning_Date:
2001
Ending_Date:
2001
Source_Currentness_Reference:
DATE OF PUBLICATION
Source_Citation_Abbreviation:
Src_15
Source_Contribution:
FISH INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator:
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) NATIONAL MARINE FISHERIES SERVICE (NMFS) OFFICE OF SUSTAINABLE FISHERIES (OSF) HIGHLY MIGRATORY SPECIES (HMS) MANAGEMENT DIVISION
Publication_Date:
2006
Title:
FINAL CONSOLIDATED ATLANTIC HIGHLY MIGRATORY SPECIES FISHERY MANAGEMENT PLAN
Geospatial_Data_Presentation_Form:
document
Publication_Information:
Publication_Place:
SILVER SPRING, MD
Publisher:
DEPARTMENT OF COMMERCE
Online_Linkage:
http://www.nmfs.noaa.gov/sfa/hms/FMP/Consolidated_FMP.htm
Type_of_Source_Media:
online
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date:
2006
Source_Currentness_Reference:
DATE OF PUBLICATION
Source_Citation_Abbreviation:
Src_16
Source_Contribution:
FISH INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator:
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) NATIONAL MARINE FISHERIES SERVICE (NMFS) OFFICE OF SUSTAINABLE FISHERIES (OSF) HIGHLY MIGRATORY SPECIES (HMS) MANAGEMENT DIVISION
Publication_Date:
2009
Title:
ESSENTIAL FISH HABITAT FOR ATLANTIC HIGHLY MIGRATORY SPECIES
Geospatial_Data_Presentation_Form:
vector digital data
Publication_Information:
Publication_Place:
SILVER SPRING, MD
Title: FINAL ADJUNCT TO THE 2006 CONSOLIDATED ATLANTIC HIGHLY MIGRATORY SPECIES FISHERY MANAGEMENT PLAN, ESSENTIAL FISH HABITAT

Publisher: DEPARTMENT OF COMMERCE

Online Linkage:

Type of Source Media: online

Source Time Period of Content:

Time Period Information:

Range of Dates/Times:

Beginning Date: 2009

Ending Date: 2009

Source Currentness Reference: DATE OF PUBLICATION

Source Citation Abbreviation: Src_18

Source Contribution: FISH INFORMATION

Source Information:

Source Citation:

Citation Information:

Originator:

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) NATIONAL MARINE FISHERIES SERVICE (NMFS) OFFICE OF SUSTAINABLE FISHERIES (OSF) HIGHLY MIGRATORY SPECIES (HMS) MANAGEMENT DIVISION

Publication Date: 2009

Title: FINAL ADJUNCT TO THE 2006 CONSOLIDATED ATLANTIC HIGHLY MIGRATORY SPECIES FISHERY MANAGEMENT PLAN, ESSENTIAL FISH HABITAT

Geospatial Data Presentation Form: document

Publication Information:

Publication Place:

SILVER SPRING, MD

Publisher:

DEPARTMENT OF COMMERCE

Online Linkage:

Type of Source Media: online

Source Time Period of Content:

Time Period Information:

Range of Dates/Times:

Beginning Date: 2009

Ending Date: 2009

Source Currentness Reference: DATE OF PUBLICATION

Source Citation Abbreviation: Src_18

Source Contribution: FISH INFORMATION

Source Information:

Source Citation:

Citation Information:

Originator:

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) NATIONAL
Citation Information:
Originator:
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF FISH AND WILDLIFE (NJDEP F&W)
Publication Date:
2012
Title:
NEW JERSEY DELAWARE RIVER SEINE DATA 2002-2012
Geospatial Data Presentation Form:
spreadsheet
Other Citation Details:
UNPUBLISHED
Type of Source Media:
CD-ROM
Source Time Period of Content:
Time Period Information:
Range of Dates/Times:
Beginning Date:
2002
Ending Date:
2012
Source Currentness Reference:
DATE OF SURVEY
Source Citation Abbreviation:
Src_21
Source Contribution:
FISH INFORMATION
Source Information:
Source Citation:
Citation Information:
Originator:
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF FISH AND WILDLIFE (NJDEP F&W) BUREAU OF MARINE FISHERIES
Publication Date:
2013
Title:
NEW JERSEY OCEAN TRAWL INDEPENDENT SAMPLING DATA
Geospatial Data Presentation Form:
spreadsheet
Other Citation Details:
UNPUBLISHED
Type of Source Media:
EMAIL
Source Time Period of Content:
Time Period Information:
Range of Dates/Times:
Beginning Date:
2003
Ending Date:
2013
Source Currentness Reference:
DATE OF SURVEY
Source Citation Abbreviation:
Src_22
Source Contribution:
FISH INFORMATION
Source Information:
Source Citation:

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF FISH AND WILDLIFE (NJDEP F&W) BUREAU OF MARINE FISHERIES AND SHELLFISHERIES

Publication_Date:
2013

Title:
NEW JERSEY BUREAU OF MARINE FISHERIES AND SHELLFISHERIES REVIEW MEETING

Geospatial_Data_Presentation_Form:
EXPERT KNOWLEDGE

Other_Citation_Details:
UNPUBLISHED

Type_of_Source_Media:
PERSONAL COMMUNICATION

Source_Time_Period_of_Content:

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Range_of_Dates/Times:
Beginning_Date:
2013
Ending_Date:
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Source_Currentness_Reference:
DATE OF COMMUNICATION

Source_Citation_Abbreviation:
Src_23

Source_Contribution:
FISH INFORMATION

Source_Information:

Source_Citation:

Citation_Information:
Originator:
O'HERRON, J.C. II, K.W. ABLE, AND R.W. HASTINGS

Publication_Date:
1993

Title:
MOVEMENTS OF SHORTNOSE STURGEON (ACIPENSER BREVIROSTRUM) IN THE DELAWARE RIVER

Geospatial_Data_Presentation_Form:
document

Publication_Information:
Publication_Place:
CHARLOTTESVILLE, VA
Publisher:
ESTUARIES

Other_Citation_Details:
ESTUARIES, VOL. 16, NO. 2, P.235-240, JUNE 1993

Type_of_Source_Media:
paper

Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:
Beginning_Date:
1993
Ending_Date:
1993

Source_Currentness_Reference:
DATE OF PUBLICATION

Source_Citation_Abbreviation:
Src_24

Source_Contribution:
FISH INFORMATION
PERILLO, J.A. AND L.H. BUTLER

2009

EVALUATING THE USE OF FAIRMOUNT DAM FISH PASSAGE FACILITY WITH APPLICATION TO ANADROMOUS FISH RESTORATION IN THE SCHUYKILL RIVER, PENNSYLVANIA

JOURNAL OF THE PENNSYLVANIA ACADEMY OF SCIENCE

VOL. 83, NO. 1, P. 24-33, 2009


1994

DISTRIBUTION AND ABUNDANCE OF FISHES AND INVERTEBRATES IN MID-ATLANTIC ESTUARIES. ELMR REP. NO. 12

SILVER SPRING, MD

NOAA/NOS STRATEGIC ENVIRONMENTAL ASSESSMENTS DIVISION

Page 19 of 52
THE NATURE CONSERVANCY (TNC)

2011
THE NATURE CONSERVANCY ANADROMOUS FISH SPAWNING REACHES
vector digital data
UNPUBLISHED
EMAIL
2011
THE NATURE CONSERVANCY ANADROMOUS FISH SPAWNING REACHES
vector digital data
UNPUBLISHED
EMAIL
2012
COMPREHENSIVE CONSERVATION PLAN
document
PHILADELPHIA, PA
UNITED STATES FISH AND WILDLIFE SERVICE
online
2012
COMPREHENSIVE CONSERVATION PLAN
document
PHILADELPHIA, PA
UNITED STATES FISH AND WILDLIFE SERVICE
online
The mapping extent was dependent upon information availability and location of mapped coastal habitats and shorelines. Fish species depicted in this atlas include select marine, estuarine, and freshwater species. Species of conservation interest, commercial or recreational importance, or ecological importance are emphasized. Fish polygons were created based on survey information, digital data, and expert opinion provided primarily by resource experts at Delaware Department of Natural Resources and Environmental Control (DNREC), New Jersey Department of Environmental Control Bureau of Marine Fisheries (NJDEP BMF) and the United States Fish and Wildlife Service (USFWS), but also Atlantic States Marine Fisheries Commission (ASMFC), Pennsylvania Fish and Boat Commission (PFBC), Virginia Institute of Marine Science (VIMS), and select published literature. DNREC staff provided independent sampling data for Delaware Bay, Delaware River, and the Atlantic Ocean. Relatively little data was available for Pennsylvania fishes. PFBC provided species lists for a number of Delaware River tributaries, based on electrofishing surveys done during spring to fall months. No data has been collected for the Delaware River by PFBC staff since 1996, so NJDEP BMF data was used as the primary source for species in the Delaware River. The presence of a species for a given month in a given geography was based primarily on occurrence rates in the independent sampling data. Species that were caught more than one tenth of the time at sampling stations within a survey area and across the ten year sampling window were marked as ‘present’ for that month. In special cases the cut-off for presence was lowered, either based on review by DNREC or NJDEP BMF staff or because of low but consistent catch rates across all months. Presence during the winter months, i.e. those not surveyed by DNREC or NJDEP BMF staff, were added based on expert opinion or published literature. Estuarine Living Marine Resources (ELMR) data was used to fill in species information within certain geographies and for select species in DE and NJ waters. These geographies include Delaware Bay, the DE Inland Bays, Barnegat Bay, and the other smaller inland bays along the NJ coast. Concentrations and seasonality were adopted as is. Atlantic (FE, SE) and shortnose (FE, SE) sturgeon were mapped to areas where they are known to occur. Polygons were based on data provided by DNREC staff, The Nature Conservancy (TNC), published literature, and expert knowledge.
from DNREC staff and Dr. Fox, Delaware State University. Emphasis was given to mapping areas known to harbor large concentrations of juveniles, large concentrations of wintering fish, and critical spawning grounds. Spawning runs for anadromous fish in the Delaware Bay region were mapped based on data from the ASMFC and TNC. ASMFC spawning data was used as the primary data source, and TNC data was used to fill in areas where coverage was lacking. Timing of spawning runs was gathered based on published literature and reviewed by DNREC and NJDEP BMF staff. All concentration and seasonality information was reviewed by both NJDEP BMF and DNREC staff, and adjusted in some cases to be consistent with expert opinion. Please note, many species can be found in estuarine waters year-round but are significantly less common in the winter months. Where possible, seasonality and concentration information represents months in which a particular species is most likely to be encountered instead of all months a species could potentially be found in a location. For many species, the timing of life history events, i.e. spawning, was added based upon data from the following sources: 1) Able K. W., Fahay M. P.. 1998. The First Year in the Life of Estuarine Fishes in the Middle Atlantic Bight.; 2) Dove, L.E. and Nyman, R.M. (eds.), 1995, Living Resources of the Delaware Estuary; or 3) the mid-Atlantic ELMR data. The above digital and/or hardcopy sources were compiled by the project biologist to create the FISH data layer. Depending on the type of source data, three general approaches are used for compiling the data layer: 1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:45,000 topographic quadrangles and digitized; 2) hardcopy maps are digitized at their source scale; 3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer. The ESI, biology, and human-use data are compiled into the standard ESI digital data format. A second set of interviews with participating resource experts are conducted to review the compiled data. If necessary, edits to the FISH data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.

**Process_Date**: 201403

**Process_Contact:**

**Contact Information:**

- **Contact_Organization_Primary:**
  - **Contact_Organization:** NOAA, Office of Response and Restoration
  - **Contact_Person:** ESI Manager
- **Contact_Address:**
  - **Address_Type:** Physical address
  - **Address:** 7600 Sand Point Way, N.E.
  - **City:** Seattle
  - **State_or_Province:** Washington
  - **Postal_Code:** 98115-6349
- **Contact_Voice_Telephone:**
  - (206) 526-6944
- **Contact_Facsimile_Telephone:**
  - (206) 526-6329
- **Contact_Electronic_Mail_Address:**
  - orr.esi@noaa.gov

**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:**
- 2925

**SDTS Terms Description:**
- **SDTS_Point_and_Vector_Object_Type:** Area point
- **Point and Vector Object Count:**
  - 2924

**SDTS Terms Description:**
- **SDTS_Point_and_Vector_Object_Type:** Complete chain
- **Point and Vector Object Count:**
  - 5294

**SDTS Terms Description:**
- **SDTS_Point_and_Vector_Object_Type:** Link
- **Point and Vector Object Count:**
  - 968987

**SDTS Terms Description:**
- **SDTS_Point_and_Vector_Object_Type:** Node, planar graph
- **Point and Vector Object Count:**
  - 5041

**Spatial Reference Information:**

**Horizontal Coordinate System Definition:**

**Geographic:**
- **Latitude Resolution:** 0.0000001
- **Longitude Resolution:** 0.0000001

**Geographic Coordinate Units:**
- Decimal degrees

**Geodetic Model:**
- **Horizontal Datum Name:** North American Datum of 1983
- **Ellipsoid Name:** Geodetic Reference System 80
- **Semi-major Axis:** 6378137.000000
- **Denominator of Flattening Ratio:** 298.257222

**Entity and Attribute Information:**

**Detailed Description:**

**Entity Type:**
- **Entity_Type_Label:** FISH.PAT

**Entity Type Definition:**
The FISH.PAT table contains attribute information for the vector polygons in this data set representing fish distribution, concentration areas, spawning areas, and anadromous fish spawning runs. Note that all attribute information is stored in a series of relational files, described below and in the Overview_Description section. See the Browse Graphic section for a link to the entity-relationship diagram, which describes the relationships between attribute tables in the ESI data structure.

**Entity_Type_Definition_Source:**
- NOAA ESI Guidelines
**Attribute:**

**Attribute_Label:**
- ID

**AttributeDefinition:**
An identifier that links vector objects in the biology data layers to records in the BIO_LUT data table. ID is a concatenation of atlas number (212), element number (2), and record number. ID values of 9999 are holes in polygons and do not contain information.

**AttributeDefinitionSource:**
NOAA

**AttributeDomainValues:**
- **RangeDomain:**
  - **RangeDomainMinimum:** 2210200002
  - **RangeDomainMaximum:** 2210202925

**Attribute:**

**Attribute_Label:**
- RARNUM

**AttributeDefinition:**
An identifier that links directly to the BIORES table or the flat format BIOFILE table. RARNUM values of 0 are holes in the polygons and do not contain information.

**AttributeDefinitionSource:**
NOAA

**AttributeDomainValues:**
- **RangeDomain:**
  - **RangeDomainMinimum:** 221000032
  - **RangeDomainMaximum:** 221001113

**DetailedDescription:**

**Entity_Type:**

**EntityTypeLabel:** BIO_LUT

**EntityTypeDefinition:**
The data table BIO_LUT is a lookup table that contains items necessary for linking vector objects in the biological data layers with the BIORES data table. Note that all attribute information is stored in a series of relational files, described below and in the Overview_Description section. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

**EntityTypeDefinitionSource:**
NOAA ESI Guidelines

**Attribute:**

**Attribute_Label:**
RARNUM

**AttributeDefinition:**
An identifier that links records in the BIO_LUT data table to records in the BIORES data table or the flat format BIOFILE data table. RARNUM values of 0 are holes in polygons and do not contain information.

**AttributeDefinitionSource:**
NOAA

**AttributeDomainValues:**
- **RangeDomain:**
  - **RangeDomainMinimum:** 212000001
  - **RangeDomainMaximum:** 212001295

**Attribute:**

**Attribute_Label:**
- ID

**AttributeDefinition:**
An identifier that links vector objects in the biology data layers to records in the BIO_LUT data table. ID is a concatenation of atlas number (212), element number (2), and record number. ID values of 9999 are holes in polygons and do not contain information.
concatenation of atlas number (212), element number (2), and record number. ID values of 9999 are holes in polygons and do not contain information.

**Attribute Definition Source:**
NOAA

**Attribute Domain Values:**

Range Domain:

Range Domain Minimum:
2120100002

Range Domain Maximum:
2120900295

**Detailed Description:**

**Entity Type:**

Entity Type Label: BIORES

Entity Type Definition:
The data table BIORES contains both biological attribute data and items necessary for linking vector objects in the biological data layers via the BIO_LUT data table to other associated data tables. See the Browse Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

**Entity Type Definition Source:**
NOAA ESI Guidelines

**Attribute:**

Attribute Label: RARNUM

Attribute Definition:
An identifier that links records in the BIORES data table to records in the BIO_LUT data table or the flat format BIOFILE data table.

**Attribute Definition Source:**
NOAA

**Attribute Domain Values:**

Range Domain:

Range Domain Minimum:
212000001

Range Domain Maximum:
212001295

**Attribute:**

Attribute Label: SPECIES_ID

Attribute Definition:
Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI species list maintained at NOAA.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

Range Domain:

Range Domain Minimum:
1

Range Domain Maximum:
N

**Attribute:**

Attribute Label: CONC

Attribute Definition:
The field CONC refers to "concentration," abundance, or density values of a species at a particular location. Fishery-independent sampling data was used in Delaware River, Delaware Bay, and the Atlantic Ocean to assign concentrations to species. Catch numbers were either provided by DNREC and NJDEP BMF staff as CPUE, or were converted to CPUE using the raw data, and these rates were averaged by geographic regions and across the ten year sampling window to calculate relative concentrations. Species with similar life history, behavior, and habitat requirements were grouped for comparison such as "HIGH-JUVENILE", "HIGH-SPAWNING", "HIGH-YOY" or "HIGH-SPRING". Within these groups average CPUE for all months was used to assign...
concentrations of "LOW", "MED", and "HIGH" within each geographic area. With "LOW", "MED", and "HIGH" corresponding to the first, second and third, and fourth quartiles of averaged CPUE. In the case of ELMR or other data, concentrations were adopted as is. The field may contain descriptive terms such as "ABUNDANT", "COMMON", "HIGHLY-ABUNDANT", "OCCASIONAL", "RARE" or "UNCOMMON". In the absence of concentration information, a concentration of "PRESENT" was assigned.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

Unrepresentable Domain:

Acceptable values change from atlas to atlas.

**Attribute:**

**Attribute Label:** SEASON_ID

**Attribute Definition:**

Numeric identifier for the unique monthly presence and life history characteristics of each species at a given location.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

Range Domain:

- Range Domain Minimum: 1
- Range Domain Maximum: N

**Attribute:**

**Attribute Label:** G_SOURCE

**Attribute Definition:**

Geographic source identifier that links records in the BIORES data table to records in the SOURCES data table.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

Range Domain:

- Range Domain Minimum: 1
- Range Domain Maximum: N

**Attribute:**

**Attribute Label:** S_SOURCE

**Attribute Definition:**

Seasonality source identifier that links records in the BIORES data table to records in the SOURCES data table.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

Range Domain:

- Range Domain Minimum: 1
- Range Domain Maximum: N

**Attribute:**

**Attribute Label:** ELEMENT

**Attribute Definition:**

Major categories of biological data.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

Enumerated Domain:

- Enumerated Domain Value:
BIRD

Enumerated_Domain_Value_Definition:

Birds

Enumerated_Domain_Value_Definition_Source:

NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

FISH

Enumerated_Domain_Value_Definition:

Fish

Enumerated_Domain_Value_Definition_Source:

NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

HABITAT

Enumerated_Domain_Value_Definition:

Habitats and plants

Enumerated_Domain_Value_Definition_Source:

NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

INVERT

Enumerated_Domain_Value_Definition:

Invertebrates

Enumerated_Domain_Value_Definition_Source:

NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

M_MAMMAL

Enumerated_Domain_Value_Definition:

Marine mammals

Enumerated_Domain_Value_Definition_Source:

NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

REPTILE

Enumerated_Domain_Value_Definition:

Reptiles and Amphibians

Enumerated_Domain_Value_Definition_Source:

NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

T_MAMMAL

Enumerated_Domain_Value_Definition:

Terrestrial mammals

Enumerated_Domain_Value_Definition_Source:

NOAA ESI Guidelines

Attribute:

Attribute_Label:

EL_SPE

Attribute_Definition:

Concatenation of ELEMENT and SPECIES_ID. This item links records in the BIORES data table to records in the SPECIES and STATUS data tables.

Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value:
    E####
  Enumerated Domain Value Definition:
    Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1; EL_SPE = 'B00001').

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute:
  Attribute Label: EL_SPE_SEA
  Attribute Definition:
    Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the BIORES data table to records in the SEASONAL and BREED data tables.
  Attribute Definition Source:
    NOAA ESI Guidelines

Entity Type:
  Entity Type Label: SPECIES
  Entity Type Definition:
    The data table SPECIES identifies all species in the ESI data set. See the Browse Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure. Refer to the Completeness Report for a list of layer-specific species.
  Entity Type Definition Source:
    NOAA ESI Guidelines

Attribute:
  Attribute Label: SPECIES_ID
  Attribute Definition:
    Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI species list maintained at NOAA.
  Attribute Definition Source:
    NOAA ESI Guidelines

Range Domain:
  Range Domain Minimum:
    1
  Range Domain Maximum:
    N

Attribute:
  Attribute Label: NAME
  Attribute Definition:
    Species common name for the entire ESI data set.
  Attribute Definition Source:
    NOAA ESI Guidelines

Delaware Bay ESI: FISH
Unrepresentable_Domain:
Acceptable values change from atlas to atlas.

Attribute:
Attribute_Label: GEN_SPEC
Attribute_Definition: Species scientific name for the entire ESI data set.
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values: Unrepresentable_Domain:
Acceptable values change from atlas to atlas.

Attribute:
Attribute_Label: ELEMENT
Attribute_Definition: Major categories of biological data.
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: BIRD
Enumerated_Domain_Value_Definition: Birds
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: FISH
Enumerated_Domain_Value_Definition: Fish
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: HABITAT
Enumerated_Domain_Value_Definition: Habitats and plants
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: INVERT
Enumerated_Domain_Value_Definition: Invertebrates
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: M_MAMMAL
Enumerated_Domain_Value_Definition: Marine Mammals
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Enumerated_Domain:
  Enumerated_Domain_Value:
    REPTILE
  Enumerated_Domain_Value_Definition:
    Reptiles and Amphibians
  Enumerated_Domain_Value_Definition_Source:
    NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      T_MAMMAL
    Enumerated_Domain_Value_Definition:
      Terrestrial Mammals
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute:
  Attribute_Label:
    SUBELEMENT
  Attribute_Definition:
    Element subgroup delineating a logical grouping of species.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        alcid
      Enumerated_Domain_Value_Definition:
        Alcid
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      amphibian
    Enumerated_Domain_Value_Definition:
      Amphibian
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      bivalve
    Enumerated_Domain_Value_Definition:
      Bivalve
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      cephalopod
    Enumerated_Domain_Value_Definition:
      Cephalopod
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      crab
    Enumerated_Domain_Value_Definition:
      Crab
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: diadromous
      Enumerated_Domain_Value_Definition: Diadromous fish
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: diving
      Enumerated_Domain_Value_Definition: Diving bird
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: dolphin
      Enumerated_Domain_Value_Definition: Dolphin
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: e_nursery
      Enumerated_Domain_Value_Definition: Estuarine nursery fish
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: fish
      Enumerated_Domain_Value_Definition: Fish
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: freshwater
      Enumerated_Domain_Value_Definition: Freshwater fish
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: gastropod
      Enumerated_Domain_Value_Definition: Gastropod
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
**Enumerated_Domain_Value:**
- gull_tern

**Enumerated_Domain_Value_Definition:**
- Gull or tern

**Enumerated_Domain_Value_Definition_Source:**
- NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

- **Enumerated_Domain_Value:**
  - insect

- **Enumerated_Domain_Value_Definition:**
  - Insect

- **Enumerated_Domain_Value_Definition_Source:**
  - NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

- **Enumerated_Domain_Value:**
  - invert

- **Enumerated_Domain_Value_Definition:**
  - Invertebrate

- **Enumerated_Domain_Value_Definition_Source:**
  - NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

- **Enumerated_Domain_Value:**
  - lobster

- **Enumerated_Domain_Value_Definition:**
  - Lobster

- **Enumerated_Domain_Value_Definition_Source:**
  - NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

- **Enumerated_Domain_Value:**
  - m_benthic

- **Enumerated_Domain_Value_Definition:**
  - Marine benthic fish

- **Enumerated_Domain_Value_Definition_Source:**
  - NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

- **Enumerated_Domain_Value:**
  - m_pelagic

- **Enumerated_Domain_Value_Definition:**
  - Marine pelagic fish

- **Enumerated_Domain_Value_Definition_Source:**
  - NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

- **Enumerated_Domain_Value:**
  - passerine

- **Enumerated_Domain_Value_Definition:**
  - Passerine bird

- **Enumerated_Domain_Value_Definition_Source:**
  - NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

- **Enumerated_Domain_Value:**
  - pelagic

- **Enumerated_Domain_Value_Definition:**
  - Pelagic bird
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      pinniped
    Enumerated_Domain_Value_Definition:
      Pinniped
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      plant
    Enumerated_Domain_Value_Definition:
      Plant
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      raptor
    Enumerated_Domain_Value_Definition:
      Raptor
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      sav
    Enumerated_Domain_Value_Definition:
      Submerged aquatic vegetation
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      shorebird
    Enumerated_Domain_Value_Definition:
      Shorebird
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      sm_mammal
    Enumerated_Domain_Value_Definition:
      Small mammal
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      snake
    Enumerated_Domain_Value_Definition:
      Snake
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
**Enumerated Domain Value:**
turtle

**Enumerated Domain Value Definition:**
Turtle

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**
wading

**Enumerated Domain Value Definition:**
Wading bird

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**
waterfowl

**Enumerated Domain Value Definition:**
Waterfowl

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**
wetland

**Enumerated Domain Value Definition:**
Wetland

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**
whale

**Enumerated Domain Value Definition:**
Whale

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute Label:**
NHP

**Attribute Definition:**
Natural Heritage Program global ranking.

**Attribute Definition Source:**
Network of Natural Heritage Program

**Attribute Domain Values:**

**Codeset Domain:**

**Codeset Name:**
NHP Global Conservation Status Rank

**Codeset Source:**
Natural Heritage Program

**Attribute:**

**Attribute Label:**
DATE_PUB

**Attribute Definition:**
Date of NHP listing.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**
**Enumerated Domain Value:**
```
YYYYMM
```
**Enumerated Domain Value Definition:**
YYYY for year and optionally MM for month
**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**
**Enumerated Domain:**
```
Enumerated Domain Value:
0
```
**Enumerated Domain Value Definition:**
Date unspecified
**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute:**
**Attribute Label:**
EL_SPE
**Attribute Definition:**
Concatenation of ELEMENT and SPECIES_ID. This item links records in the SPECIES data table to records in the BIORES and STATUS data tables.
**Attribute Definition Source:**
NOAA ESI Guidelines

**Detailed Description:**
**Entity Type:**
**Entity Type Label:**
SEASONAL
**Entity Type Definition:**
The data table SEASONAL contains information on the seasonal presence of each species associated with each spatial vector object. See the Browse Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.
**Entity Type Definition Source:**
NOAA ESI Guidelines

**Attribute:**
**Attribute Label:**
ELEMENT
**Attribute Definition:**
Major categories of biological data.
**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**
**Enumerated Domain:**
```
Enumerated Domain Value:
```
```
BIRD
```
**Enumerated Domain Value Definition:**
Birds
**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**
**Enumerated Domain:**
```
Enumerated Domain Value:
```
```
FISH
```

---

Delaware Bay ESI: FISH

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Enumerated_Domain_Value_Definition:
Fish
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
HABITAT
Enumerated_Domain_Value_Definition:
Habitats and plants
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
INVERT
Enumerated_Domain_Value_Definition:
Invertebrates
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
M_MAMMAL
Enumerated_Domain_Value_Definition:
Marine Mammals
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
REPTILE
Enumerated_Domain_Value_Definition:
Reptiles and Amphibians
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
T_MAMMAL
Enumerated_Domain_Value_Definition:
Terrestrial Mammals
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute:
Attribute_Label:
SPECIES_ID
Attribute_Definition:
Numeric identifier for each species that is unique within each element and refers to a nationwide ESI species list maintained at NOAA.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum:
1
Range_Domain_Maximum:
N
### SEASON_ID

**Attribute Definition:**
Numeric identifier for the unique monthly presence and life history characteristics of each species at a given location.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

<table>
<thead>
<tr>
<th>Range Domain</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>N</td>
</tr>
</tbody>
</table>

**Attribute:**

<table>
<thead>
<tr>
<th>Attribute Label</th>
<th>JAN</th>
<th>Attribute Definition:</th>
<th>January</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attribute Definition Source:</strong></td>
<td>NOAA ESI Guidelines</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Attribute Domain Values:**

<table>
<thead>
<tr>
<th>Enumerated Domain</th>
<th>Value</th>
<th>Enumerated Domain Value Definition:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>Present in January</td>
</tr>
<tr>
<td><strong>Enumerated Domain Value Definition Source:</strong></td>
<td>NOAA ESI Guidelines</td>
<td></td>
</tr>
</tbody>
</table>

**Attribute:**

<table>
<thead>
<tr>
<th>Attribute Label</th>
<th>FEB</th>
<th>Attribute Definition:</th>
<th>February</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attribute Definition Source:</strong></td>
<td>NOAA ESI Guidelines</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Attribute Domain Values:**

<table>
<thead>
<tr>
<th>Enumerated Domain</th>
<th>Value</th>
<th>Enumerated Domain Value Definition:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>Present in February</td>
</tr>
<tr>
<td><strong>Enumerated Domain Value Definition Source:</strong></td>
<td>NOAA ESI Guidelines</td>
<td></td>
</tr>
</tbody>
</table>

**Attribute:**

<table>
<thead>
<tr>
<th>Attribute Label</th>
<th>MAR</th>
<th>Attribute Definition:</th>
<th>March</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attribute Definition Source:</strong></td>
<td>NOAA ESI Guidelines</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Attribute Domain Values:**

<table>
<thead>
<tr>
<th>Enumerated Domain</th>
<th>Value</th>
<th>Enumerated Domain Value Definition:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>Present in March</td>
</tr>
<tr>
<td><strong>Enumerated Domain Value Definition Source:</strong></td>
<td>NOAA ESI Guidelines</td>
<td></td>
</tr>
</tbody>
</table>

**Attribute:**

<table>
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<tr>
<th>Attribute Label</th>
<th>APR</th>
</tr>
</thead>
</table>
Attribute Definition:
April
Attribute Definition Source:
NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
X
Enumerated Domain Value Definition:
Present in April
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute:
Attribute Label:
MAY
Attribute Definition:
May
Attribute Definition Source:
NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
X
Enumerated Domain Value Definition:
Present in May
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute:
Attribute Label:
JUN
Attribute Definition:
June
Attribute Definition Source:
NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
X
Enumerated Domain Value Definition:
Present in June
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute:
Attribute Label:
JUL
Attribute Definition:
July
Attribute Definition Source:
NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
X
Enumerated Domain Value Definition:
Present in July
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute:
Attribute Label:
AUG
Attribute: 
Attribute_Label: 
SEP 
Attribute_Definition: 
September 
Attribute_Definition_Source: 
NOAA ESI Guidelines 
Attribute_Domain_Values: 
Enumerated_Domain: 
Enumerated_Domain_Value: 
X 
Enumerated_Domain_Value_Definition: 
Present in September 
Enumerated_Domain_Value_Definition_Source: 
NOAA ESI Guidelines 

Attribute: 
Attribute_Label: 
OCT 
Attribute_Definition: 
October 
Attribute_Definition_Source: 
NOAA ESI Guidelines 
Attribute_Domain_Values: 
Enumerated_Domain: 
Enumerated_Domain_Value: 
X 
Enumerated_Domain_Value_Definition: 
Present in October 
Enumerated_Domain_Value_Definition_Source: 
NOAA ESI Guidelines 

Attribute: 
Attribute_Label: 
NOV 
Attribute_Definition: 
November 
Attribute_Definition_Source: 
NOAA ESI Guidelines 
Attribute_Domain_Values: 
Enumerated_Domain: 
Enumerated_Domain_Value: 
X 
Enumerated_Domain_Value_Definition: 
Present in November 
Enumerated_Domain_Value_Definition_Source: 
NOAA ESI Guidelines 

Attribute: 
Attribute_Label: 
DÉC
Attribute Definition:
December

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
X

Enumerated Domain Value Definition:
Present in December

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute:
Attribute Label:
EL_SPE_SEA

Attribute Definition:
Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the SEASONAL data table to records in the BIORES and BREED data tables.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
E####

Enumerated Domain Value Definition:
Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Detailed Description:
Entity Type:
Entity Type Label:
BREED

Entity Type Definition:
The data table BREED identifies the monthly presence of certain life-history stages or activities for each species at a given location.

Entity Type Definition Source:
NOAA ESI Guidelines

Attribute:
Attribute Label:
EL_SPE_SEA

Attribute Definition:
Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the BREED data table to records in the BIORES and SEASONAL data tables.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
E####

Enumerated Domain Value Definition:
Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute:
Attribute Label:
MONTH
Attribute Definition:
Two-digit calendar month. Each life history stage or activity type for a particular species can have up to 12 records to account for each month of the year.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Range Domain:
  Range Domain Minimum:
    1
  Range Domain Maximum:
    12

Attribute:
Attribute Label:
BREED1
Attribute Definition:
Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED1 = nesting; if ELEMENT is "FISH" then BREED1 = spawning; if ELEMENT is "INVERT" then BREED1 = spawning; if ELEMENT is "REPTILE" then BREED1 = nesting; if ELEMENT is "M_MAMMAL" then BREED1 = mating. This attribute is not used for HABITAT or T_MAMMAL.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value:
    Y
  Enumerated Domain Value Definition:
    Life-history stage or activity present
  Enumerated Domain Value Definition Source:
    NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value:
    N
  Enumerated Domain Value Definition:
    Life-history stage or activity not present or not reported
  Enumerated Domain Value Definition Source:
    NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value:
    -
  Enumerated Domain Value Definition:
    Breed category not used or not appropriate for record(s) in question
  Enumerated Domain Value Definition Source:
    NOAA ESI Guidelines

Attribute:
Attribute Label:
BREED2
Attribute Definition:
Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED2 = migrating; if ELEMENT is "FISH" then BREED2 = eggs; if ELEMENT is "INVERT" then BREED2 = eggs; if ELEMENT is "REPTILE" then BREED2 = hatching; if ELEMENT is "M_MAMMAL" then BREED2 = calving. This attribute is not used for HABITAT or T_MAMMAL elements.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value:
    Y
  Enumerated Domain Value Definition:
Life-history stage or activity present

*Enumerated_Domain_Value_Definition_Source:*
NOAA ESI Guidelines

**Attribute_Domain_Values:**

*Enumerated_Domain:*

*Enumerated_Domain_Value:*

N

*Enumerated_Domain_Value_Description:*
Life-history stage or activity not present or not reported

*Enumerated_Domain_Value_Definition_Source:*
NOAA ESI Guidelines

**Attribute_Domain_Values:**

*Enumerated_Domain:*

*Enumerated_Domain_Value:*

- 

*Enumerated_Domain_Value_Description:*
Breed category not used or not appropriate for record(s) in question

*Enumerated_Domain_Value_Definition_Source:*
NOAA ESI Guidelines

**Attribute:**

*Attribute_Label:* BREED3

*Attribute_Definition:* Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED3 = molting; if ELEMENT is "FISH" then BREED3 = larvae; if ELEMENT is "INVERT" then BREED3 = larvae; if ELEMENT is "REPTILE" then BREED3 = internesting; if ELEMENT is "M_MAMMAL" then BREED3 = pupping. This attribute is not used for HABITAT or T_MAMMAL elements.

*Attribute_Definition_Source:* NOAA ESI Guidelines

**Attribute_Domain_Values:**

*Enumerated_Domain:*

*Enumerated_Domain_Value:*

Y

*Enumerated_Domain_Value_Description:*
Life-history stage or activity present

*Enumerated_Domain_Value_Definition_Source:*
NOAA ESI Guidelines

**Attribute_Domain_Values:**

*Enumerated_Domain:*

*Enumerated_Domain_Value:*

N

*Enumerated_Domain_Value_Description:*
Life-history stage or activity not present or not reported

*Enumerated_Domain_Value_Definition_Source:*
NOAA ESI Guidelines

**Attribute_Domain_Values:**

*Enumerated_Domain:*

*Enumerated_Domain_Value:*

- 

*Enumerated_Domain_Value_Description:*
Breed category not used or not appropriate for record(s) in question

*Enumerated_Domain_Value_Definition_Source:*
NOAA ESI Guidelines

**Attribute:**

*Attribute_Label:* BREED4

*Attribute_Definition:* Life history stage or activity type, where: if ELEMENT is "FISH" then BREED4 = juveniles; if ELEMENT is "INVERT" then BREED4 = juveniles; if ELEMENT is "REPTILE" then BREED4 = juveniles; if ELEMENT is "M_MAMMAL" then BREED4 = molting. This attribute is not used for BIRD, HABITAT, or T_MAMMAL elements.
elements.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**

Y

**Enumerated Domain Value Definition:**
Life-history stage or activity present

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**

N

**Enumerated Domain Value Definition:**
Life-history stage or activity not present or not reported

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**

-

**Enumerated Domain Value Definition:**
Breed category not used or not appropriate for record(s) in question

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute Label:**
BREED5

**Attribute Definition:**
Life history stage or activity type, where: if ELEMENT is "FISH" then BREED5 = adults; if ELEMENT is "INVERT" then BREED5 = adults; if ELEMENT is "REPTILE" then BREED5 = adults. This attribute is not used for BIRD, M_MAMMAL, HABITAT or T_MAMMAL elements.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**

Y

**Enumerated Domain Value Definition:**
Life-history stage or activity present

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**

N

**Enumerated Domain Value Definition:**
Life-history stage or activity not present or not reported

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**

-

**Enumerated Domain Value Definition:**
Breed category not used or not appropriate for record(s) in question

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines
Detailed_Description:

Entity_Type:

Entity_Type_Label:
STATUS

Entity_Type_Definition:
The data table STATUS identifies the species that are listed as either threatened or endangered by a state, federal, or international authority. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

Entity_Type_Definition_Source:
NOAA ESI Guidelines

Attribute:

Attribute_Label:
ELEMENT

Attribute_Definition:
Major categories of biological data.

Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:
Enumerated_Domain_Value:
BIRD
Enumerated_Domain_Value_Definition:
Birds
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Enumerated_Domain:
Enumerated_Domain_Value:
FISH
Enumerated_Domain_Value_Definition:
Fish
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Enumerated_Domain:
Enumerated_Domain_Value:
HABITAT
Enumerated_Domain_Value_Definition:
Habitats and Plants
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Enumerated_Domain:
Enumerated_Domain_Value:
INVERT
Enumerated_Domain_Value_Definition:
Invertebrates
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Enumerated_Domain:
Enumerated_Domain_Value:
M_MAMMAL
Enumerated_Domain_Value_Definition:
Marine Mammals
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Enumerated_Domain:
Enumerated_Domain_Value:
REPTILE
  Enumerated_Domain_Value_Definition:
  Reptiles and Amphibians
  Enumerated_Domain_Value_Definition_Source:
  NOAA ESI Guidelines
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      T_MAMMAL
    Enumerated_Domain_Value_Definition:
      Terrestrial Mammals
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute:
  Attribute_Label:
    SPECIES_ID
  Attribute_Definition:
    Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI species list maintained at NOAA.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
Attribute_Domain_Values:
  Range_Domain:
    Range_Domain_Minimum:
      1
    Range_Domain_Maximum:
      N

Attribute:
  Attribute_Label:
    STATE
  Attribute_Definition:
    Two-letter state abbreviation.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
Attribute_Domain_Values:
  Unrepresentable_Domain:
    Acceptable values change from atlas to atlas.

Attribute:
  Attribute_Label:
    COUNTRY
  Attribute_Definition:
    Three-letter country abbreviation.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
Attribute_Domain_Values:
  Unrepresentable_Domain:
    Acceptable values change from atlas to atlas.

Attribute:
  Attribute_Label:
    S
  Attribute_Definition:
    State threatened or endangered status.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      E
    Enumerated_Domain_Value_Definition:
      Endangered on state list
Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
T

Enumerated Domain Value Definition:
Threatened on state list

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Enumerated Domain:

Enumerated Domain Value:
C

Enumerated Domain Value Definition:
Species of Special Concern

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute:

Attribute Label:
F

Attribute Definition:
Federal threatened or endangered status.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
E

Enumerated Domain Value Definition:
Endangered on federal list

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Enumerated Domain:

Enumerated Domain Value:
T

Enumerated Domain Value Definition:
Threatened on federal list

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Enumerated Domain:

Enumerated Domain Value:
C

Enumerated Domain Value Definition:
Species of Special Concern

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute:

Attribute Label:
I

Attribute Definition:
International threatened or endangered status.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
E
Enumerated Domain Value Definition:
- Endangered on international list

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:
- Enumerated Domain Value:
  T

Enumerated Domain Value Definition:
- Threatened on international list

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:
- Enumerated Domain Value:
  C

Enumerated Domain Value Definition:
- Species of Special Concern

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute:

Attribute Label:
S_DATE

Attribute Definition:
Publication date of source material used to assign state status values for each species, if used.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:
- Enumerated Domain Value:
  YYYYMM

Enumerated Domain Value Definition:
- YYYY for year and optionally MM for month

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute:

Attribute Label:
F_DATE

Attribute Definition:
Publication date of source material used to assign federal status values for each species, if used.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:
- Enumerated Domain Value:
  YYYYMM

Enumerated Domain Value Definition:
- YYYY for year and optionally MM for month

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute:

Attribute Label:
I_DATE

Attribute Definition:
Publication date of source material used to assign international status values for each species, if used.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:
- Enumerated Domain Value:
YYYYMM

**Enumerated Domain Value Definition:**
YYYY for year and optionally MM for month

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute:**
**Attribute Label:**
EL_SPE
**Attribute Definition:**
Concatenation of ELEMENT and SPECIES_ID. This item links the STATUS data table to the BIORES and SPECIES data tables.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**
**Enumerated Domain:**
**Enumerated Domain Value:**
E####

**Enumerated Domain Value Definition:**
Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1; EL_SPE = 'B00001').

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Detailed Description:**

**Entity Type:**
**Entity Type Label:** SOURCES
**Entity Type Definition:**
The data table SOURCES contains the primary sources used to create the ESI data set. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

**Entity Type Definition Source:**
NOAA ESI Guidelines

**Attribute:**
**Attribute Label:** SOURCE_ID
**Attribute Definition:**
Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; SOURCE_ID and ESI_SOURCE in the ESIL and ESIP data layers; and SOURCE_ID in the HYDRO data layer.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**
**Range Domain:**
**Range Domain Minimum:** 1
**Range Domain Maximum:** N

**Attribute:**
**Attribute Label:** ORIGINATOR
**Attribute Definition:**
Author or developer of source material or data set.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**
**Unrepresentable Domain:** Acceptable values change from atlas to atlas.

**Attribute:**
**Attribute Label:** DATE_PUB
**Attribute_Definition:**
Date of source material, publication, or date of personal communication with expert source.

**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**
YYYYMM

**Enumerated_Domain_Value_Definition:**
YYYY for year and optionally MM for month

**Enumerated_Domain_Value_Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute_Label:**
TITLE

**Attribute_Definition:**
Title of source material or data.

**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Unrepresentable_Domain:**
Acceptable values change from atlas to atlas.

**Attribute:**

**Attribute_Label:**
DATA_FORMAT

**Attribute_Definition:**
The format of the source material.

**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Unrepresentable_Domain:**
Acceptable values change from atlas to atlas.

**Attribute:**

**Attribute_Label:**
PUB_PLACE

**Attribute_Definition:**
Publication place.

**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Unrepresentable_Domain:**
Acceptable values change from atlas to atlas.

**Attribute:**

**Attribute_Label:**
PUBLISHER

**Attribute_Definition:**
Publisher.

**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Unrepresentable_Domain:**
Acceptable values change from atlas to atlas.

**Attribute:**

**Attribute_Label:**
PUBLICATION

**Attribute_Definition:**
Additional citation information.

**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**
Overview_Description:

Entity_and_Attribute_Overview:

In addition to the geographic data layers, six relational attribute or data tables (BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS) are used to store the complex biological data in the ESI data structure. The geographic data layer containing biological resource information (in this case, FISH) is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or it can be linked directly using RARNUM. The ID is a unique combination of the atlas number (for the Delaware/New Jersey/Pennsylvania atlas, the number is 212), an element/layer specific number (BIRDS are layer 1, FISH are layer 2, etc.), and a unique record number. The RARNUM represents a unique combination of species, seasonalities, concentrations, and source information. For each of these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases. BIORES and the other relational data tables are described in the Detailed_Description sections. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way these tables relate to the geographic data layers and other attribute tables in the ESI data structure. Due to the complexity of the relational database model, the data items are also post-processed into a flat file format. This table, called BIOFILE, may be used in place of the relational files to ease simple data queries. The items in the flat file are ELEMENT, SUBELEMENT, NAME, GEN_SPEC, S, F, NHP, DATE_PUB, CONC, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC, BREED1, BREED2, BREED3, BREED4, BREED5, RARNUM, G_SOURCE, S_SOURCE, and BREED. All of these items are the same as their counterparts in the individual data tables (described in the Detailed_Description sections), except the BREED1-BREED5 and BREED items. BREED is a newly generated variable used to link to the BREED_DT data table, a modified, more compact version of the relational BREED data table. BREED1-BREED5 give a text summary of when each life stage occurs within the associated map object. The life stages referred to are the same as those listed in the Detailed_Description of the BREED data table. The link from the BIOFILE may be made through the BIO_LUT, using ID to link to RARNUM, or BIOFILE may be linked directly to the RARNUM in each of the geographic layer's attribute data tables. As mentioned, BREED_DT is an auxiliary support data table to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item. A second supporting data table is SOURCES. This is the same as the source file described above, and the link from the flat file is both G_SOURCE and S_SOURCE. It should be noted that although the flat file eases data query, it is not a
normalized database structure, and actual updates performed by the states and other responsible agencies should be done using the relational data tables. The entity-relationships diagram, describing relationships between attribute tables in the ESI data structure, does NOT include the BIOFILE data table, and this data table is NOT described in a Detailed_Description section.

**Entity_and_Attribute_Detail_Citation:**
A complete description of entity types, attributes, and attribute values for ESI atlases can be found in the NOAA ESI Guidelines ([http://response.restoration.noaa.gov/esi_guidelines](http://response.restoration.noaa.gov/esi_guidelines)).

---

**Distribution Information:**
**Distributor:**

**Contact Information:**

**Contact Person Primary:**
**Contact Person:**
ESI Manager
**Contact Organization:**
NOAA, Office of Response and Restoration

**Contact Address:**
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7600 Sand Point Way N.E.
**City:**
Seattle
**State or Province:**
Washington
**Postal Code:**
98115-6349

**Contact Voice Telephone:**
(206) 526-6944
**Contact Facsimile Telephone:**
(206) 526-6329

**Contact Electronic Mail Address:**
orrr.esi@noaa.gov

**Resource Description:**
Downloadable Data

**Distribution Liability:**
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format. If problems are encountered either in downloading the ESI data or if any file appears corrupted, please contact the ESI manager.

**Custom Order Process:**
Contact NOAA if you require the data be provided to you on CD/DVD. (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export files, Shapefiles, and as a file Geodatabase (the recommended format). The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

---

**Metadata Reference Information:**
**Metadata Date:**
20140620

**Metadata Contact:**

**Contact Information:**

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**Contact Person:**
ESI Manager
Contact_Organization: NOAA, Office of Response and Restoration

Contact_Position: GIS Manager

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Address: 7600 Sand Point Way, N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349

Contact_Voice_Telephone: (206) 526-6944

Contact_Facsimile_Telephone: (206) 526-6329

Contact_Electronic_Mail_Address: orr.esi@noaa.gov

Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: INVERT (Invertebrate Polygons)

Metadata:

- Identification Information
- Data Quality Information
- Spatial Data Organization Information
- Spatial Reference Information
- Entity and Attribute Information
- Distribution Information
- Metadata Reference Information

Identification Information:
Citation Information:
  Originator:
  Originator:
  Department of Homeland Security, United States Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.
Publication Date:
  201403
Title:
  Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: INVERT (Invertebrate Polygons)
Edition:
  Second
Geospatial Data Presentation Form:
  vector digital data
Series Information:
  Series Name:
    None
  Issue Identification:
    Delaware/New Jersey/Pennsylvania
Publication Information:
  Publication Place:
    Seattle, Washington
  Publisher:
    NOAA's Ocean Service, Office of Response and Restoration (OR&R), Emergency Response Division (ERD).
Other Citation Details:
Online Linkage:
  http://response.restoration.noaa.gov/esi
Online Linkage:
  http://response.restoration.noaa.gov/esi_download
Online Linkage:
  http://response.restoration.noaa.gov/esi_guidelines

Description:
Abstract:
This data set contains sensitive biological resource data for terrestrial, marine, and estuarine invertebrate species in Delaware/New Jersey/Pennsylvania. Vector polygons in this data set represent invertebrate distribution and concentration areas. Species specific abundance, seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer. This data set comprises a portion of the ESI data for Delaware/New Jersey/Pennsylvania. 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.

**Purpose:**
The ESI data were collected, mapped, and digitized to provide environmental data for oil spill planning and response. The Clean Water Act with amendments by the Oil Pollution Act of 1990 requires response plans for immediate and effective protection of sensitive resources.

**Time_Period_of_Content:**
**Time_Period_Information:**
**Range_of_Dates/Times:**
**Beginning_Date:** 1985
**Ending_Date:** 2014

**Currentness_Reference:**
The data were compiled during 2013-2014. The currentness dates for the data range from 1985 to 2014 and are documented in the Lineage section.

**Status:**
**Progress:** Complete
**Maintenance_and_Update_Frequency:** None Scheduled

**Spatial_Domain:**
**Bounding_Coordinates:**
**West_Bounding_Coordinate:** -75.75000
**East_Bounding_Coordinate:** -74.03800
**North_Bounding_Coordinate:** 40.23700
**South_Bounding_Coordinate:** 38.37500

**Keywords:**
**Theme:**
**Theme_Keyword_Thesaurus:**
**ISO 19115 Topic Category**
**Theme_Keyword:** biota
**Theme_Keyword:** environment

**Theme:**
**Theme_Keyword_Thesaurus:** None
**Theme_Keyword:** Environmental Monitoring
**Theme_Keyword:** ESI
**Theme_Keyword:** Sensitivity maps
**Theme_Keyword:** Coastal resources
**Theme_Keyword:** Oil spill planning
**Theme_Keyword:** Coastal Zone Management
**Theme_Keyword:**
Wildlife

Theme_Keyword:
Invertebrate

Theme:

Theme_Keyword_Thesaurus:
NOS Data Explorer Topic Category

Theme_Keyword:
Environmental Monitoring

Place:

Place_Keyword_Thesaurus:
None

Place_Keyword:
Delaware/New Jersey/Pennsylvania

Access_Constraints:
None

Use_Constraints:
DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Management boundaries are not to be considered legal boundaries. Edges may have been altered for cartographic processes. Besides the above warnings, there are no use constraints on these data. Note that the ESI database should not be used to the exclusion of other pertinent data or information held by state or federal agencies or other organizations. Likewise, information contained in the database cannot be used in place of consultations with environmental, natural resource, and cultural resource agencies, or in place of field surveys. Recognize that the information contained in the ESI database represents known concentration areas or occurrences of natural, cultural, and human-use resources, but does not necessarily represent the full distribution or range of each species or resource. This is particularly important to recognize when considering potential impacts to protected resources, such as endangered species, wetlands, etc. Acknowledgment of the originators, publishers, contributors, and sources listed would be appreciated in products derived from these data.

Browse_Graphic:

Browse_Graphic_File_Name:

Browse_Graphic_File_Description:
Depicts the relationships between spatial data layers and attribute data tables for the Delaware/New Jersey/Pennsylvania ESI data.

Browse_Graphic_File_Type:
JPEG

Browse_Graphic:

Browse_Graphic_File_Name:

Browse_Graphic_File_Description:
Depicts the relationships between spatial data layers and desktop data tables for the Delaware/New Jersey/Pennsylvania ESI data.

Browse_Graphic_File_Type:
JPEG

Data_Set_Credit:
This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Office of Response and Restoration (OR&R), Emergency Response Division (ERD), Seattle, Washington; and The Department of Homeland Security, United States Coast Guard Office of Incident Management and Preparedness, Washington, D.C.

Native_Data_Set_Environment:
The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(R) (version 10.2) and SQL SERVER(R) (version 2005). The hardware configuration is PCs with Windows Operating System 7. The Spatial_Data_Organization Information section refers only to the source files in the ARC export format. The following files are included in the data set: benthic.e00, birds.e00, esil.e00, esp.e00, fish.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, soccon.e00, and t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut.e00, biofile.e00, biore.e00, breed.e00, breed_dt.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, sources.e00, species.e00, and status.e00.

Back To Index

Data_Quality_Information:
**Attribute_Accuracy:**

**Attribute_Accuracy_Report:**

A multi-stage error checking process is used to verify both attribute accuracy and logical consistency throughout data production. The process includes a standardized data entry methodology, hardcopy data review by in-house and external resource experts, a final Quality Assurance/Quality Control (QA/QC) process, and multiple automated logical consistency checks. Quantitative data (such as densities, counts, abundances, or concentrations) provided by resource experts for inclusion in the data set may vary widely in attribute accuracy, depending upon the methodology used to collect and compile such data. For a more detailed evaluation of source data attribute accuracy, contact the sources listed in the Lineage section.

**Logical_Consistency_Report:**

A multi-stage error checking process, described in the above Attribute_Accuracy_Report, is used to verify both attribute accuracy and logical consistency throughout data production. This process includes multiple automated logical consistency checks that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and SQL SERVER(R) to ARC/INFO(R) consistencies. After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks. In the process of checking for topological and database consistencies, new ID's and RARNUM's or HUNUM's are also generated. The new ID's are a combination of atlas number, element number, and record number. In addition, the value used to represent the element is modified to reflect the type of feature being mapped. In the case of an element that is normally represented by a point or polygon, a value of 20 is added to the standard element value for mapping of linear features. In the case where an element usually mapped as a polygon is represented by a point, a value of 30 is added to the regular element value. The RARNUM's are also modified to include the atlas number, so multiple atlases can be combined and RARNUM's remain unique. RARNUM's are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUM's are also modified to include the atlas number.

**Completeness_Report:**

These data represent a synthesis of expert knowledge, available hardcopy documents, survey data, maps, and digital data on invertebrate distribution and concentration areas. These data do not necessarily represent all invertebrate occurrences in Delaware/New Jersey/Pennsylvania. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 19, Blue mussel, Mytilus edulis; 25, Softshell clam, Mya arenaria; 42, Northern quahog, Mercenaria mercenaria; 43, Eastern oyster, Crassostrea virginica; 44, Horseshoe crab, Limulus polyphemus; 45, American lobster, Homarus americanus; 46, Channeled whelk,Busycon canaliculatum; 47, Knobbed whelk, Busycon carica; 49, Blue crab, Callinectes sapidus; 73, Longfin squid, Loligo pealeii; 286, Ocean quahog, Arctica islandica; 287, Atlantic surfclam, Spisula solidissima; 367, Eastern pondmussel, Ligumia nasuta; 377, Tidewater mucket, Lepodea ochracea; 378, Rare insect, n/a; 380, Rare freshwater mussel, n/a; 544, Yellow lampmussel, Lampsilis cariosa; 554, Eastern elliptio, Elliptio complanata; 557, Eastern lampmussel, Lampsilis radiata; 632, Eastern floater, Pyganodon cataracta; 634, Triangle floater, Alasmidonta undulata; 638, Endangered freshwater mussel, n/a; 639, Endangered insect 1, n/a; 640, Endangered insect 2, n/a; 641, Endangered insect 3, n/a.

**Positional_Accuracy:**

**Horizontal_Positional_Accuracy:**

**Horizontal_Positional_Accuracy_Report:**

Spatial components for the biological data layers can come from expert interviews, hardcopy, or digital sources. Some of the spatial components of the biological data layers may have been developed using regional experts who estimate concentration areas. It is difficult to estimate the positional accuracy of such data, except to state that they are compiled on hardcopy base maps with a scale of 1:45,000. Some of the spatial components of the biological data sets are developed from pre-existing digital or hardcopy sources and reflect the positional accuracy of these original data. Note that biological resource data by their very nature are considered “fuzzy”, and this should be understood when considering the positional accuracy of vector digital objects representing these resources. See the Lineage and Process_Description sections for more information on the original source data and how these data were integrated or manipulated to create the final data set.

**Lineage:**

**Source_Information:**

**Source_Citation:**

**Citation_Information:**

**Originator:**

CENTER FOR THE INLAND BAYS

**Publication_Date:**

2013

**Title:**

HORSESHOE CRAB SPAWNING RECORDS 2008-2011

**Geospatial_Data_Presentation_Form:**

document
Other_Citation_Details:
UNPUBLISHED
Type_of_Source_Media:
online
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date:
2008
Ending_Date:
2011
Source_Currentness_Reference:
DATE OF SURVEY
Source_Citation_Abbreviation:
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Source_Contribution:
INVERT INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator:
DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL (DNREC)
Publication_Date:
2012
Title:
DELAWARE BAY 16 FT TRAWL INDEPENDENT SAMPLING DATA
Geospatial_Data_Presentation_Form:
spreadsheet
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Type_of_Source_Media:
EMAIL
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date:
2003
Ending_Date:
2012
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DATE OF SURVEY
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Source_Information:
Source_Citation:
Citation_Information:
Originator:
DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL (DNREC)
Publication_Date:
2012
Title:
ELEMENT OCCURRENCE RECORDS
Geospatial_Data_Presentation_Form:
vector digital data
Other_Citation_Details:
UNPUBLISHED
Source Information:

Source_Citation:

Citation_Information:

Originator:
DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL (DNREC) - MICHAEL GRECO

Publication_Date:
2008

Title:
DNREC OYSTER SPAT SURVEY POINTS

Geospatial_Data_Presentation_Form:
vector digital data

Other_Citation_Details:
UNPUBLISHED

Type_of_Source_Media:
EMAIL

Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:
Beginning_Date:
2005
Ending_Date:
2008

Source_Currentness_Reference:
DATE OF SURVEY

Source_Citation_Abbreviation:
Src_5

Source_Contribution:
INVERT INFORMATION

Source Information:

Source_Citation:

Citation_Information:

Originator:
DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL (DNREC) - MICHAEL GRECO

Publication_Date:
2013

Title:
DELAWARE NATURAL OYSTER BEDS

Geospatial_Data_Presentation_Form:
vector digital data

Other_Citation_Details:
UNPUBLISHED

Type_of_Source_Media:
EMAIL

Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date:
2013
Ending_Date:
2013
Source_Currentness_Reference:
DATE OF COMMUNICATION
Source_Citation_Abbreviation:
Src_6
Source_Contribution:
INVERT INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator:
DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL (DNREC) - FISH AND SHELLFISH GROUP
Publication_Date:
2013
Title:
DELAWARE BAY FISH, SHELLFISH, MARINE MAMMAL, REPTILE REVIEW MEETING
Geospatial_Data_Presentation_Form:
EXPERT KNOWLEDGE
Other_Citation_Details:
UNPUBLISHED
Type_of_Source_Media:
PERSONAL COMMUNICATION
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date:
2013
Ending_Date:
2013
Source_Currentness_Reference:
DATE OF COMMUNICATION
Source_Citation_Abbreviation:
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Source_Contribution:
INVERT INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator:
DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL (DNREC) - KALASZ, K., A. GONZON, M. DIBONA, M. BAILEY
Publication_Date:
2014
Title:
DELAWARE BIRDS SEASONALITY INFORMATION
Geospatial_Data_Presentation_Form:
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Other_Citation_Details:
UNPUBLISHED
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Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date:
2014
Ending_Date:
2014

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Src_8

Source_Contribution:
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Source_Citation:
Citation_Information:
Originator:
DOVE, L.E., AND R.M. NYMAN, EDS.
Publication_Date:
1995
Title:
LIVING RESOURCES OF THE DELAWARE ESTUARY

Geospatial_Data_Presentation_Form:
HARDCOPY TEXT

Publication_Information:
Publication_Place:
THE DELAWARE ESTUARY PROGRAM
Publisher:
THE DELAWARE ESTUARY PROGRAM

Type_of_Source_Media:
paper

Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date:
1995
Ending_Date:
1995

Source_Currentness_Reference:
DATE OF PUBLICATION

Source_Citation_Abbreviation:
Src_9

Source_Contribution:
INVERT INFORMATION

Source_Citation:
Citation_Information:
Originator:
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) NATIONAL MARINE FISHERIES SERVICE (NMFS)
Publication_Date:
1999
Title:
ESSENTIAL FISH HABITAT SOURCE DOCUMENT: ATLANTIC SURFCLAM, SPISULA SOLIDISSIMA, LIFE HISTORY AND HABITAT CHARACTERISTICS

Geospatial_Data_Presentation_Form:
document

Publication_Information:
Publication_Place:
WOODS HOLE, MA
Publisher:
NORTHEAST FISHERIES SCIENCE CENTER

Other_Citation_Details:
NOAA TECHNICAL MEMORANDUM NMFS-NE-142

Type of Source Media:
online

Source Time Period of Content:
Time Period Information:
Range of Dates/Times:
Beginning Date: 1999
Ending Date: 1999

Source Currentness Reference:
DATE OF PUBLICATION

Source Citation Abbreviation:
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Source Contribution:
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Source Information:
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Citation Information:
Originator:
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) NATIONAL MARINE FISHERIES SERVICE (NMFS)
Publication Date: 1999
Title:
ESSENTIAL FISH HABITAT SOURCE DOCUMENT: OCEAN QUAHOG, ARCTICA ISLANDICA, LIFE HISTORY AND HABITAT CHARACTERISTICS

Geospatial Data Presentation Form:
document

Publication Information:
Publication Place:
WOODS HOLE, MA
Publisher:
NORTHEAST FISHERIES SCIENCE CENTER

Other Citation Details:
NOAA TECHNICAL MEMORANDUM NMFS-NE-148

Type of Source Media:
online

Source Time Period of Content:
Time Period Information:
Range of Dates/Times:
Beginning Date: 1999
Ending Date: 1999

Source Currentness Reference:
DATE OF PUBLICATION

Source Citation Abbreviation:
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Source Contribution:
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Source Information:
Source Citation:
Citation Information:
Originator:
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF FISH AND WILDLIFE (NJDEP F&W)
Publication Date: 2012
Title:
DELAWARE BAY 16 FT TRAWL INDEPENDENT SAMPLING DATA

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Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date:
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Ending_Date:
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Source_Currentness_Reference:
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Source_Citation_Abbreviation:
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Source_Contribution:
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Source_Citation:

Citation_Information:

Originator:
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF FISH AND WILDLIFE (NJDEP F&W)

Publication_Date:
2012

Title:
NEW JERSEY DELAWARE RIVER SEINE DATA 2002-2012

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CD-ROM

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Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date:
2002

Ending_Date:
2012

Source_Currentness_Reference:
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Source_Citation_Abbreviation:
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Source_Information:

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Citation_Information:

Originator:
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF FISH AND WILDLIFE (NJDEP F&W) BUREAU OF MARINE FISHERIES

Publication_Date:
2013

Title:
NEW JERSEY OCEAN TRAWL INDEPENDENT SAMPLING DATA

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Range_of_Dates/Times:

Beginning_Date:
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Ending_Date:
2013

Source_Currentness_Reference:
DATE OF SURVEY

Source_Citation_Abbreviation:
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Source_Contribution:

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Source_Information:

Source_Citation:

Citation_Information:

Originator:
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF FISH AND WILDLIFE (NJDEP F&W) BUREAU OF MARINE FISHERIES AND SHELLFISHERIES

Publication_Date:
2013

Title:
NEW JERSEY BUREAU OF MARINE FISHERIES AND SHELLFISHERIES REVIEW MEETING

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Other_Citation_Details:
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Source_Time_Period_of_Content:

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Range_of_Dates/Times:

Beginning_Date:
2013

Ending_Date:
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Source_Currentness_Reference:
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Source_Citation_Abbreviation:
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Source_Contribution:

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Source_Information:

Source_Citation:

Citation_Information:

Originator:
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF FISH AND WILDLIFE (NJDEP F&W) BUREAU OF SHELLFISHERIES

Publication_Date:
2009

Title:
INVENTORY OF NEW JERSEY'S SURF CLAM (SPISULA SOLIDISSIMA) RESOURCE

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      Ending_Date: 2009
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      NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF FISH
      AND WILDLIFE (NJDEP F&W) BUREAU OF SHELLFISHERIES - MARK CELESTINO
      Publication_Date: 1988
      Title:
      NORTHERN QUAHOG DISTRIBUTIONS, GREAT BAY, NJ
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      NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF FISH
      AND WILDLIFE (NJDEP F&W) BUREAU OF SHELLFISHERIES - MARK CELESTINO
      Publication_Date: 2003
      Title:
      INVESTIGATION OF POTENTIAL AQUACULTURE EXPANSION AREAS: A REPORT TO
      THE AQUACULTURE ADVISORY COUNCIL
    Geospatial_Data_Presentation_Form:
      document
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NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF FISH AND WILDLIFE (NJDEP F&W) BUREAU OF SHELLFISHERIES - MARK CELESTINO
Publication_Date:
2011
Title:
SHELLFISH STOCK ASSESSMENT OF LITTLE EGG HARBOR BAY (2011)
Geospatial_Data_Presentation_Form:
document
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Citation_Information:
Originator:
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF FISH AND WILDLIFE (NJDEP F&W) BUREAU OF SHELLFISHERIES AND RUTGERS UNIVERSITY
Publication_Date:
2013
Title:
NJ NATURAL STATE OYSTER BEDS, HIGH AND MEDIUM QUALITY
Geospatial_Data_Presentation_Form:
vector digital data
Other_Citation_Details:
UNPUBLISHED
Invert Information

Originator:
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF FISH AND WILDLIFE (NJDEP F&W) ENDANGERED NONGAME SPECIES PROGRAM (ENSP) AND NATURESERVE
Publication Date:
2014
Title:
RPI NJ NATURESERVETE SF POLYS 201401
Geospatial Data Presentation Form:
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    Ending_Date: 2012
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        NEW JERSEY BUREAU OF SHELLFISHERIES - RUSSEL BABB
      Publication_Date: 2013
      Title: NJ STATE OYSTER BED MANAGEMENT ZONES
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    Citation_Information:
      Originator:
      Publication_Date: 1994
      Title: DISTRIBUTION AND ABUNDANCE OF FISHES AND INVERTEBRATES IN MID-ATLANTIC ESTUARIES. ELMR REP. NO. 12
    Geospatial_Data_Presentation_Form:
      document
    Publication_Information:
      Publication Place:
        SILVER SPRING, MD
      Publisher:
        NOAA/NOS STRATEGIC ENVIRONMENTAL ASSESSMENTS DIVISION
  Type_of_Source_Media:
    paper
The mapping extent was dependent upon information availability and location of mapped coastal habitats and shorelines. Invertebrates depicted in this atlas include select terrestrial, marine, and estuarine species of commercial, ecological, and/or conservation interest. Horseshoe crab, blue crab, eastern oyster, knobbed and channeled whelk, Atlantic surfclam, and northern quahog support highly valuable commercial shellfisheries in the Delaware Bay region. Horseshoe crab spawning beaches were mapped using data from the 2013 report “Horseshoe crab spawning in Delaware Bay: 1999-2012” to the Atlantic States Marine Fisheries Commission’s Horseshoe Crab Technical Committee. In Indian River Bay and Rehoboth Bay, spawning beaches were mapped using data from the Center for Inland Bays. Horseshoe crab distributions within Delaware Bay were mapped based upon catches in fishery independent trawl sampling data from Delaware Department of Natural Resources and Environmental Control (DNREC) and New Jersey Department of Environmental Protection Bureau of Shellfisheries (NJDEP BS). Distributions in the Atlantic Ocean were based mainly on published literature and expert knowledge. Data on eastern oyster distributions was provided by DNREC and NJDEP BS/Rutgers University. DNREC provided polygonal and point spatial data on oyster reef locations on the western side of Delaware Bay and its tributaries and NJDEP BS and Rutgers provided polygonal data for the larger oyster reef complexes on the New Jersey side of Delaware Bay. The timing of life history stages and seasonalities for all eastern oyster records were based on Estuarine Living Marine Resources (ELMR) data and expert review. Rare and endangered species of insects and other invertebrates from Delaware were mapped in part by using element occurrence data provided by DNREC. Species names were obscured to protect sensitive resources. Polygons in element occurrence records with a diameter greater than 100 meters (m) were mapped as is, and all other polygons were mapped after applying a polygonal buffer and a randomized geographic shift. Blue crab distributions were mapped in Delaware Bay based on expert knowledge from DNREC staff, and data from the fishery independent sampling surveys conducted by DNREC and NJDEP BS. Seasonality and life history stages were drafted from published literature and refined during reviews with DNREC staff. In the Inland Bays of Delaware and New Jersey, blue crab distributions, concentrations, and seasonalities were based upon mid-Atlantic ELMR data. Freshwater mussels were mapped in the Delaware River and small water bodies in Delaware and New Jersey based on data provided by DNREC, NJDEP Endangered and Nongame Species Program (ENSP), and Partnership for the Delaware Estuary (PDE). In the case of DNREC and PDE data, species names were masked to protect rare mussels. DNREC element occurrence polygons were buffered and randomly shifted when they were less than 100 m in diameter. Northern quahog was mapped in New Jersey based upon NJDEP BS hard copy documents. Additional records for northern quahog were mapped in New Jersey and Delaware from the mid-Atlantic ELMR report, in which data on occurrence and abundance of a species is generalized to much larger areas. Data on Atlantic surfclam distributions in NJ coastal waters was provided by NJDEP BS as a report on stock inventories. Report data was used to create three geographic regions with separate concentrations along the NJ coast. Mid-Atlantic ELMR data was used to fill in information about species or regions that are not directly sampled by DNREC or NJDEP BS staff. Presence/absence, concentrations, and life history stages were all incorporated as is for select geographies. These geographies include Barnegat Bay, inland bays of NJ, Delaware Bay, and the inland bays of DE. Species mapped from mid-Atlantic ELMR data include American lobster, blue crab, blue mussel, northern quahog, and softshell clam. The above digital and/or hardcopy sources were compiled by the project biologist to create the INVERT data layer. Depending on the type of source data, three general approaches are used for compiling the data layer: 1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:45,000 topographic quadrangles and digitized; 2) hardcopy maps are digitized at their source scale; 3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer. The ESI, biology, and human-use data are compiled into the standard ESI digital data format. A second set of interviews with participating resource experts are conducted to review the compiled data. If necessary, edits to the INVERT data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.
Contact Organization Primary:
  Contact Organization:
    NOAA, Office of Response and Restoration
  Contact Person:
    ESI Manager
Contact Address:
  Address Type:
    Physical address
  Address:
    7600 Sand Point Way, N.E.
  City:
    Seattle
  State or Province:
    Washington
  Postal Code:
    98115-6349
Contact Voice Telephone:
  (206) 526-6944
Contact Facsimile Telephone:
  (206) 526-6329
Contact Electronic Mail Address:
  orr.esi@noaa.gov

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:
        1364
    SDTS Terms Description:
      SDTS Point and Vector Object Type:
        Area point
      Point and Vector Object Count:
        1363
    SDTS Terms Description:
      SDTS Point and Vector Object Type:
        Complete chain
      Point and Vector Object Count:
        2757
    SDTS Terms Description:
      SDTS Point and Vector Object Type:
        Link
      Point and Vector Object Count:
        471428
    SDTS Terms Description:
      SDTS Point and Vector Object Type:
        Node, planar graph
      Point and Vector Object Count:
        2389
Geographic:
Latitude_Resolution: 0.0000001
Longitude_Resolution: 0.0000001
Geographic_Coordinate_Units: Decimal degrees

Geodetic_Model:
Horizontal_Datum_Name: North American Datum of 1983
Ellipsoid_Name: Geodetic Reference System 80
Semi-major_Axis: 6378137.000000
Denominator_of_Flattening_Ratio: 298.257222

Entity_and_Attribute_Information:
Detailed_Description:
Entity_Type:
Entity_Type_Label: INVERT.PAT
Entity_Type_Definition: The INVERT.PAT table contains attribute information for the vector polygons in this data set representing invertebrate distribution and concentration areas. Note that all attribute information is stored in a series of relational files, described below and in the Overview_Description section. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the relationships between attribute tables in the ESI data structure.
Entity_Type_Definition_Source: NOAA ESI Guidelines

Attribute:
Attribute_Label: ID
Attribute_Definition: An identifier that links vector objects in the biology data layers to records in the BIO_LUT data table. ID is a concatenation of atlas number (212), element number (7), and record number. ID values of 9999 are holes in polygons and do not contain information.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum: 2120700020
Range_Domain_Maximum: 2120701340

Attribute:
Attribute_Label: RARNUM
Attribute_Definition: An identifier that links directly to the BIORES table or the flat format BIOFILE table. RARNUM values of 0 are holes in the polygons and do not contain information.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum: 212000003
**Range Domain Maximum:**
212001252

**Detailed Description:**

**Entity Type:**

**Entity Type Label:** BIO_LUT

**Entity Type Definition:**
The data table BIO_LUT is a lookup table that contains items necessary for linking vector objects in the biological data layers with the BIORES data table. Note that all attribute information is stored in a series of relational files, described below and in the Overview_Description section. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

**Entity Type Definition Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute Label:** RARNUM

**Attribute Definition:**
An identifier that links records in the BIO_LUT data table to records in the BIORES data table or the flat format BIOFILE data table. RARNUM values of 0 are holes in polygons and do not contain information.

**Attribute Definition Source:**
NOAA

**Attribute Domain Values:**

**Range Domain:**

**Range Domain Minimum:**
212000001

**Range Domain Maximum:**
212001295

**Attribute:**

**Attribute Label:** ID

**Attribute Definition:**
An identifier that links vector objects in the biology data layers to records in the BIO_LUT data table. ID is a concatenation of atlas number (212), element number (7), and record number. ID values of 9999 are holes in polygons and do not contain information.

**Attribute Definition Source:**
NOAA

**Attribute Domain Values:**

**Range Domain:**

**Range Domain Minimum:**
2120100002

**Range Domain Maximum:**
2120900295

**Detailed Description:**

**Entity Type:**

**Entity Type Label:** BIORES

**Entity Type Definition:**
The data table BIORES contains both biological attribute data and items necessary for linking vector objects in the biological data layers via the BIO_LUT data table to other associated data tables. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

**Entity Type Definition Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute Label:** RARNUM

**Attribute Definition:**
An identifier that links records in the BIORES data table to records in the BIO_LUT data table or the flat format BIOFILE data table.
**Attribute Definition Source:**
NOAA

**Attribute Domain Values:**

**Range Domain:**
- **Range Domain Minimum:** 212000001
- **Range Domain Maximum:** 212001295

**Attribute:**

**Attribute Label:** SPECIES_ID

**Attribute Definition:**
Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI species list maintained at NOAA.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Range Domain:**
- **Range Domain Minimum:** 1
- **Range Domain Maximum:** N

**Attribute:**

**Attribute Label:** CONC

**Attribute Definition:**
The field CONC refers to "concentration," abundance, or density values, and may contain counts of a species at a particular location. Calculations of horseshoe crab females per square meter (m²) were used to assign concentrations of "LOW", "MED", and "HIGH" for spawning beaches in Delaware Bay, and edited based on expert review. Concentrations of horseshoe crabs in Delaware Bay proper were designated as "HIGH" after review by DNREC staff. Blue crab concentrations were assigned based on recommendations by DNREC staff in the Delaware Bay and River. Concentrations of surfclams were designated as "COMMON", "UNCOMMON", and "RARE" based on the average CPUE from inventory surveys, but current stocks remain far below historic levels. Concentrations for eastern oyster in NJ waters were adapted as "HIGH REEF" and "MED REEF", based on qualitative data. Other descriptive terms such as "ABUNDANT", "COMMON", "HIGHLY-ABUNDANT", "PRESENT", "RARE" or "UNCOMMON" were used. If no concentration information was available from any source, the field was populated with "-".

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Unrepresentable Domain:** Acceptable values change from atlas to atlas.

**Attribute:**

**Attribute Label:** SEASON_ID

**Attribute Definition:**
Numeric identifier for the unique monthly presence and life history characteristics of each species at a given location.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Range Domain:**
- **Range Domain Minimum:** 1
- **Range Domain Maximum:** N
Geographic source identifier that links records in the BIORES data table to records in the SOURCES data table.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**
- **Range Domain**
  - **Range Domain Minimum:** 1
  - **Range Domain Maximum:** N

**Attribute:**

**Attribute Label:** S_SOURCE

**Attribute Definition:**
Seasonality source identifier that links records in the BIORES data table to records in the SOURCES data table.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**
- **Range Domain**
  - **Range Domain Minimum:** 1
  - **Range Domain Maximum:** N

**Attribute:**

**Attribute Label:** ELEMENT

**Attribute Definition:**
Major categories of biological data.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**
- **Enumerated Domain**
  - **Enumerated Domain Value:** BIRD
    - **Enumerated Domain Value Definition:** Birds
    - **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

**Attribute Domain Values:**
- **Enumerated Domain**
  - **Enumerated Domain Value:** FISH
    - **Enumerated Domain Value Definition:** Fish
    - **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

**Attribute Domain Values:**
- **Enumerated Domain**
  - **Enumerated Domain Value:** HABITAT
    - **Enumerated Domain Value Definition:** Habitats and plants
    - **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

**Attribute Domain Values:**
- **Enumerated Domain**
  - **Enumerated Domain Value:** INVERT
    - **Enumerated Domain Value Definition:** Invertebrates
    - **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
M_MAMMAL
Enumerated_Domain_Value_Definition:
Marine mammals
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
REPTILE
Enumerated_Domain_Value_Definition:
Reptiles and Amphibians
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
T_MAMMAL
Enumerated_Domain_Value_Definition:
Terrestrial mammals
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute:
Attribute_Label:
EL_SPE
Attribute_Definition:
Concatenation of ELEMENT and SPECIES_ID. This item links records in the BIORES data table to records in the SPECIES and STATUS data tables.
Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
E#####
Enumerated_Domain_Value_Definition:
Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1; EL_SPE = 'B00001').
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute:
Attribute_Label:
EL_SPE_SEA
Attribute_Definition:
Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the BIORES data table to records in the SEASONAL and BREED data tables.
Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
E#######
Enumerated_Domain_Value_Definition:
Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines
**Detailed_Description:**

**Entity_Type:**

**Entity_Type_Label:** SPECIES

**Entity_Type_Definition:** The data table SPECIES identifies all species in the ESI data set. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure. Refer to the Completeness_Report for a list of layer-specific species.

**Entity_Type_Definition_Source:** NOAA ESI Guidelines

**Attribute:**

**Attribute_Label:** SPECIES_ID

**Attribute_Definition:** Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI species list maintained at NOAA.

**Attribute_Definition_Source:** NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Range_Domain:**

- **Range_Domain_Minimum:** 1
- **Range_Domain_Maximum:** N

**Attribute:**

**Attribute_Label:** NAME

**Attribute_Definition:** Species common name for the entire ESI data set.

**Attribute_Definition_Source:** NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Unrepresentable_Domain:** Acceptable values change from atlas to atlas.

**Attribute:**

**Attribute_Label:** GEN_SPEC

**Attribute_Definition:** Species scientific name for the entire ESI data set.

**Attribute_Definition_Source:** NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Unrepresentable_Domain:** Acceptable values change from atlas to atlas.

**Attribute:**

**Attribute_Label:** ELEMENT

**Attribute_Definition:** Major categories of biological data.

**Attribute_Definition_Source:** NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain_Value:** BIRD

**Enumerated_Domain_Value_Definition:** Birds

**Enumerated_Domain_Value_Definition_Source:** NOAA ESI Guidelines

**Attribute_Domain_Values:**
Enumerated Domain:

Enumerated Domain Value: FISH

Enumerated Domain Value Definition: Fish

Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: HABITAT

Enumerated Domain Value Definition: Habitats and plants

Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: INVERT

Enumerated Domain Value Definition: Invertebrates

Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: M_MAMMAL

Enumerated Domain Value Definition: Marine Mammals

Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: REPTILE

Enumerated Domain Value Definition: Reptiles and Amphibians

Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: T_MAMMAL

Enumerated Domain Value Definition: Terrestrial Mammals

Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute:

Attribute Label: SUBELEMENT

Attribute Definition: Element subgroup delineating a logical grouping of species.

Attribute Definition Source: NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: alcid

Enumerated Domain Value Definition: Alcid
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: amphibian
Enumerated Domain Value Definition: Amphibian
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: bivalve
Enumerated Domain Value Definition: Bivalve
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: cephalopod
Enumerated Domain Value Definition: Cephalopod
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: crab
Enumerated Domain Value Definition: Crab
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: diadromous
Enumerated Domain Value Definition: Diadromous fish
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: diving
Enumerated Domain Value Definition: Diving bird
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: dolphin
Enumerated Domain Value Definition: Dolphin
Enumerated Domain Value Definition Source: NOAA ESI Guidelines
Enumerated_Domain_Value:
e_nursery

Enumerated_Domain_Value_Definition:
Estuarine nursery fish

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
fish

Enumerated_Domain_Value_Definition:
Fish

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
freshwater

Enumerated_Domain_Value_Definition:
Freshwater fish

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
gastropod

Enumerated_Domain_Value_Definition:
Gastropod

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
gull_tern

Enumerated_Domain_Value_Definition:
Gull or tern

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
insect

Enumerated_Domain_Value_Definition:
Insect

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
invert

Enumerated_Domain_Value_Definition:
Invertebrate

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
lobster

Enumerated_Domain_Value_Definition:
Lobster
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: m_benthic
    Enumerated_Domain_Value_Definition: Marine benthic fish
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: m_pelagic
    Enumerated_Domain_Value_Definition: Marine pelagic fish
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: passerine
    Enumerated_Domain_Value_Definition: Passerine bird
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: pelagic
    Enumerated_Domain_Value_Definition: Pelagic bird
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: pinniped
    Enumerated_Domain_Value_Definition: Pinniped
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: plant
    Enumerated_Domain_Value_Definition: Plant
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: raptor
    Enumerated_Domain_Value_Definition: Raptor
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
Enumerated_Domain_Value:
  sav
Enumerated_Domain_Value_Definition:
  Submerged aquatic vegetation
Enumerated_Domain_Value_Definition_Source:
  NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      shorebird
    Enumerated_Domain_Value_Definition:
      Shorebird
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      sm_mammal
    Enumerated_Domain_Value_Definition:
      Small mammal
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      snake
    Enumerated_Domain_Value_Definition:
      Snake
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      turtle
    Enumerated_Domain_Value_Definition:
      Turtle
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      wading
    Enumerated_Domain_Value_Definition:
      Wading bird
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      waterfowl
    Enumerated_Domain_Value_Definition:
      Waterfowl
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      wetland
    Enumerated_Domain_Value_Definition:
      Wetland


**Attribute:**

*Attribute_Label:* NHP

*Attribute_Definition:* Natural Heritage Program global ranking.

*Attribute_Definition_Source:* Network of Natural Heritage Program

*Attribute_Domain_Values:*

*Codeset_Domain:*

*Codeset_Name:* NHP Global Conservation Status Rank

*Codeset_Source:* Natural Heritage Program

**Attribute:**

*Attribute_Label:* DATE_PUB

*Attribute_Definition:* Date of NHP listing.

*Attribute_Definition_Source:* NOAA ESI Guidelines

*Attribute_Domain_Values:*

*Enumerated_Domain:*

*Enumerated_Domain_Value:*

YYYYMM

*Enumerated_Domain_Value_Definition:*

YYYY for year and optionally MM for month

*Enumerated_Domain_Value_Definition_Source:*

NOAA ESI Guidelines

**Attribute:**

*Attribute_Label:* EL_SPE

*Attribute_Definition:* Concatenation of ELEMENT and SPECIES_ID. This item links records in the SPECIES data table to records in the BIORES and STATUS data tables.

*Attribute_Definition_Source:* NOAA ESI Guidelines

*Attribute_Domain_Values:*

*Enumerated_Domain:*

*Enumerated_Domain_Value:*

E####

*Enumerated_Domain_Value_Definition:*

Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g.
Detailed_Description:

Entity_Type:

Entity_Type_Label:
SEASONAL

Entity_Type_Definition:
The data table SEASONAL contains information on the seasonal presence of each species associated with each spatial vector object. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

Entity_Type_Definition_Source:
NOAA ESI Guidelines

Attribute:

Attribute_Label:
ELEMENT

Attribute_Definition:
Major categories of biological data.

Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:
BIRD

Enumerated_Domain_Value_Definition:
Birds

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:
FISH

Enumerated_Domain_Value_Definition:
Fish

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:
HABITAT

Enumerated_Domain_Value_Definition:
Habitats and plants

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:
INVERT

Enumerated_Domain_Value_Definition:
Invertebrates

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:
M_MAMMAL

Enumerated_Domain_Value_Definition:
Marine Mammals

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value:
    REPTILE
    Enumerated Domain Value Definition:
      Reptiles and Amphibians
    Enumerated Domain Value Definition Source:
      NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value:
    T_MAMMAL
    Enumerated Domain Value Definition:
      Terrestrial Mammals
    Enumerated Domain Value Definition Source:
      NOAA ESI Guidelines

Attribute:
  Attribute Label: SPECIES_ID
  Attribute Definition:
    Numeric identifier for each species that is unique within each element and refers to a nationwide ESI species list maintained at NOAA.
  Attribute Definition Source:
    NOAA ESI Guidelines
  Attribute Domain Values:
    Range Domain:
      Range Domain Minimum:
        1
      Range Domain Maximum:
        N

Attribute:
  Attribute Label: SEASON_ID
  Attribute Definition:
    Numeric identifier for the unique monthly presence and life history characteristics of each species at a given location.
  Attribute Definition Source:
    NOAA ESI Guidelines
  Attribute Domain Values:
    Range Domain:
      Range Domain Minimum:
        1
      Range Domain Maximum:
        N

Attribute:
  Attribute Label: JAN
  Attribute Definition:
    January
  Attribute Definition Source:
    NOAA ESI Guidelines
  Attribute Domain Values:
    Enumerated Domain:
      Enumerated Domain Value:
        X
      Enumerated Domain Value Definition:
        Present in January
      Enumerated Domain Value Definition Source:
        NOAA ESI Guidelines

Attribute:
Attribute_Label: FEB
Attribute_Definition: February
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: X
    Enumerated_Domain_Value_Definition: Present in February
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
Attribute_Label: MAR
Attribute_Definition: March
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: X
    Enumerated_Domain_Value_Definition: Present in March
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
Attribute_Label: APR
Attribute_Definition: April
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: X
    Enumerated_Domain_Value_Definition: Present in April
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
Attribute_Label: MAY
Attribute_Definition: May
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: X
    Enumerated_Domain_Value_Definition: Present in May
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
**Attribute Label:** JUN
**Attribute Definition:** June
**Attribute Definition Source:** NOAA ESI Guidelines
**Attribute Domain Values:**
  **Enumerated Domain:**
  **Enumerated Domain Value:** X
  **Enumerated Domain Value Definition:** Present in June
  **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

**Attribute:**
**Attribute Label:** JUL
**Attribute Definition:** July
**Attribute Definition Source:** NOAA ESI Guidelines
**Attribute Domain Values:**
  **Enumerated Domain:**
  **Enumerated Domain Value:** X
  **Enumerated Domain Value Definition:** Present in July
  **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

**Attribute:**
**Attribute Label:** AUG
**Attribute Definition:** August
**Attribute Definition Source:** NOAA ESI Guidelines
**Attribute Domain Values:**
  **Enumerated Domain:**
  **Enumerated Domain Value:** X
  **Enumerated Domain Value Definition:** Present in August
  **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

**Attribute:**
**Attribute Label:** SEP
**Attribute Definition:** September
**Attribute Definition Source:** NOAA ESI Guidelines
**Attribute Domain Values:**
  **Enumerated Domain:**
  **Enumerated Domain Value:** X
  **Enumerated Domain Value Definition:** Present in September
  **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines
Attribute_Label: OCT
Attribute_Definition: October
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: X
    Enumerated_Domain_Value_Definition: Present in October
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: NOV
  Attribute_Definition: November
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: X
      Enumerated_Domain_Value_Definition: Present in November
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: DEC
  Attribute_Definition: December
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: X
      Enumerated_Domain_Value_Definition: Present in December
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: EL_SPE_SEA
  Attribute_Definition: Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the SEASONAL data table to records in the BIORES and BREED data tables.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: E#######
      Enumerated_Domain_Value_Definition: Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').
**Entity Type:**

**Entity Type Label:** BREED

**Entity Type Definition:**
The data table BREED identifies the monthly presence of certain life-history stages or activities for each species at a given location.

**Entity Type Definition Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute Label:** EL_SPE_SEA

**Attribute Definition:**
Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the BREED data table to records in the BIORES and SEASONAL data tables.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:** E#######

**Enumerated Domain Value Definition:**
Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute Label:** MONTH

**Attribute Definition:**
Two-digit calendar month. Each life history stage or activity type for a particular species can have up to 12 records to account for each month of the year.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Range Domain:**

**Range Domain Minimum:**
1

**Range Domain Maximum:**
12

**Attribute:**

**Attribute Label:** BREED1

**Attribute Definition:**
Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED1 = nesting; if ELEMENT is "FISH" then BREED1 = spawning; if ELEMENT is "INVERT" then BREED1 = spawning; if ELEMENT is "REPTILE" then BREED1 = nesting; if ELEMENT is "M_MAMMAL" then BREED1 = mating. This attribute is not used for HABITAT or T_MAMMAL.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:** Y

**Enumerated Domain Value Definition:**
Life-history stage or activity present

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
N
Enumerated Domain Value Definition:
Life-history stage or activity not present or not reported
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
-
Enumerated Domain Value Definition:
Breed category not used or not appropriate for record(s) in question
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute: 
Attribute Label: BREED2
Attribute Definition:
Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED2 = migrating; if ELEMENT is "FISH" then BREED2 = eggs; if ELEMENT is "INVERT" then BREED2 = eggs; if ELEMENT is "REPTILE" then BREED2 = hatching; if ELEMENT is "M_MAMMAL" then BREED2 = calving. This attribute is not used for HABITAT or T_MAMMAL elements.
Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
Y
Enumerated Domain Value Definition:
Life-history stage or activity present
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
N
Enumerated Domain Value Definition:
Life-history stage or activity not present or not reported
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
-
Enumerated Domain Value Definition:
Breed category not used or not appropriate for record(s) in question
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute: 
Attribute Label: BREED3
Attribute Definition:
Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED3 = molting; if ELEMENT is "FISH" then BREED3 = larvae; if ELEMENT is "INVERT" then BREED3 = larvae; if ELEMENT is "REPTILE" then BREED3 = internesting; if ELEMENT is "M_MAMMAL" then BREED3 = pupping. This attribute is not used for HABITAT or T_MAMMAL elements.
Attribute Definition Source:
NOAA ESI Guidelines

**Attribute**

**Attribute Label:** BREED4

**Attribute Definition:**
Life history stage or activity type, where: if ELEMENT is "FISH" then BREED4 = juveniles; if ELEMENT is "INVERT" then BREED4 = juveniles; if ELEMENT is "REPTILE" then BREED4 = juveniles; if ELEMENT is "M_MAMMAL" then BREED4 = molting. This attribute is not used for BIRD, HABITAT, or T_MAMMAL elements.

**Attribute Definition Source:** NOAA ESI Guidelines

---

**Attribute Domain Values:**

**Enumerated Domain:**

- **Enumerated Domain Value:** Y
  - **Enumerated Domain Value Definition:** Life-history stage or activity present
    - **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

- **Enumerated Domain Value:** N
  - **Enumerated Domain Value Definition:** Life-history stage or activity not present or not reported
    - **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

- **Enumerated Domain Value:** -
  - **Enumerated Domain Value Definition:** Breed category not used or not appropriate for record(s) in question
    - **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines
**Attribute_Label:**
BREED5

**Attribute_Definition:**
Life history stage or activity type, where: if ELEMENT is "FISH" then BREED5 = adults; if ELEMENT is "INVERT" then BREED5 = adults; if ELEMENT is "REPTILE" then BREED5 = adults. This attribute is not used for BIRD, M_MAMMAL, HABITAT or T_MAMMAL elements.

**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

- **Enumerated_Domain_Value:**
  Y
  **Enumerated_Domain_Value_Definition:**
  Life-history stage or activity present
  **Enumerated_Domain_Value_Definition_Source:**
  NOAA ESI Guidelines

- **Enumerated_Domain_Value:**
  N
  **Enumerated_Domain_Value_Definition:**
  Life-history stage or activity not present or not reported
  **Enumerated_Domain_Value_Definition_Source:**
  NOAA ESI Guidelines

- **Enumerated_Domain_Value:**
  -
    **Enumerated_Domain_Value_Definition:**
    Breed category not used or not appropriate for record(s) in question
    **Enumerated_Domain_Value_Definition_Source:**
    NOAA ESI Guidelines

**Detailed_Description:**

**Entity_Type:**

- **Entity_Type_Label:**
  STATUS

**Entity_Type_Definition:**
The data table STATUS identifies the species that are listed as either threatened or endangered by a state, federal, or international authority. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

**Entity_Type_Definition_Source:**
NOAA ESI Guidelines

**Attribute:**

- **Attribute_Label:**
  ELEMENT

**Attribute_Definition:**
Major categories of biological data.

**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**

- **Enumerated_Domain:**
  BIRD
    **Enumerated_Domain_Value:**
    Birds
    **Enumerated_Domain_Value_Definition_Source:**
    NOAA ESI Guidelines

- **Enumerated_Domain:**
  -
FISH

*Enumerated_Domain_Value_Definition:* Fish

*Enumerated_Domain_Value_Definition_Source:* NOAA ESI Guidelines

**Attribute_Domain_Values:**

*Enumerated_Domain:*

*Enumerated_Domain_Value:*

**HABITAT**

*Enumerated_Domain_Value_Definition:*

Habitats and Plants

*Enumerated_Domain_Value_Definition_Source:* NOAA ESI Guidelines

**Attribute_Domain_Values:**

*Enumerated_Domain:*

*Enumerated_Domain_Value:*

**INVERT**

*Enumerated_Domain_Value_Definition:*

Invertebrates

*Enumerated_Domain_Value_Definition_Source:* NOAA ESI Guidelines

**Attribute_Domain_Values:**

*Enumerated_Domain:*

*Enumerated_Domain_Value:*

**M_MAMMAL**

*Enumerated_Domain_Value_Definition:*

Marine Mammals

*Enumerated_Domain_Value_Definition_Source:* NOAA ESI Guidelines

**Attribute_Domain_Values:**

*Enumerated_Domain:*

*Enumerated_Domain_Value:*

**REPTILE**

*Enumerated_Domain_Value_Definition:*

Reptiles and Amphibians

*Enumerated_Domain_Value_Definition_Source:* NOAA ESI Guidelines

**Attribute_Domain_Values:**

*Enumerated_Domain:*

*Enumerated_Domain_Value:*

**T_MAMMAL**

*Enumerated_Domain_Value_Definition:*

Terrestrial Mammals

*Enumerated_Domain_Value_Definition_Source:* NOAA ESI Guidelines

**Attribute:**

*Attribute_Label:* SPECIES_ID

*Attribute_Definition:* Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI species list maintained at NOAA.

*Attribute_Definition_Source:* NOAA ESI Guidelines

*Attribute_Domain_Values:* 

*Range_Domain:*

*Range_Domain_Minimum:* 1

*Range_Domain_Maximum:* N
Attribute: 
Attribute_Label: STATE
Attribute_Definition: Two-letter state abbreviation.
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute: 
Attribute_Label: COUNTRY
Attribute_Definition: Three-letter country abbreviation.
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute: 
Attribute_Label: S
Attribute_Definition: State threatened or endangered status.
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
E
Enumerated_Domain_Value_Definition: Endangered on state list
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
T
Enumerated_Domain_Value_Definition: Threatened on state list
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
C
Enumerated_Domain_Value_Definition: Species of Special Concern
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute: 
Attribute_Label: F
Attribute_Definition: Federal threatened or endangered status.
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
E
Enumerated_Domain_Value_Definition:
Endangered on federal list
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
T
Enumerated_Domain_Value_Definition:
Threatened on federal list
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
C
Enumerated_Domain_Value_Definition:
Species of Special Concern
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines
Attribute:
Attribute_Label:
I
Attribute_Definition:
International threatened or endangered status.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
E
Enumerated_Domain_Value_Definition:
Endangered on international list
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
T
Enumerated_Domain_Value_Definition:
Threatened on international list
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
C
Enumerated_Domain_Value_Definition:
Species of Special Concern
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines
Attribute:
Attribute_Label:
S_DATE
Attribute_Definition:
Publication date of source material used to assign state status values for each species, if used.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
   Enumerated_Domain_Value:
       YYYYMM
   Enumerated_Domain_Value_Definition:
       YYYY for year and optionally MM for month
   Enumerated_Domain_Value_Definition_Source:
       NOAA ESI Guidelines

Attribute:
   Attribute_Label:
       F_DATE
   Attribute_Definition:
       Publication date of source material used to assign federal status values for each species, if used.
   Attribute_Definition_Source:
       NOAA ESI Guidelines
   Attribute_Domain_Values:
       Enumerated_Domain:
           Enumerated_Domain_Value:
               YYYYMM
           Enumerated_Domain_Value_Definition:
               YYYY for year and optionally MM for month
           Enumerated_Domain_Value_Definition_Source:
               NOAA ESI Guidelines

Attribute:
   Attribute_Label:
       I_DATE
   Attribute_Definition:
       Publication date of source material used to assign international status values for each species, if used.
   Attribute_Definition_Source:
       NOAA ESI Guidelines
   Attribute_Domain_Values:
       Enumerated_Domain:
           Enumerated_Domain_Value:
               YYYYMM
           Enumerated_Domain_Value_Definition:
               YYYY for year and optionally MM for month
           Enumerated_Domain_Value_Definition_Source:
               NOAA ESI Guidelines

Attribute:
   Attribute_Label:
       EL_SPE
   Attribute_Definition:
       Concatenation of ELEMENT and SPECIES_ID. This item links the STATUS data table to the BIORES and SPECIES data tables.
   Attribute_Definition_Source:
       NOAA ESI Guidelines
   Attribute_Domain_Values:
       Enumerated_Domain:
           Enumerated_Domain_Value:
               E####
           Enumerated_Domain_Value_Definition:
               Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1; EL_SPE = 'B00001').
           Enumerated_Domain_Value_Definition_Source:
               NOAA ESI Guidelines

Detailed_Description:
   Entity_Type:
       Entity_Type_Label:
           SOURCES
       Entity_Type_Definition:
           The data table SOURCES contains the primary sources used to create the ESI data set. See the BrowseGraphic
section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute
tables in the ESI data structure.

**Entity_Type_Definition_Source:**
NOAA ESI Guidelines

**Attribute:**
**Attribute_Label:** SOURCE_ID
**Attribute_Definition:**
Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the
SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; SOURCE_ID and ESI_SOURCE in the
ESIL and ESIP data layers; and SOURCE_ID in the HYDRO data layer.

**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**
**Range_Domain:**
- **Range_Domain_Minimum:** 1
- **Range_Domain_Maximum:** N

**Attribute:**
**Attribute_Label:** ORIGINATOR
**Attribute_Definition:**
Author or developer of source material or data set.

**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**
**Unrepresentable_Domain:**
Acceptable values change from atlas to atlas.

**Attribute:**
**Attribute_Label:** DATE_PUB
**Attribute_Definition:**
Date of source material, publication, or date of personal communication with expert source.

**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**
**Enumerated_Domain:**
- **Enumerated_Domain_Value:** YYYYMM
- **Enumerated_Domain_Value_Definition:**
  YYYY for year and optionally MM for month
  **Enumerated_Domain_Value_Definition_Source:**
  NOAA ESI Guidelines

**Attribute:**
**Attribute_Label:** TITLE
**Attribute_Definition:**
Title of source material or data.

**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**
**Unrepresentable_Domain:**
Acceptable values change from atlas to atlas.

**Attribute:**
**Attribute_Label:** DATA_FORMAT
**Attribute_Definition:**
The format of the source material.

**Attribute_Definition_Source:**
NOAA ESI Guidelines

Attribute Domain Values:
  Unrepresentable Domain:
    Acceptable values change from atlas to atlas.

**Attribute:**
*Attribute Label:* PUB_PLACE
*Attribute Definition:* Publication place.
*Attribute Definition Source:* NOAA ESI Guidelines
*Attribute Domain Values:* Unrepresentable Domain:
  Acceptable values change from atlas to atlas.

**Attribute:**
*Attribute Label:* PUBLISHER
*Attribute Definition:* Publisher.
*Attribute Definition Source:* NOAA ESI Guidelines
*Attribute Domain Values:* Unrepresentable Domain:
  Acceptable values change from atlas to atlas.

**Attribute:**
*Attribute Label:* PUBLICATION
*Attribute Definition:* Additional citation information.
*Attribute Definition Source:* NOAA ESI Guidelines
*Attribute Domain Values:* Unrepresentable Domain:
  Acceptable values change from atlas to atlas.

**Attribute:**
*Attribute Label:* ONLINE_LINK
*Attribute Definition:* Online computer resource URL.
*Attribute Definition Source:* NOAA ESI Guidelines
*Attribute Domain Values:* Unrepresentable Domain:
  Acceptable values change from atlas to atlas.

**Attribute:**
*Attribute Label:* SCALE
*Attribute Definition:* Description of the source scale.
*Attribute Definition Source:* NOAA ESI Guidelines
*Attribute Domain Values:* Unrepresentable Domain:
  Acceptable values change from atlas to atlas.

**Attribute:**
*Attribute Label:* TIME_PERIOD
*Attribute Definition:* Date(s) of data collection that the source material is based upon.
*Attribute Definition Source:*
NOAA ESI Guidelines

Attribute_Domain_Values:

Unrepresentable_Domain:
Acceptable values change from atlas to atlas.

Overview_Description:

In addition to the geographic data layers, six relational attribute or data tables (BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS) are used to store the complex biological data in the ESI data structure. The geographic data layer containing biological resource information (in this case, INVERT) is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or it can be linked directly using RARNUM. The ID is a unique combination of the atlas number (for the Delaware/New Jersey/Pennsylvania atlas, the number is 212), an element/layer specific number (BIRDS are layer 1, FISH are layer 2, etc.), and a unique record number. The RARNUM represents a unique combination of species, seasonalities, concentrations, and source information. For each of these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases. BIORES and the other relational data tables are described in the Detailed_Description sections. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way these tables relate to the geographic data layers and other attribute tables in the ESI data structure. Due to the complexity of the relational database model, the data items are also post-processed into a flat file format. This table, called BIOFILE, may be used in place of the relational files to ease simple data queries. The items in the flat file are ELEMENT, SUBELEMENT, NAME, GEN_SPEC, S, F, NHP, DATE_PUB, CONC, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC, BREED1, BREED2, BREED3, BREED4, BREED5, RARNUM, G_SOURCE, S_SOURCE, and BREED. All of these items are the same as their counterparts in the individual data tables (described in the Detailed_Description sections), except the BREED1-BREED5 and BREED items. BREED is a newly generated variable used to link to the BREED_DT data table, a modified, more compact version of the relational BREED data table. BREED1-BREED5 give a text summary of when each life stage occurs within the associated map object. The life stages referred to are the same as those listed in the Detailed_Description of the BREED data table. The link to the BIOFILE may be made through the BIO_LUT, using ID to link to RARNUM, or BIOFILE may be linked directly to the RARNUM in each of the geographic layer's attribute data tables. As mentioned, BREED_DT is an auxiliary support data table to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item. A second supporting data table is SOURCES. This is the same as the source file described above, and the link from the flat file is both G_SOURCE and S_SOURCE. It should be noted that although the flat file eases data query, it is not a normalized database structure, and actual updates performed by the states and other responsible agencies should be done using the relational data tables. The entity-relationship diagram, describing relationships between attribute tables in the ESI data structure, does NOT include the BIOFILE data table, and this data table is NOT described in a Detailed_Description section.

Entity_and_Attribute_Detail_Citation:
A complete description of entity types, attributes, and attribute values for ESI atlases can be found in the NOAA ESI Guidelines (http://response.restoration.noaa.gov/esi_guidelines).

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Distribution_Information:
Distributor:

Contact_Information:
Contact_Person_Primary:
Contact Person:
ESI Manager
Contact_Organization:
NOAA, Office of Response and Restoration

Contact_Address:
Address_Type:
Physical Address
Address:
7600 Sand Point Way N.E.
City:
Seattle
State_or_Province:
Washington
Postal Code: 98115-6349
Contact Voice Telephone: (206) 526-6944
Contact Facsimile Telephone: (206) 526-6329
Contact Electronic Mail Address: orr.esi@noaa.gov

Resource Description: Downloadable Data

Distribution Liability: Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format. If problems are encountered either in downloading the ESI data or if any file appears corrupted, please contact the ESI manager.

Custom Order Process: Contact NOAA if you require the data be provided to you on CD/DVD. (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export files, Shapefiles, and a file Geodatabase (the recommended format). The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

Metadata Reference Information:
Metadata Date: 20140620
Metadata Contact:

Contact Information:
Contact Person Primary:
Contact Person: ESI Manager
Contact Organization: NOAA, Office of Response and Restoration
Contact Position: GIS Manager
Contact Address:
Address Type: Physical Address
Address: 7600 Sand Point Way, N.E.
City: Seattle
State or Province: Washington
Postal Code: 98115-6349
Contact Voice Telephone: (206) 526-6944
Contact Facsimile Telephone: (206) 526-6329
Contact Electronic Mail Address: orr.esi@noaa.gov

Metadata Standard Name: Content Standards for Digital Geospatial Metadata
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: REPTILES (Reptile Polygons)

Metadata:

- Identification Information
- Data Quality Information
- Spatial Data Organization Information
- Spatial Reference Information
- Entity and Attribute Information
- Distribution Information
- Metadata Reference Information

Identification Information:

Citation:

Citation Information:

Originator:


Originator:

Department of Homeland Security, United States Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.

Publication Date:

201403

Title:

Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: REPTILES (Reptile Polygons)

Edition:

Second

Geospatial Data Presentation Form:

vector digital data

Series Information:

Series Name:

None

Issue Identification:

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Publication Information:

Publication Place:

Seattle, Washington

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Online Linkage:

http://response.restoration.noaa.gov/esi

Online Linkage:

http://response.restoration.noaa.gov/esi_download

Online Linkage:

http://response.restoration.noaa.gov/esi_guidelines

Description:

Abstract:
This data set contains sensitive biological resource data for sea turtles and estuarine turtles and endangered/rare reptiles and amphibians Delaware/New Jersey/Pennsylvania. Vector polygons in this data set represent reptile and amphibian occurrence and distribution areas. Species specific abundance, seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer. This data set comprises a portion of the ESI data for Delaware/New Jersey/Pennsylvania. 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.

**Purpose:**
The ESI data were collected, mapped, and digitized to provide environmental data for oil spill planning and response. The Clean Water Act with amendments by the Oil Pollution Act of 1990 requires response plans for immediate and effective protection of sensitive resources.

**Time_Period_of_Content:**

**Time_Period_Information:**

**Range_of_Dates/Times:**
- **Beginning_Date:** 1985
- **Ending_Date:** 2014

**Currentness_Reference:**
The data were compiled during 2013-2014. The currentness dates for the data range from 1985 to 2014 and are documented in the Lineage section.

**Status:**

**Progress:**
- Complete

**Maintenance_and_Update_Frequency:**
- None Scheduled

**Spatial_Domain:**

**Bounding_Coordinates:**
- **West_BoundingCoordinate:** -75.75000
- **East_BoundingCoordinate:** -74.03800
- **North_BoundingCoordinate:** 40.23700
- **South_BoundingCoordinate:** 38.37500

**Keywords:**

**Theme:**

**Theme_Keyword_Thesaurus:**
- ISO 19115 Topic Category

**Theme_Keyword:**
- biota

**Theme_Keyword:**
- environment

**Theme:**

**Theme_Keyword_Thesaurus:**
- None

**Theme_Keyword:**
- Environmental Monitoring

**Theme_Keyword:**
- ESI

**Theme_Keyword:**
- Sensitivity maps

**Theme_Keyword:**
- Coastal resources

**Theme_Keyword:**
- Oil spill planning

**Theme_Keyword:**
- Coastal Zone Management

**Theme_Keyword:**
Wildlife

Theme_Keyword:
Reptile

Theme:

Theme_Keyword_Thesaurus:
NOS Data Explorer Topic Category

Theme_Keyword:
Environmental Monitoring

Place:

Place_Keyword_Thesaurus:
None

Place_Keyword:
Delaware/New Jersey/Pennsylvania

Access_Constraints:
None

Use_Constraints:
DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Management boundaries are not to be considered legal boundaries. Edges may have been altered for cartographic processes. Besides the above warnings, there are no use constraints on these data. Note that the ESI database should not be used to the exclusion of other pertinent data or information held by state or federal agencies or other organizations. Likewise, information contained in the database cannot be used in place of consultations with environmental, natural resource, and cultural resource agencies, or in place of field surveys. Recognize that the information contained in the ESI database represents known concentration areas or occurrences of natural, cultural, and human-use resources, but does not necessarily represent the full distribution or range of each species or resource. This is particularly important to recognize when considering potential impacts to protected resources, such as endangered species, wetlands, etc. Acknowledgment of the originators, publishers, contributors, and sources listed would be appreciated in products derived from these data.

Browse_Graphic:

Browse_Graphic_File_Name:

Browse_Graphic_File_Description:
Depicts the relationships between spatial data layers and attribute data tables for the Delaware/New Jersey/Pennsylvania ESI data.

Browse_Graphic_File_Type:
JPEG

Browse_Graphic:

Browse_Graphic_File_Name:

Browse_Graphic_File_Description:
Depicts the relationships between spatial data layers and desktop data tables for the Delaware/New Jersey/Pennsylvania ESI data.

Browse_Graphic_File_Type:
JPEG

Data_Set_Credit:
This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Office of Response and Restoration (OR&R), Emergency Response Division (ERD), Seattle, Washington; and The Department of Homeland Security, United States Coast Guard Office of Incident Management and Preparedness, Washington, D.C.

Native_Data_Set_Environment:
The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(R) (version 10.2) and SQL SERVER(R) (version 2005). The hardware configuration is PCs with Windows Operating System 7. The Spatial_Data_Organization Information section refers only to the source files in the ARC export format. The following files are included in the data set: benthic.e00, birds.e00, esil.e00, esip.e00, fish.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, socecon.e00, and t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut.e00, biofile.e00, biore.e00, breed.e00, breed_dt.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, sources.e00, species.e00, and status.e00.

Data_Quality_Information:
Attribute_Accuracy:
  Attribute_Accuracy_Report:
  
  A multi-stage error checking process is used to verify both attribute accuracy and logical consistency throughout data production. The process includes a standardized data entry methodology, hardcopy data review by in-house and external resource experts, a final Quality Assurance/Quality Control (QA/QC) process, and multiple automated logical consistency checks. Quantitative data (such as densities, counts, abundances, or concentrations) provided by resource experts for inclusion in the data set may vary widely in attribute accuracy, depending upon the methodology used to collect and compile such data. For a more detailed evaluation of source data attribute accuracy, contact the sources listed in the Lineage section.

Logical_Consistency_Report:
  
  A multi-stage error checking process, described in the above Attribute_Accuracy_Report, is used to verify both attribute accuracy and logical consistency throughout data production. This process includes multiple automated logical consistency checks that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and SQL SERVER(R) to ARC/INFO(R) consistencies. After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks. In the process of checking for topological and database consistencies, new ID's and RARNUM's or HUNUM's are also generated. The new ID's are a combination of atlas number, element number, and record number. In addition, the value used to represent the element is modified to reflect the type of feature being mapped. In the case of an element that is normally represented by a point or polygon, a value of 20 is added to the standard element value for mapping of linear features. In the case where an element usually mapped as a polygon is represented by a point, a value of 30 is added to the regular element value. The RARNUM's are also modified to include the atlas number, so multiple atlases can be combined and RARNUM's remain unique. RARNUM's are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUM's are also modified to include the atlas number.

Completeness_Report:
  
  These data represent a synthesis of expert knowledge, available hardcopy documents, survey data, and digital data on reptile and amphibian occurrence and/or distribution. These data do not necessarily represent all reptile occurrences in Delaware/New Jersey/Pennsylvania. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 2, Green sea turtle, Chelonia mydas; 4, Kemp's ridley sea turtle, Lepidochelys kempii; 5, Leatherback sea turtle, Dermochelys coriacea; 6, Loggerhead sea turtle, Caretta caretta; 7, Diamondback terrapin, Malaclemys terrapin; 112, Rare amphibian, n/a; 183, Rare reptile, n/a; 184, Southern leopard frog, Lithobates sphenoecephalus; 211, Endangered amphibian, n/a; 212, Endangered reptile, n/a; 213, Northern red-bellied cooter, Pseudemys rubriventris.

Positional_Accuracy:
  Horizontal_Positional_Accuracy:
  
  Horizontal_Positional_Accuracy_Report:
  
  Spatial components for the biological data layers can come from expert interviews, hardcopy, or digital sources. Some of the spatial components of the biological data layers may have been developed using regional experts who estimate concentration areas. It is difficult to estimate the positional accuracy of such data, except to state that they are compiled on hardcopy base maps with a scale of 1:45,000. Some of the spatial components of the biological data sets are developed from pre-existing digital or hardcopy sources and reflect the positional accuracy of these original data. Note that biological resource data by their very nature are considered "fuzzy", and this should be understood when considering the positional accuracy of vector digital objects representing these resources. See the Lineage and Process_Description sections for more information on the original source data and how these data were integrated or manipulated to create the final data set.

Lineage:
  Source_Information:
  Source_Citation:
  Citation_Information:
  Originator:
    DELAWARE DEPARTMENT OF NATURAL RESOURCES AND CONTROL (DNREC) - EDNA STETZAR
  Publication_Date:
    2013
  Title:
    MARINE MAMMAL AND SEA TURTLE DISTRIBUTION AND SEASONALITY IN THE DELAWARE BAY
  Geospatial_Data_Presentation_Form:
    EXPERT KNOWLEDGE
  Other_Citation_Details:
    UNPUBLISHED
Type_of_Source_Media: PERSONAL COMMUNICATION
Source_Time_Period_of_Content:
Time_Period_Information:
  Single_Date/Time:
    Calendar_Date:
      2013
Source_Currentness_Reference:
  DATE OF COMMUNICATION
Source_Citation_Abbreviation:
  Src_0
Source_Contribution:
  REPTILES INFORMATION

Source_Information:
Source_Citation:
  Citation_Information:
    Originator:
      DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL (DNREC)
    Publication_Date:
      2012
    Title:
      ELEMENT OCCURRENCE RECORDS
  Geospatial_Data_Presentation_Form:
    vector digital data
  Other_Citation_Details:
    UNPUBLISHED

Type_of_Source_Media: EMAIL
Source_Time_Period_of_Content:
Time_Period_Information:
  Range_of_Dates/Times:
    Beginning_Date:
      1985
    Ending_Date:
      2012
Source_Currentness_Reference:
  DATE OF SURVEY
Source_Citation_Abbreviation:
  Src_1
Source_Contribution:
  REPTILES INFORMATION

Source_Information:
Source_Citation:
  Citation_Information:
    Originator:
      DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL (DNREC)
    Publication_Date:
      2013
    Title:
      DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL DATA COLLECTION MEETING
  Geospatial_Data_Presentation_Form:
    EXPERT KNOWLEDGE
  Other_Citation_Details:
    UNPUBLISHED

Type_of_Source_Media: PERSONAL COMMUNICATION
Source_Time_Period_of_Content:
Time_Period_Information:
  Single_Date/Time:
    Calendar_Date:
      2014

Source_Currentness_Reference:
  DATE OF PUBLICATION

Source_Citation_Abbreviation:
  Src_4

Source_Contribution:
  REPTILES INFORMATION

Source_Information:
  Source_Citation:
    Citation_Information:
      Originator:
        NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF FISH
        AND WILDLIFE (NJDEP) OFFICE OF SCIENCE
      Publication_Date:
        2010
      Title:
        OCEAN/WIND POWER ECOLOGICAL BASELINE STUDIES JANUARY 2008-DECEMBER
        2009 FINAL REPORT VOLUME III: MARINE MAMMAL AND SEA TURTLE STUDIES
    Geospatial_Data_Presentation_Form:
      HARDCOPY TEXT
    Publication_Information:
      Publication_Place:
        PLANO, TX
      Publisher:
        GEO-MARINE, INC.
    Other_Citation_Details:
      218 PP

Type_of_Source_Media:
  online

Source_Time_Period_of_Content:
  Time_Period_Information:
    Range_of_Dates/Times:
      Beginning_Date:
        2008
      Ending_Date:
        2009
  Source_Currentness_Reference:
    DATE OF SURVEY

Source_Citation_Abbreviation:
  Src_5

Source_Contribution:
  REPTILES INFORMATION

Source_Information:
  Source_Citation:
    Citation_Information:
      Originator:
        PALMER, W.M., AND C.L. CORDES
      Publication_Date:
        1988
      Title:
        HABITAT SUITABILITY INDEX MODELS: DIAMONDBACK TERRAPIN (NESTING) --
        ATLANTIC COAST
    Geospatial_Data_Presentation_Form:
      document
    Publication_Information:
      Publication_Place:
        WASHINGTON D.C.
The mapping extent was dependent upon information availability and location of mapped coastal habitats and shorelines. The main sources of data used to depict reptile and amphibian distribution and seasonality for this data layer were personal interviews with resource experts from Delaware Department of Natural Resources and Environmental Control (DNREC) and published/unpublished reports. Diamondback terrapin – DNREC staff provided habitat guidelines for mapping potential nesting sites within the Delaware Bay system. These areas include salt marsh banks and beaches along the Delaware Bay and its tributaries. Delaware Rare and Endangered Species Element Occurrence Data – Rare and endangered species of reptiles and amphibians from Delaware were mapped in part by using element occurrence data provided by DNREC. Species names were obscured as per the guidelines for data use provided by DNREC. Polygons with diameter greater than 100 meters (m) were mapped as is, and all other polygons were mapped after applying a polygonal buffer and a randomized geographic shift. Sea turtles – Green (FT, DE SE, NJ ST), Kemp’s ridley (FE, DE and NJ SE), leatherback (FE, DE and NJ SE) and loggerhead (FT, DE and NJ SE) sea turtles were included in this atlas. Polygons represent potential in-water presence in Delaware Bay, the Atlantic Ocean, DE Inland Bays, and the lower Delaware River. Green sea turtles are uncommon, Kemp’s ridley are possible, leatherbacks are occasional, and loggerheads are common in the Area of Interest (AOI) waters from April-November. The following list includes state listed endangered (SE) or rare (not listed) reptile and amphibian species for which common names were obscured in DE, by request of the data providers within DE. Species were renamed based on their federal or state listing status and ESI subelement: e.g., ‘endangered amphibian’, ‘rare reptile’, etc. Amphibians: •Barking treefrog – DE, SE •Eastern mud salamander – DE, SE •Eastern tiger salamander – DE, SE •Cope’s gray treefrog – not listed •Spotted salamander – not listed Reptiles: •Corn snake – DE, SE •Copperhead – not listed •Eastern ribbon snake – not listed •Queen snake – not listed •Rough green snake – not listed The above digital and/or hardcopy sources were compiled by the project biologist to create the REPTILES data layer. Depending on the type of source data, three general approaches are used for compiling the data layer: 1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:45,000 topographic quadrangles and digitized; 2) hardcopy maps are digitized at their source scale; 3) digital data layers are evaluated and used “as is” or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer. The ESI, biology, and human-use data are compiled into the standard ESI digital data format. A second set of interviews with participating resource experts are conducted to review the compiled data. If necessary, edits to the REPTILES data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.
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:
2793

SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type:
Area point
Point_and_Vector_Object_Count:
2792

SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type:
Complete chain
Point_and_Vector_Object_Count:
9365

SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type:
Link
Point_and_Vector_Object_Count:
1724788

SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type:
Node, planar graph
Point_and_Vector_Object_Count:
8550

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:
Geographic:
Latitude_Resolution:
0.0000001
Longitude_Resolution:
0.0000001
Geographic_Coordinate_Units:
Decimal degrees
Geodetic_Model:
**Horizontal_Datum_Name:**
North American Datum of 1983

**Ellipsoid_Name:**
Geodetic Reference System 80

**Semi-major_Axis:**
6378137.000000

**Denominator_of_Flattening_Ratio:**
298.257222

---

**Entity_and_Attribute_Information:**

**Detailed_Description:**

**Entity_Type:**

**Entity_Type_Label:**
REPTILES.PAT

**Entity_Type_Definition:**
The REPTILES.PAT table contains attribute information for the vector polygons in this data set representing reptile and amphibian occurrence and distribution areas. Note that all attribute information is stored in a series of relational files, described below and in the Overview_Description section. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the relationships between attribute tables in the ESI data structure.

**Entity_Type_Definition_Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute_Label:**
ID

**Attribute_Definition:**
An identifier that links vector objects in the biology data layers to records in the BIO_LUT data table. ID is a concatenation of atlas number (212), element number (6), and record number. ID values of 9999 are holes in polygons and do not contain information.

**Attribute_Definition_Source:**
NOAA

**Attribute_Domain_Values:**

**Range_Domain:**

---

**Attribute_Label:**
RARNUM

**Attribute_Definition:**
An identifier that links directly to the BIORES table or the flat format BIOFILE table. RARNUM values of 0 are holes in the polygons and do not contain information.

**Attribute_Definition_Source:**
NOAA

**Attribute_Domain_Values:**

**Range_Domain:**

---

**Detailed_Description:**

**Entity_Type:**

**Entity_Type_Label:**
BIO_LUT

**Entity_Type_Definition:**
The data table BIO_LUT is a lookup table that contains items necessary for linking vector objects in the
biological data layers with the BIORES data table. Note that all attribute information is stored in a series of relational files, described below and in the Overview_Description section. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

**Entity_Type_Definition_Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute_Label:** RARNUM

**Attribute_Definition:**
An identifier that links records in the BIO_LUT data table to records in the BIORES data table or the flat format BIOFILE data table. RARNUM values of 0 are holes in polygons and do not contain information.

**Attribute_Definition_Source:**
NOAA

**Attribute_Domain_Values:**

**Range_Domain:**

<table>
<thead>
<tr>
<th>Range_Domain_Minimum</th>
<th>Range_Domain_Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>212000001</td>
<td>212001295</td>
</tr>
</tbody>
</table>

**Attribute:**

**Attribute_Label:** ID

**Attribute_Definition:**
An identifier that links vector objects in the biology data layers to records in the BIO_LUT data table. ID is a concatenation of atlas number (212), element number (6), and record number. ID values of 9999 are holes in polygons and do not contain information.

**Attribute_Definition_Source:**
NOAA

**Attribute_Domain_Values:**

**Range_Domain:**

<table>
<thead>
<tr>
<th>Range_Domain_Minimum</th>
<th>Range_Domain_Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>2120100002</td>
<td>2120900295</td>
</tr>
</tbody>
</table>

**Detailed_Description:**

**Entity_Type:**

**Entity_Type_Label:** BIORES

**Entity_Type_Definition:**
The data table BIORES contains both biological attribute data and items necessary for linking vector objects in the biological data layers via the BIO_LUT data table to other associated data tables. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

**Entity_Type_Definition_Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute_Label:** RARNUM

**Attribute_Definition:**
An identifier that links records in the BIORES data table to records in the BIO_LUT data table or the flat format BIOFILE data table.

**Attribute_Definition_Source:**
NOAA

**Attribute_Domain_Values:**

**Range_Domain:**

<table>
<thead>
<tr>
<th>Range_Domain_Minimum</th>
<th>Range_Domain_Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>212000001</td>
<td>212001295</td>
</tr>
</tbody>
</table>
Attribute:
  Attribute_Label: SPECIES_ID
  Attribute_Definition: Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI species list maintained at NOAA.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum: 1
      Range_Domain_Maximum: N

Attribute:
  Attribute_Label: CONC
  Attribute_Definition: The field CONC refers to "concentration," abundance, or density values of a species at a particular location. In cases where no quantitative count data was available, the field may contain descriptive terms such as "COMMON", "OCCASIONAL", "POSSIBLE", OR "UNCOMMON". If no concentration information was available from any source, the field was populated with ".-".
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:
  Attribute_Label: SEASON_ID
  Attribute_Definition: Numeric identifier for the unique monthly presence and life history characteristics of each species at a given location.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum: 1
      Range_Domain_Maximum: N

Attribute:
  Attribute_Label: G_SOURCE
  Attribute_Definition: Geographic source identifier that links records in the BIORES data table to records in the SOURCES data table.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum: 1
      Range_Domain_Maximum: N

Attribute:
  Attribute_Label: S_SOURCE
  Attribute_Definition: Seasonality source identifier that links records in the BIORES data table to records in the SOURCES data table.
  Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute Domain Values:
  Range Domain:
    Range Domain Minimum: 1
    Range Domain Maximum: N

Attribute:
  Attribute Label: ELEMENT
  Attribute Definition: Major categories of biological data.
  Attribute Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value:
      BIRD
    Enumerated Domain Value Definition:
      Birds
    Enumerated Domain Value Definition Source:
      NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value:
      FISH
    Enumerated Domain Value Definition:
      Fish
    Enumerated Domain Value Definition Source:
      NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value:
      HABITAT
    Enumerated Domain Value Definition:
      Habitats and plants
    Enumerated Domain Value Definition Source:
      NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value:
      INVERT
    Enumerated Domain Value Definition:
      Invertebrates
    Enumerated Domain Value Definition Source:
      NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value:
      M_MAMMAL
    Enumerated Domain Value Definition:
      Marine mammals
    Enumerated Domain Value Definition Source:
      NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value:
      REPTILE
    Enumerated Domain Value Definition:
      Reptiles and Amphibians
**Enumerated_Domain_Value_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**
T_MAMMAL

**Enumerated_Domain_Value_Definition:**
Terrestrial mammals

**Enumerated_Domain_Value_Definition_Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute_Label:**
EL_SPE

**Attribute_Definition:**
Concatenation of ELEMENT and SPECIES_ID. This item links records in the BIORES data table to records in the SPECIES and STATUS data tables.

**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**
E#####

**Enumerated_Domain_Value_Definition:**
Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1; EL_SPE = 'B00001').

**Enumerated_Domain_Value_Definition_Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute_Label:**
EL_SPE_SEA

**Attribute_Definition:**
Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the BIORES data table to records in the SEASONAL and BREED data tables.

**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**
E########

**Enumerated_Domain_Value_Definition:**
Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').

**Enumerated_Domain_Value_Definition_Source:**
NOAA ESI Guidelines

**Detailed_Description:**

**Entity_Type:**

**Entity_Type_Label:**
SPECIES

**Entity_Type_Definition:**
The data table SPECIES identifies all species in the ESI data set. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure. Refer to the Completeness Report for list of layer specific species.

**Entity_Type_Definition_Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute_Label:**
SPECIES_ID

**Attribute_Definition:**
Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI
species list maintained at NOAA.

**Attribute**

**Attribute Label:** NAME

**Definition:** Species common name for the entire ESI data set.

**Source:** NOAA ESI Guidelines

**Value Domain:** Unrepresentable

Acceptable values change from atlas to atlas.

**Attribute**

**Attribute Label:** GEN_SPEC

**Definition:** Species scientific name for the entire ESI data set.

**Source:** NOAA ESI Guidelines

**Value Domain:** Unrepresentable

Acceptable values change from atlas to atlas.

**Attribute**

**Attribute Label:** ELEMENT

**Definition:** Major categories of biological data.

**Source:** NOAA ESI Guidelines

**Value Domain:**

- **BIRD**
  - **Definition:** Birds
  - **Source:** NOAA ESI Guidelines

- **FISH**
  - **Definition:** Fish
  - **Source:** NOAA ESI Guidelines

- **HABITAT**
  - **Definition:** Habitats and plants
  - **Source:** NOAA ESI Guidelines
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      INVERT
    Enumerated_Domain_Value_Definition:
      Invertebrates
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines
  Enumerated_Domain:
    Enumerated_Domain_Value:
      M_MAMMAL
    Enumerated_Domain_Value_Definition:
      Marine Mammals
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines
  Enumerated_Domain:
    Enumerated_Domain_Value:
      REPTILE
    Enumerated_Domain_Value_Definition:
      Reptiles and Amphibians
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines
  Enumerated_Domain:
    Enumerated_Domain_Value:
      T_MAMMAL
    Enumerated_Domain_Value_Definition:
      Terrestrial Mammals
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute:
  Attribute_Label:
    SUBELEMENT
  Attribute_Definition:
    Element subgroup delineating a logical grouping of species.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        alcid
      Enumerated_Domain_Value_Definition:
        Alcid
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        amphibian
      Enumerated_Domain_Value_Definition:
        Amphibian
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        bivalve
      Enumerated_Domain_Value_Definition:
Bivalve

\textit{Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines}

\textit{Attribute\_Domain\_Values:}

\textit{Enumerated\_Domain:}

\textit{Enumerated\_Domain\_Value: cephalopod}

\textit{Enumerated\_Domain\_Value\_Definition: Cephalopod}

\textit{Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines}

\textit{Attribute\_Domain\_Values:}

\textit{Enumerated\_Domain:}

\textit{Enumerated\_Domain\_Value: crab}

\textit{Enumerated\_Domain\_Value\_Definition: Crab}

\textit{Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines}

\textit{Attribute\_Domain\_Values:}

\textit{Enumerated\_Domain:}

\textit{Enumerated\_Domain\_Value: diadromous}

\textit{Enumerated\_Domain\_Value\_Definition: Diadromous fish}

\textit{Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines}

\textit{Attribute\_Domain\_Values:}

\textit{Enumerated\_Domain:}

\textit{Enumerated\_Domain\_Value: diving}

\textit{Enumerated\_Domain\_Value\_Definition: Diving bird}

\textit{Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines}

\textit{Attribute\_Domain\_Values:}

\textit{Enumerated\_Domain:}

\textit{Enumerated\_Domain\_Value: dolphin}

\textit{Enumerated\_Domain\_Value\_Definition: Dolphin}

\textit{Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines}

\textit{Attribute\_Domain\_Values:}

\textit{Enumerated\_Domain:}

\textit{Enumerated\_Domain\_Value: e_nursery}

\textit{Enumerated\_Domain\_Value\_Definition: Estuarine nursery fish}

\textit{Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines}

\textit{Attribute\_Domain\_Values:}

\textit{Enumerated\_Domain:}

\textit{Enumerated\_Domain\_Value: fish}

\textit{Enumerated\_Domain\_Value\_Definition: Fish}

\textit{Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines}

\textit{Attribute\_Domain\_Values:}
Enumerated_Domain:
  Enumerated_Domain_Value:
    freshwater
  Enumerated_Domain_Value_Definition:
    Freshwater fish
  Enumerated_Domain_Value_Definition_Source:
    NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      gastropod
    Enumerated_Domain_Value_Definition:
      Gastropod
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      gull_tern
    Enumerated_Domain_Value_Definition:
      Gull or tern
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      insect
    Enumerated_Domain_Value_Definition:
      Insect
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      invert
    Enumerated_Domain_Value_Definition:
      Invertebrate
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      lobster
    Enumerated_Domain_Value_Definition:
      Lobster
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      m_benthic
    Enumerated_Domain_Value_Definition:
      Marine benthic fish
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      m_pelagic
    Enumerated_Domain_Value_Definition:
Marine pelagic fish

*Enumerated_Domain_Value_Definition_Source:* NOAA ESI Guidelines

**Attribute_Domain_Values:**

*Enumerated_Domain:*

*Enumerated_Domain_Value:*

- passerine

*Enumerated_Domain_Value_Definition:*

Passerine bird

*Enumerated_Domain_Value_Definition_Source:* NOAA ESI Guidelines

**Attribute_Domain_Values:**

*Enumerated_Domain:*

*Enumerated_Domain_Value:*

- pelagic

*Enumerated_Domain_Value_Definition:*

Pelagic bird

*Enumerated_Domain_Value_Definition_Source:* NOAA ESI Guidelines

**Attribute_Domain_Values:**

*Enumerated_Domain:*

*Enumerated_Domain_Value:*

- pinniped

*Enumerated_Domain_Value_Definition:*

Pinniped

*Enumerated_Domain_Value_Definition_Source:* NOAA ESI Guidelines

**Attribute_Domain_Values:**

*Enumerated_Domain:*

*Enumerated_Domain_Value:*

- plant

*Enumerated_Domain_Value_Definition:*

Plant

*Enumerated_Domain_Value_Definition_Source:* NOAA ESI Guidelines

**Attribute_Domain_Values:**

*Enumerated_Domain:*

*Enumerated_Domain_Value:*

- raptor

*Enumerated_Domain_Value_Definition:*

Raptor

*Enumerated_Domain_Value_Definition_Source:* NOAA ESI Guidelines

**Attribute_Domain_Values:**

*Enumerated_Domain:*

*Enumerated_Domain_Value:*

- sav

*Enumerated_Domain_Value_Definition:*

Submerged aquatic vegetation

*Enumerated_Domain_Value_Definition_Source:* NOAA ESI Guidelines

**Attribute_Domain_Values:**

*Enumerated_Domain:*

*Enumerated_Domain_Value:*

- shorebird

*Enumerated_Domain_Value_Definition:*

Shorebird

*Enumerated_Domain_Value_Definition_Source:* NOAA ESI Guidelines
Enumerated_Domain:
    Enumerated_Domain_Value:
        sm_mammal
Enumerated_Domain_Value_Definition:
    Small mammal
Enumerated_Domain_Value_Definition_Source:
    NOAA ESI Guidelines

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value:
            snake
        Enumerated_Domain_Value_Definition:
            Snake
        Enumerated_Domain_Value_Definition_Source:
            NOAA ESI Guidelines

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value:
            turtle
        Enumerated_Domain_Value_Definition:
            Turtle
        Enumerated_Domain_Value_Definition_Source:
            NOAA ESI Guidelines

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value:
            wading
        Enumerated_Domain_Value_Definition:
            Wading bird
        Enumerated_Domain_Value_Definition_Source:
            NOAA ESI Guidelines

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value:
            waterfowl
        Enumerated_Domain_Value_Definition:
            Waterfowl
        Enumerated_Domain_Value_Definition_Source:
            NOAA ESI Guidelines

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value:
            wetland
        Enumerated_Domain_Value_Definition:
            Wetland
        Enumerated_Domain_Value_Definition_Source:
            NOAA ESI Guidelines

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value:
            whale
        Enumerated_Domain_Value_Definition:
            Whale
        Enumerated_Domain_Value_Definition_Source:
            NOAA ESI Guidelines

Attribute:
    Attribute_Label:
        NHP
    Attribute_Definition:
        Natural Heritage Program global ranking.
**Attribute Definition Source:**
Network of Natural Heritage Program

**Attribute Domain Values:**

**Codeset Domain:**

**Codeset Name:**
NHP Global Conservation Status Rank

**Codeset Source:**
Natural Heritage Program

**Attribute:**

**Attribute Label:**
DATE_PUB

**Attribute Definition:**
Date of NHP listing.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**
YYYYMM

**Enumerated Domain Value Definition:**
YYYY for year and optionally MM for month

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**
0

**Enumerated Domain Value Definition:**
Date unspecified

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute Label:**
EL_SPE

**Attribute Definition:**
Concatenation of ELEMENT and SPECIES_ID. This item links records in the SPECIES data table to records in the BIORES and STATUS data tables.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**
E#####

**Enumerated Domain Value Definition:**
Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1; EL_SPE = 'B00001').

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Detailed Description:**

**Entity Type:**

**Entity Type Label:**
SEASONAL

**Entity Type Definition:**
The data table SEASONAL contains information on the seasonal presence of each species associated with each spatial vector object. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

**Entity Type Definition Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute Label:**
ELEMENT
Attribute_Definition:
Major categories of biological data.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
    BIRD
    Enumerated_Domain_Value_Definition:
      Birds
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
    FISH
    Enumerated_Domain_Value_Definition:
      Fish
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
    HABITAT
    Enumerated_Domain_Value_Definition:
      Habitats and plants
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
    INVERT
    Enumerated_Domain_Value_Definition:
      Invertebrates
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
    M_MAMMAL
    Enumerated_Domain_Value_Definition:
      Marine Mammals
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
    REPTILE
    Enumerated_Domain_Value_Definition:
      Reptiles and Amphibians
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
    T_MAMMAL
    Enumerated_Domain_Value_Definition:
      Terrestrial Mammals
    Enumerated_Domain_Value_Definition_Source:
### SPECIES_ID
- **Attribute Label:** SPECIES_ID
- **Attribute Definition:** Numeric identifier for each species that is unique within each element and refers to a nationwide ESI species list maintained at NOAA.
- **Attribute Definition Source:** NOAA ESI Guidelines
- **Attribute Domain Values:**
  - **Range Domain:**
    - **Range Domain Minimum:** 1
    - **Range Domain Maximum:** N

### SEASON_ID
- **Attribute Label:** SEASON_ID
- **Attribute Definition:** Numeric identifier for the unique monthly presence and life history characteristics of each species at a given location.
- **Attribute Definition Source:** NOAA ESI Guidelines
- **Attribute Domain Values:**
  - **Range Domain:**
    - **Range Domain Minimum:** 1
    - **Range Domain Maximum:** N

### JAN
- **Attribute Label:** JAN
- **Attribute Definition:** January
- **Attribute Definition Source:** NOAA ESI Guidelines
- **Attribute Domain Values:**
  - **Enumerated Domain:**
    - **Enumerated Domain Value:** X
    - **Enumerated Domain Value Definition:** Present in January
    - **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

### FEB
- **Attribute Label:** FEB
- **Attribute Definition:** February
- **Attribute Definition Source:** NOAA ESI Guidelines
- **Attribute Domain Values:**
  - **Enumerated Domain:**
    - **Enumerated Domain Value:** X
    - **Enumerated Domain Value Definition:** Present in February
    - **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines
Attribute Label: MAR
Attribute Definition: March
Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
    Enumerated Domain Value: X
    Enumerated Domain Value Definition: Present in March
    Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Label: APR
Attribute Definition: April
Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
    Enumerated Domain Value: X
    Enumerated Domain Value Definition: Present in April
    Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Label: MAY
Attribute Definition: May
Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
    Enumerated Domain Value: X
    Enumerated Domain Value Definition: Present in May
    Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Label: JUN
Attribute Definition: June
Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
    Enumerated Domain Value: X
    Enumerated Domain Value Definition: Present in June
    Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute:
Attribute: JUL
Attribute_Label: JUL
Attribute_Definition: July
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values: 
Enumerated_Domain: 
Enumerated_Domain_Value: X
Enumerated_Domain_Value_Definition: Present in July
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute: AUG
Attribute_Label: AUG
Attribute_Definition: August
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values: 
Enumerated_Domain: 
Enumerated_Domain_Value: X
Enumerated_Domain_Value_Definition: Present in August
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute: SEP
Attribute_Label: SEP
Attribute_Definition: September
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values: 
Enumerated_Domain: 
Enumerated_Domain_Value: X
Enumerated_Domain_Value_Definition: Present in September
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute: OCT
Attribute_Label: OCT
Attribute_Definition: October
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values: 
Enumerated_Domain: 
Enumerated_Domain_Value: X
Enumerated_Domain_Value_Definition: Present in October
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute: **NOV**

**Attribute Label:** NOV

**Attribute Definition:** November

**Attribute Definition Source:** NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**

X

**Enumerated Domain Value Definition:** Present in November

**Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

Attribute: **DEC**

**Attribute Label:** DEC

**Attribute Definition:** December

**Attribute Definition Source:** NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**

X

**Enumerated Domain Value Definition:** Present in December

**Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

Attribute: **EL_SPE_SEA**

**Attribute Label:** EL_SPE_SEA

**Attribute Definition:** Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the SEASONAL data table to records in the BIORES and BREED data tables.

**Attribute Definition Source:** NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**

E#####

**Enumerated Domain Value Definition:**

Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').

**Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

Detailed Description:

**Entity Type:**

**Entity Type Label:** BREED

**Entity Type Definition:**

The data table BREED identifies the monthly presence of certain life-history stages or activities for each species at a given location.

**Entity Type Definition Source:** NOAA ESI Guidelines

Attribute: **EL_SPE_SEA**

**Attribute Label:** EL_SPE_SEA

**Attribute Definition:**


Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the BREED data table to records in the BIORES and SEASONAL data tables.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
   Enumerated Domain Value:
      E########
   Enumerated Domain Value Definition:
      Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').

Attribute Domain Values Source:
NOAA ESI Guidelines

Attribute:

Attribute Label:
MONTH

Attribute Definition:
      Two-digit calendar month. Each life history stage or activity type for a particular species can have up to 12 records to account for each month of the year.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Range Domain:
   Range Domain Minimum:
      1
   Range Domain Maximum:
      12

Attribute:

Attribute Label:
BREED1

Attribute Definition:
      Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED1 = nesting; if ELEMENT is "FISH" then BREED1 = spawning; if ELEMENT is "INVERT" then BREED1 = spawning; if ELEMENT is "REPTILE" then BREED1 = nesting; if ELEMENT is "M_MAMMAL" then BREED1 = mating. This attribute is not used for HABITAT or T_MAMMAL.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
   Enumerated Domain Value:
      Y
   Enumerated Domain Value Definition:
      Life-history stage or activity present
   Enumerated Domain Value Definition Source:
      NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
   Enumerated Domain Value:
      N
   Enumerated Domain Value Definition:
      Life-history stage or activity not present or not reported
   Enumerated Domain Value Definition Source:
      NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
   Enumerated Domain Value:
      -
   Enumerated Domain Value Definition:
      Breed category not used or not appropriate for record(s) in question
**Attribute:**

**Attribute_Label:**

BREED2

**Attribute_Definition:**

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED2 = migrating; if ELEMENT is "FISH" then BREED2 = eggs; if ELEMENT is "INVERT" then BREED2 = eggs; if ELEMENT is "REPTILE" then BREED2 = hatching; if ELEMENT is "M_MAMMAL" then BREED2 = calving. This attribute is not used for HABITAT or T_MAMMAL elements.

**Attribute_Definition_Source:**

NOAA ESI Guidelines

**Attribute_Domain_Values:**

Enumerated_Domain:

Enumerated_Domain_Value:

Y

Enumerated_Domain_Value_Definition:

Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source:

NOAA ESI Guidelines

Enumerated_Domain_Value:

N

Enumerated_Domain_Value_Definition:

Life-history stage or activity not present or not reported

Enumerated_Domain_Value_Definition_Source:

NOAA ESI Guidelines

Enumerated_Domain_Value:

-

Enumerated_Domain_Value_Definition:

Breed category not used or not appropriate for record(s) in question

Enumerated_Domain_Value_Definition_Source:

NOAA ESI Guidelines

**Attribute:**

**Attribute_Label:**

BREED3

**Attribute_Definition:**

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED3 = molting; if ELEMENT is "FISH" then BREED3 = larvae; if ELEMENT is "INVERT" then BREED3 = larvae; if ELEMENT is "REPTILE" then BREED3 = internesting; if ELEMENT is "M_MAMMAL" then BREED3 = pupping. This attribute is not used for HABITAT or T_MAMMAL elements.

**Attribute_Definition_Source:**

NOAA ESI Guidelines

**Attribute_Domain_Values:**

Enumerated_Domain:

Enumerated_Domain_Value:

Y

Enumerated_Domain_Value_Definition:

Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source:

NOAA ESI Guidelines

Enumerated_Domain_Value:

N

Enumerated_Domain_Value_Definition:

Life-history stage or activity not present or not reported

Enumerated_Domain_Value_Definition_Source:

NOAA ESI Guidelines
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
- 

Enumerated Domain Value Definition:
Breed category not used or not appropriate for record(s) in question

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute:
Attribute Label:
BREED4

Attribute Definition:
Life history stage or activity type, where: if ELEMENT is "FISH" then BREED4 = juveniles; if ELEMENT is "INVERT" then BREED4 = juveniles; if ELEMENT is "REPTILE" then BREED4 = juveniles; if ELEMENT is "M_MAMMAL," then BREED4 = molting. This attribute is not used for BIRD, HABITAT, or T_MAMMAL elements.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
Y

Enumerated Domain Value Definition:
Life-history stage or activity present

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
N

Enumerated Domain Value Definition:
Life-history stage or activity not present or not reported

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
- 

Enumerated Domain Value Definition:
Breed category not used or not appropriate for record(s) in question

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute:
Attribute Label:
BREED5

Attribute Definition:
Life history stage or activity type, where: if ELEMENT is "FISH" then BREED5 = adults; if ELEMENT is "INVERT" then BREED5 = adults; if ELEMENT is "REPTILE" then BREED5 = adults. This attribute is not used for BIRD, M_MAMMAL, HABITAT or T_MAMMAL elements.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
Y

Enumerated Domain Value Definition:
Life-history stage or activity present

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**

N

**Enumerated Domain Value Definition:**
Life-history stage or activity not present or not reported

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**

-

**Enumerated Domain Value Definition:**
Breed category not used or not appropriate for record(s) in question

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Detailed Description:**

**Entity Type:**

**Entity Type Label:**
STATUS

**Entity Type Definition:**
The data table STATUS identifies the species that are listed as either threatened or endangered by a state, federal, or international authority. See the Browse Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

**Entity Type Definition Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute Label:**
ELEMENT

**Attribute Definition:**
Major categories of biological data.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**

BIRD

**Enumerated Domain Value Definition:**
Birds

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**

FISH

**Enumerated Domain Value Definition:**
Fish

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**

HABITAT

**Enumerated Domain Value Definition:**
Habitats and Plants

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**
Enumerated Domain Value:
INVERT

Enumerated Domain Value Definition:
Invertebrates

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
M_MAMMAL

Enumerated Domain Value Definition:
Marine Mammals

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
REPTILE

Enumerated Domain Value Definition:
Reptiles and Amphibians

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
T_MAMMAL

Enumerated Domain Value Definition:
Terrestrial Mammals

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute:
Attribute Label: SPECIES_ID
Attribute Definition:
Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI species list maintained at NOAA.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Range Domain:
Range Domain Minimum:
1

Range Domain Maximum:
N

Attribute:
Attribute Label: STATE
Attribute Definition:
Two-letter state abbreviation.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Unrepresentable Domain:
Acceptable values change from atlas to atlas.

Attribute:
Attribute Label: COUNTRY
Attribute Definition:
Three-letter country abbreviation.

Attribute Definition Source:
Attribute Domain Values:
  Unrepresentable Domain:
    Acceptable values change from atlas to atlas.

Attribute:
  Attribute_Label: S
  Attribute_Definition: State threatened or endangered status.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        E
      Enumerated_Domain_Value_Definition:
        Endangered on state list
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
    Enumerated_Domain:
      Enumerated_Domain_Value:
        T
      Enumerated_Domain_Value_Definition:
        Threatened on state list
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
    Enumerated_Domain:
      Enumerated_Domain_Value:
        C
      Enumerated_Domain_Value_Definition:
        Species of Special Concern
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: F
  Attribute_Definition: Federal threatened or endangered status.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        E
      Enumerated_Domain_Value_Definition:
        Endangered on federal list
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
    Enumerated_Domain:
      Enumerated_Domain_Value:
        T
      Enumerated_Domain_Value_Definition:
        Threatened on federal list
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: 
Enumerated Domain Value: C
Enumerated Domain Value Definition: Species of Special Concern
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute: Attribute Label: S_DATE
    Attribute Definition: Publication date of source material used to assign state status values for each species, if used.
    Attribute Definition Source: NOAA ESI Guidelines
    Attribute Domain Values:
    Enumerated Domain:
        Enumerated Domain Value: YYYYMM
        Enumerated Domain Value Definition: YYYY for year and optionally MM for month
        Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute: Attribute Label: F_DATE
    Attribute Definition: Publication date of source material used to assign federal status values for each species, if used.
    Attribute Definition Source: NOAA ESI Guidelines
    Attribute Domain Values:

Enumerated_Domain:

Enumerated_Domain_Value:

YYYYMM

Enumerated_Domain_Value_Definition:

YYYY for year and optionally MM for month

Enumerated_Domain_Value_Definition_Source:

NOAA ESI Guidelines

Attribute:

Attribute_Label:

I_DATE

Attribute_Definition:

Publication date of source material used to assign international status values for each species, if used.

Attribute_Definition_Source:

NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

YYYYMM

Enumerated_Domain_Value_Definition:

YYYY for year and optionally MM for month

Enumerated_Domain_Value_Definition_Source:

NOAA ESI Guidelines

Attribute:

Attribute_Label:

EL_SPE

Attribute_Definition:

Concatenation of ELEMENT and SPECIES_ID. This item links the STATUS data table to the BIORES and SPECIES data tables.

Attribute_Definition_Source:

NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

E####

Enumerated_Domain_Value_Definition:

Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1; EL_SPE = 'B00001').

Enumerated_Domain_Value_Definition_Source:

NOAA ESI Guidelines

Detailed_Description:

Entity_Type:

Entity_Type_Label:

SOURCES

Entity_Type_Definition:

The data table SOURCES contains the primary sources used to create the ESI data set. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

Entity_Type_Definition_Source:

NOAA ESI Guidelines

Attribute:

Attribute_Label:

SOURCE_ID

Attribute_Definition:

Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; SOURCE_ID and ESI_SOURCE in the ESIL and ESIP data layers; and SOURCE_ID in the HYDRO data layer.

Attribute_Definition_Source:

NOAA ESI Guidelines

Attribute_Domain_Values:

Range_Domain:
Range_DOMAIN_Minimum:
1
Range_DOMAIN_Maximum:
N
Attribute:
  Attribute_Label:
  ORIGINATOR
  Attribute_Definition:
  Author or developer of source material or data set.
  Attribute_Definition_Source:
  NOAA ESI Guidelines
  Attribute_Domain_Values:
  Unrepresentable_Domain:
    Acceptable values change from atlas to atlas.

Attribute:
  Attribute_Label:
  DATE_PUB
  Attribute_Definition:
  Date of source material, publication, or date of personal communication with expert source.
  Attribute_Definition_Source:
  NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        YYYYMM
      Enumerated_Domain_Value_Definition:
        YYYY for year and optionally MM for month
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines

Attribute:
  Attribute_Label:
  TITLE
  Attribute_Definition:
  Title of source material or data.
  Attribute_Definition_Source:
  NOAA ESI Guidelines
  Attribute_Domain_Values:
  Unrepresentable_Domain:
    Acceptable values change from atlas to atlas.

Attribute:
  Attribute_Label:
  DATA_FORMAT
  Attribute_Definition:
  The format of the source material.
  Attribute_Definition_Source:
  NOAA ESI Guidelines
  Attribute_Domain_Values:
  Unrepresentable_Domain:
    Acceptable values change from atlas to atlas.

Attribute:
  Attribute_Label:
  PUB_PLACE
  Attribute_Definition:
  Publication place.
  Attribute_Definition_Source:
  NOAA ESI Guidelines
  Attribute_Domain_Values:
  Unrepresentable_Domain:
    Acceptable values change from atlas to atlas.
In addition to the geographic data layers, six relational attribute or data tables (BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS) are used to store the complex biological data in the ESI data structure. The geographic data layer containing biological resource information (in this case, REPTILES) is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or it can be linked directly using RARNUM. The ID is a unique combination of the atlas number (for the Delaware/New Jersey/Pennsylvania atlas, the number is 212), an element/layer specific number (BIRDS are layer 1, FISH are layer 2, etc.), and a unique record number. The RARNUM represents a unique combination of species, seasonalities, concentrations, and source information. For each of these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases. BIORES and the other relational data tables are
described in detail. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way these tables relate to the geographic data layers and other attribute tables in the ESI data structure. Due to the complexity of the relational database model, the data items are also post-processed into a flat file format. This table, called BIOFILE, may be used in place of the relational files to ease simple data queries. The items in the flat file are ELEMENT, SUBELEMENT, NAME, GEN_SPEC, S, F, NHP, DATE_PUB, CONC, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC, BREED1, BREED2, BREED3, BREED4, BREED5, RARNUM, G_SOURCE, S_SOURCE, and BREED. All of these items are the same as their counterparts in the individual data tables, except the BREED1-BREED5 and BREED items. BREED is a newly generated variable used to link to the BREED_DT data table, a modified, more compact version of the relational BREED data table. BREED1-BREED5 give a text summary of when each life stage occurs within the associated map object. The life stages referred to are the same as those listed in the Detailed_Description of the BREED data table. The link to the BIOFILE may be made through the BIO_LUT, using ID to link to RARNUM, or BIOFILE may be linked directly to the RARNUM in each of the geographic layer's attribute data tables. As mentioned, BREED_DT is an auxiliary support data table to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item. A second supporting data table is SOURCES. This is the same as the source file described above, and the link from the flat file is both G_SOURCE and S_SOURCE. It should be noted that although the flat file eases data query, it is not a normalized database structure, and actual updates performed by the states and other responsible agencies should be done using the relational data tables. The entity-relationship diagram describing relationships between attribute tables in the ESI data structure does NOT include the BIOFILE data table, and this data table is NOT described in detail.

Entity_and_Attribute_Detail_Citation:
A complete description of entity types, attributes, and attribute values for ESI atlases can be found in the NOAA ESI Guidelines (http://response.restoration.noaa.gov/esi_guidelines).

Distribution_Information:
Distributor:

Contact Information:
Contact Person Primary:
Contact Person:
ESI Manager
Contact Organization:
NOAA, Office of Response and Restoration
Contact Address:
Address Type:
Physical Address
Address:
7600 Sand Point Way N.E.
City:
Seattle
State or Province:
Washington
Postal Code:
98115-6349
Contact Voice Telephone:
(206) 526-6944
Contact Facsimile Telephone:
(206) 526-6329
Contact Electronic Mail Address:
orr.esi@noaa.gov

Resource Description:
Downloadable Data

Distribution Liability:
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format. If problems are encountered either in downloading the ESI data or if any file appears corrupted, please contact the ESI manager.
Custom Order Process:
Contact NOAA if you require the data be provided to you on CD/DVD. (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export files, Shapefiles, and a file Geodatabase (the recommended format). The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

Metadata Reference Information:
Metadata Date: 201403
Metadata Contact:
Contact Information:
Contact Person Primary:
Contact Person:
ESI Manager
Contact Organization:
NOAA, Office of Response and Restoration
Contact Position:
GIS Manager
Contact Address:
Address Type:
Physical Address
Address:
7600 Sand Point Way, N.E.
City:
Seattle
State or Province:
Washington
Postal Code:
98115-6349
Contact Voice Telephone:
(206) 526-6944
Contact Facsimile Telephone:
(206) 526-6329
Contact Electronic Mail Address:
orr.esi@noaa.gov
Metadata Standard Name:
Content Standards for Digital Geospatial Metadata
Metadata Standard Version:
FGDC-STD-001-1998
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: M_MAMMAL (Marine Mammal Polygons)

Metadata:

- Identification_Information
- Data_Quality_Information
- Spatial_Data_Organization_Information
- Spatial_Reference_Information
- Entity_and_Attribute_Information
- Distribution_Information
- Metadata_Reference_Information

Identification_Information:

Citation:

Citation_Information:

Originator:


Originator:

Department of Homeland Security, United States Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.

Publication_Date:

201403

Title:

Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: M_MAMMAL (Marine Mammal Polygons)

Edition:

Second

Geospatial_Data_Presentation_Form:

vector digital data

Series_Information:

Series_Name:

None

Issue_Identification:

Delaware/New Jersey/Pennsylvania

Publication_Information:

Publication_Place:

Seattle, Washington

Publisher:

NOAA's Ocean Service, Office of Response and Restoration (OR&R), Emergency Response Division (ERD).

Other_Citation_Details:


Online_Linkage:

http://response.restoration.noaa.gov/esi

Online_Linkage:

http://response.restoration.noaa.gov/esi_download

Online_Linkage:

http://response.restoration.noaa.gov/esi_guidelines

Description:

Abstract:
This data set contains sensitive biological resource data for seals, whales, dolphins, and porpoises in Delaware/New Jersey/Pennsylvania. Vector polygons in this data set represent marine mammal distribution, and haul-out sites. Species specific abundance, seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer. This data set comprises a portion of the ESI data for Delaware/New Jersey/Pennsylvania. 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.

**Purpose:**
The ESI data were collected, mapped, and digitized to provide environmental data for oil spill planning and response. The Clean Water Act with amendments by the Oil Pollution Act of 1990 requires response plans for immediate and effective protection of sensitive resources.

**Time_Period_of_Content:**
**Time_Period_Information:**
**Range_of_Dates/Times:**
**Beginning_Date:**
2008

**Ending_Date:**
2014

**Currentness_Reference:**
The data were compiled during 2013-2014. The currentness dates for the data range from 2008 to 2014 and are documented in the Lineage section.

**Status:**
**Progress:**
Complete

**Maintenance_and_Update_Frequency:**
None Scheduled

**Spatial_Domain:**
**Bounding_Coordinates:**
**West_BoundingCoordinate:**
-75.75000

**East_BoundingCoordinate:**
-74.03800

**North_BoundingCoordinate:**
40.23700

**South_BoundingCoordinate:**
38.37500

**Keywords:**
**Theme:**
**Theme_Keyword_Thesaurus:**
ISO 19115 Topic Category

**Theme_Keyword:**
biota

**Theme_Keyword:**
environment

**Theme:**
**Theme_Keyword_Thesaurus:**
None

**Theme_Keyword:**
Environmental Monitoring

**Theme_Keyword:**
ESI

**Theme_Keyword:**
Sensitivity maps

**Theme_Keyword:**
Coastal resources

**Theme_Keyword:**
Oil spill planning

**Theme_Keyword:**
Coastal Zone Management

**Theme_Keyword:**
Wildlife

Theme_Keyword:
Marine Mammal

Theme:

Theme_Keyword_Thesaurus:
NOS Data Explorer Topic Category

Theme_Keyword:
Environmental Monitoring

Place:

Place_Keyword_Thesaurus:
None

Place_Keyword:
Delaware/New Jersey/Pennsylvania

Access_Constraints:
None

Use_Constraints:
DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Management boundaries are not to be considered legal boundaries. Edges may have been altered for cartographic processes. Besides the above warnings, there are no use constraints on these data. Note that the ESI database should not be used to the exclusion of other pertinent data or information held by state or federal agencies or other organizations. Likewise, information contained in the database cannot be used in place of consultations with environmental, natural resource, and cultural resource agencies, or in place of field surveys. Recognize that the information contained in the ESI database represents known concentration areas or occurrences of natural, cultural, and human-use resources, but does not necessarily represent the full distribution or range of each species or resource. This is particularly important to recognize when considering potential impacts to protected resources, such as endangered species, wetlands, etc. Acknowledgment of the originators, publishers, contributors, and sources listed would be appreciated in products derived from these data.

Browse_Graphic:

Browse_Graphic_File_Name:

Browse_Graphic_File_Description:
Depicts the relationships between spatial data layers and attribute data tables for the Delaware/New Jersey/Pennsylvania ESI data.

Browse_Graphic_File_Type:
JPEG

Browse_Graphic:

Browse_Graphic_File_Name:

Browse_Graphic_File_Description:
Depicts the relationships between spatial data layers and desktop data tables for the Delaware/New Jersey/Pennsylvania ESI data.

Browse_Graphic_File_Type:
JPEG

Data_Set_Credit:
This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Office of Response and Restoration (OR&R), Emergency Response Division (ERD), Seattle, Washington; and The Department of Homeland Security, United States Coast Guard Office of Incident Management and Preparedness, Washington, D.C.

Native_Data_Set_Environment:
The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(R) (version 10.2) and SQL SERVER(R) (version 2005). The hardware configuration is PCs with Windows Operating System 7. The Spatial_Data_Organization Information section refers only to the source files in the ARC export format. The following files are included in the data set: benthic.e00, birds.e00, esil.e00, esip.e00, fish.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, soccon.e00, and t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut.e00, biofile.e00, biore.e00, breed.e00, breed_dt.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, sources.e00, species.e00, and status.e00.
**Attribute_Accuracy:**

**Attribute_Accuracy_Report:**

A multi-stage error checking process is used to verify both attribute accuracy and logical consistency throughout data production. The process includes a standardized data entry methodology, hardcopy data review by in-house and external resource experts, a final Quality Assurance/Quality Control (QA/QC) process, and multiple automated logical consistency checks. Quantitative data (such as densities, counts, abundances, or concentrations) provided by resource experts for inclusion in the data set may vary widely in attribute accuracy, depending upon the methodology used to collect and compile such data. For a more detailed evaluation of source data attribute accuracy, contact the sources listed in the Lineage section.

**Logical_Consistency_Report:**

A multi-stage error checking process, described in the above Attribute_Accuracy_Report, is used to verify both attribute accuracy and logical consistency throughout data production. This process includes multiple automated logical consistency checks that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and SQL SERVER(R) to ARC/INFO(R) consistencies. After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks. In the process of checking for topological and database consistencies, new ID's and RARNUM's or HUNUM's are also generated. The new ID's are a combination of atlas number, element number, and record number. In addition, the value used to represent the element is modified to reflect the type of feature being mapped. In the case of an element that is normally represented by a point or polygon, a value of 20 is added to the standard element value for mapping of linear features. In the case where an element usually mapped as a polygon is represented by a point, a value of 30 is added to the regular element value. The RARNUM's are also modified to include the atlas number, so multiple atlases can be combined and RARNUM's remain unique. RARNUM's are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUM's are also modified to include the atlas number.

**Completeness_Report:**

These data represent a synthesis of expert knowledge, available hardcopy documents, survey data, maps, and digital data on marine mammal distribution and haul-out sites. These data do not necessarily represent all marine mammal occurrences in Delaware/New Jersey/Pennsylvania. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 2, Harbor seal, Phoca vitulina; 6, Harbor porpoise, Phocoena phocoena; 11, Fin whale, Balaenoptera physalus; 13, Humpback whale, Megaptera novaangliae; 14, Gray seal, Halichoerus Grypus; 17, Bottlenose dolphin, Tursiops truncatus; 60, Short-beaked common dolphin, Delphinus delphis; 81, North Atlantic right whale, Eubalaena glacialis; 84, Hooded seal, Cystophora cristata; 85, Harp seal, Pagophilus groenlandicus; 100, Striped dolphin, Stenella coeruleoalba.

**Positional_Accuracy:**

**Horizontal_Positional_Accuracy:**

Spatial components for the biological data layers can come from expert interviews, hardcopy, or digital sources. Some of the spatial components of the biological data layers may have been developed using regional experts who estimate concentration areas. It is difficult to estimate the positional accuracy of such data, except to state that they are compiled on hardcopy base maps with a scale of 1:45,000. Some of the spatial components of the biological data sets are developed from pre-existing digital or hardcopy sources and reflect the positional accuracy of these original data. Note that biological resource data by their very nature are considered "fuzzy", and this should be understood when considering the positional accuracy of vector digital objects representing these resources. See the Lineage and Process_Description sections for more information on the original source data and how these data were integrated or manipulated to create the final data set.

**Lineage:**

**Source_Information:**

**Source_Citation:**

**Citation_Information:**

**Originator:**

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND CONTROL (DNREC) - EDNA STETZAR

**Publication_Date:**

2013

**Title:**

MARINE MAMMAL AND SEA TURTLE DISTRIBUTION AND SEASONALITY IN THE DELAWARE BAY

**Geospatial_Data_Presentation_Form:**

EXPERT KNOWLEDGE

**Other_Citation_Details:**

UNPUBLISHED
Type of Source Media: PERSONAL COMMUNICATION
Source Time Period of Content:
Time Period Information:
Single Date/Time:
Calendar Date: 2013
Source Currentness Reference: DATE OF COMMUNICATION
Source Citation Abbreviation: Src_0
Source Contribution: M_MAMMAL INFORMATION
Source Information:
Source Citation:
Citation Information:
Originator:
RICHARD STOCKTON COLLEGE OF NEW JERSEY - S. EVERT
Publication Date: 2013
Title:
SEAL AND DOLPHIN DISTRIBUTION AND SEASONALITY IN NJ
Geospatial Data Presentation Form:
EXPERT KNOWLEDGE
Other Citation Details:
UNPUBLISHED
Type of Source Media: PERSONAL COMMUNICATION
Source Time Period of Content:
Time Period Information:
Range of Dates/Times:
Beginning Date: 2013
Ending Date: 2014
Source Currentness Reference: DATE OF COMMUNICATION
Source Citation Abbreviation: Src_1
Source Contribution: M_MAMMAL INFORMATION
Source Information:
Source Citation:
Citation Information:
Originator:
MARINE EDUCATION, RESEARCH AND REHABILITATION INSTITUTE, INC. (MERR)
Publication Date: 2013
Title:
MARINE MAMMALS AND SEA TURTLES FOR DELAWARE BAY ESI
Geospatial Data Presentation Form:
EXPERT KNOWLEDGE
Type of Source Media: PERSONAL COMMUNICATION
Source Time Period of Content:
Time Period Information:
Single Date/Time:
Calendar Date: 2013
Source Currentness Reference:
DATE OF COMMUNICATION

Source_Citation_Abbreviation: Src_2
Source_Contribution: M_MAMMAL INFORMATION

Source_Citation:
  Citation_Information:
    Originator:
      MARINE EDUCATION, RESEARCH AND REHABILITATION INSTITUTE, INC. (MERR)
      (DE), MARINE MAMMAL STRANDING CENTER (NJ), NOAA FISHERIES SERVICE (NERO)

  Publication_Date:
    2013

  Title:
    SPECIES LIST OF STRANDED MARINE MAMMALS WITHIN DELAWARE BAY ESI
    COVERAGE AREA.

  Geospatial_Data_Presentation_Form:
    spreadsheet

  Other_Citation_Details:
    UNPUBLISHED

Type_of_Source_Media:
  EMAIL

Source_Time_Period_of_Content:
  Time_Period_Information:
    Single_Date/Time:
      Calendar_Date:
        2013

Source_Currentness_Reference:
  DATE OF COMMUNICATION

Source_Citation_Abbreviation: Src_3
Source_Contribution: M_MAMMAL INFORMATION

Source_Citation:
  Citation_Information:
    Originator:
      NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF FISH
      AND WILDLIFE (NJDEP) OFFICE OF SCIENCE

  Publication_Date:
    2010

  Title:
    OCEAN/WIND POWER ECOLOGICAL BASELINE STUDIES JANUARY 2008-DECEMBER
    2009 FINAL REPORT VOLUME III: MARINE MAMMAL AND SEA TURTLE STUDIES

  Geospatial_Data_Presentation_Form:
    HARDCOPY TEXT

  Publication_Information:
    Publication_Place:
      PLANO, TX

    Publisher:
      GEO-MARINE, INC.

    Other_Citation_Details:
      218 PP

Type_of_Source_Media:
  online

Source_Time_Period_of_Content:
  Time_Period_Information:
    Range_of_Dates/Times:
      Beginning_Date:
2008
Ending_Date:
2009
Source_Currentness_Reference:
DATE OF SURVEY
Source_Citation_Abbreviation:
Src_4
Source_Contribution:
M_MAMMAL INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator:
SLOCUM, C.J.
Publication_Date:
2009
Title:
FINAL REPORT: THREATS ASSESSMENT, BASELINE ABUNDANCE DATA, AND HABITAT CHARACTERIZATION OF THE GREAT BAY SEAL COLONY
Geospatial_Data_Presentation_Form:
document
Publication_Information:
Publication_Date:
2009
Publication_Place:
POMONA, NJ
Publisher:
THE RICHARD STOCKTON COLLEGE OF NEW JERSEY, SCHOOL OF NATURAL SCIENCES AND MATHEMATICS
Other_Citation_Details:
34 PP.
Type_of_Source_Media:
EMAIL
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date:
2009
Source_Currentness_Reference:
DATE OF PUBLICATION
Source_Citation_Abbreviation:
Src_5
Source_Contribution:
M_MAMMAL INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator:
TOTH,J.L., A.A. HOHN, K.W. ABLE, A.M. GORGONE
Publication_Date:
2011
Title:
PATTERNS OF SEASONAL OCCURRENCE, DISTRIBUTION, AND SITE FIDELITY OF COASTAL BOTTLENOSE DOLPHINS IN SOUTHERN NEW JERSEY, U.S.A. AND DEFINING BOTTLENOSE DOLPHIN STOCKS BASED ON ENVIRONMENTAL, PHYSICAL, AND BEHAVIORAL CHARACTERISTICS
Geospatial_Data_Presentation_Form:
document
Publication_Information:
Publication_Date:
2011
Publication_Place:
MARINEMAMMALSCIENCE.ORG
Publisher:
The Society for Marine Mammalogy

Other Citation Details:
27(1):94-110

Source Scale Denominator:
24000

Type of Source Media:
EMAIL

Source Time Period of Content:

Range of Dates/Times:
Beginning Date:
2010
Ending Date:
2011

Source Currentness Reference:
DATE OF PUBLICATION

Source Citation Abbreviation:
Src_6

Source Contribution:
M_MAMMAL INFORMATION

Process Step:
The mapping extent was dependent upon information availability and location of mapped coastal habitats and shorelines. Two main sources of data were used to depict marine mammal distribution and seasonality for this data layer: 1) personal interviews with resource experts from Marine Education, Research, and Rehabilitation Institute (MERR), Marine Mammal Stranding Center, NOAA Fisheries (NERO), Richard Stockton College of New Jersey, Delaware Department of Natural Resources and Control (DNREC), New Jersey Department of Environmental Protection Division of Fish and Wildlife (NJDEP); and 2) numerous published and unpublished reports. Marine mammals depicted in this atlas include whales, dolphins, porpoises, and seals. Bottlenose dolphins and seals are the only species likely to occur regularly in inshore areas and in bays. Bottlenose dolphins may be abundant from March through October. While four species of seals (e.g., gray, harbor, harp, and hooded) may be observed in DE and NJ waters from October through May, harbor seals are by far the most commonly observed. Gray and harp seals are occasionally observed while hooded seals are very rarely observed. Important haul-out sites for harbor seals in DE occur at Cape Henlopen and the breakwaters (other species of seals may occur here as well), and Mispillion River mouth and breakwaters (gray and harp seals possible as well). Seals may be hauled-out on Atlantic and Delaware Bay beaches throughout DE and they occur in the DE Inland Bays. The most important harbor seal haul-out in the study area in NJ occurs in Great Bay (up to 155 seals). Other smaller, but reliable haulouts include: Barnegat Inlet, Brigantine Inlet, and the mouth of the Mullica River. Besides the NJ haul-out mentioned, harbor seals may be present and/or hauling-out in appropriate habitats throughout Barnegat Bay, Great Bay, Absecon Bay, Great Egg Harbor Bay, Hereford Inlet, and other NJ bays and channels within reasonable proximity to inlets. Other species of cetaceans that may occur in DE and/or NJ State waters and/or Federal waters that were mapped in this atlas include: harbor porpoise, short-beaked common dolphin, striped dolphin, fin whale (state and federally endangered), humpback whale (state and federally endangered), and north Atlantic right whale (state and federally endangered). Other species of cetaceans have been reported via stranding data or other observations, but are not included due to their relative rarity of occurrence within the mapped ‘Area of Interest’ (AOI) for this atlas. The above digital and/or hardcopy sources were compiled by the project biologist to create the M_MAMMAL data layer. Depending on the type of source data, three general approaches are used for compiling the data layer: 1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:45,000 topographic quadrangles and digitized; 2) hardcopy maps are digitized at their source scale; 3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer. The ESI, biology, and human-use data are compiled into the standard ESI digital data format. A second set of interviews with participating resource experts are conducted to review the compiled data. If necessary, edits to the M_MAMMAL data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.

Process Date:
201403

Process Contact:
Contact Information:
Contact Organization Primary:
Contact Organization:
NOAA, Office of Response and Restoration

Contact Person:
ESI Manager

Contact Address:
Address Type:
Physical address
Address:
7600 Sand Point Way, N.E.
City:
Seattle
State or Province:
Washington
Postal Code:
98115-6349

Contact Voice Telephone:
(206) 526-6944

Contact Facsimile Telephone:
(206) 526-6329

Contact Electronic Mail Address:
orr.esi@noaa.gov

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:
1177

SDTS Terms Description:
SDTS Point and Vector Object Type:
Area point
Point and Vector Object Count:
1176

SDTS Terms Description:
SDTS Point and Vector Object Type:
Complete chain
Point and Vector Object Count:
2264

SDTS Terms Description:
SDTS Point and Vector Object Type:
Link
Point and Vector Object Count:
479935

SDTS Terms Description:
SDTS Point and Vector Object Type:
Node, planar graph
Point and Vector Object Count:
2206

Spatial Reference Information:
Horizontal Coordinate System Definition:
Geographic:
Latitude Resolution: 0.0000001
Longitude Resolution: 0.0000001
Geographic Coordinate Units: Decimal degrees

Geodetic Model:
Horizontal Datum Name: North American Datum of 1983
Ellipsoid Name: Geodetic Reference System 80
Semi-major Axis: 6378137.000000
Denominator of Flattening Ratio: 298.257222

Entity and Attribute Information:
Detailed Description:
Entity Type:
- Entity Type Label: M_MAMMAL.PAT
- Entity Type Definition: The M_MAMMAL.PAT table contains attribute information for the vector polygons in this data set representing marine mammal distribution, and haul-out sites. Note that all attribute information is stored in a series of relational files, described below and in the Overview_Description section. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the relationships between attribute tables in the ESI data structure.
- Entity Type Definition Source: NOAA ESI Guidelines

Attribute:
- Attribute Label: ID
- Attribute Definition: An identifier that links vector objects in the biology data layers to records in the BIO_LUT data table. ID is a concatenation of atlas number (212), element number (4), and record number. ID values of 9999 are holes in polygons and do not contain information.
- Attribute Definition Source: NOAA
- Attribute Domain Values:
  - Range Domain:
    - Range Domain Minimum: 2120400002
    - Range Domain Maximum: 2120401127

Attribute:
- Attribute Label: RARNUM
- Attribute Definition: An identifier that links directly to the BIORES table or the flat format BIOFILE table. RARNUM values of 0 are holes in the polygons and do not contain information.
- Attribute Definition Source: NOAA
- Attribute Domain Values:
  - Range Domain:
    - Range Domain Minimum: 212001253
    - Range Domain Maximum: 212001127
Detailed_Description:

Entity_Type:

  Entity_Type_Label:
  BIO_LUT

Entity_Type_Definition:

  The data table BIO_LUT is a lookup table that contains items necessary for linking vector objects in the biological data layers with the BIORES data table. Note that all attribute information is stored in a series of relational files, described below and in the Overview_Description section. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

Entity_Type_Definition_Source:

  NOAA ESI Guidelines

Attribute:

  Attribute_Label:
  RARNUM

  Attribute_Definition:

  An identifier that links records in the BIO_LUT data table to records in the BIORES data table or the flat format BIOFILE data table. RARNUM values of 0 are holes in polygons and do not contain information.

  Attribute_Definition_Source:

  NOAA

  Attribute_Domain_Values:

    Range_Domain:

      Range_Domain_Minimum:
      212000001

      Range_Domain_Maximum:
      212001295

Attribute:

  Attribute_Label:
  ID

  Attribute_Definition:

  An identifier that links vector objects in the biology data layers to records in the BIO_LUT data table. ID is a concatenation of atlas number (212), element number (4), and record number. ID values of 9999 are holes in polygons and do not contain information.

  Attribute_Definition_Source:

  NOAA

  Attribute_Domain_Values:

    Range_Domain:

      Range_Domain_Minimum:
      2120100002

      Range_Domain_Maximum:
      2120900295

Detailed_Description:

Entity_Type:

  Entity_Type_Label:
  BIORES

Entity_Type_Definition:

  The data table BIORES contains both biological attribute data and items necessary for linking vector objects in the biological data layers via the BIO_LUT data table to other associated data tables. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

Entity_Type_Definition_Source:

  NOAA ESI Guidelines

Attribute:

  Attribute_Label:
  RARNUM

  Attribute_Definition:

  An identifier that links records in the BIORES data table to records in the BIO_LUT data table or the flat format BIOFILE data table.

  Attribute_Definition_Source:
**Attribute**: 
**Attribute_Label**: SPECIES_ID 
**Attribute_Definition**: Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI species list maintained at NOAA. 
**Attribute_Definition_Source**: NOAA ESI Guidelines 
**Attribute_Domain_Values**: 
  **Range_Domain**: 
    **Range_Domain_Minimum**: 1 
    **Range_Domain_Maximum**: N 

**Attribute**: 
**Attribute_Label**: CONC 
**Attribute_Definition**: The field CONC refers to "concentration," abundance, or density values. The field may contain a range of counts of individuals (XX-XX INDIV). In cases where no quantitative count information was available, the field may contain descriptive terms such as "ABUNDANT", "COMMON", "HIGH", "OCCASIONAL", "POSSIBLE", "PRESENT", "UNCOMMON", or "VERY RARE". If no concentration information was available from any source, the field was populated with ".". Counts were provided by resource experts and/or published reports. 
**Attribute_Definition_Source**: NOAA ESI Guidelines 
**Attribute_Domain_Values**: 
  **Unrepresentable_Domain**: Acceptable values change from atlas to atlas. 

**Attribute**: 
**Attribute_Label**: SEASON_ID 
**Attribute_Definition**: Numeric identifier for the unique monthly presence and life history characteristics of each species at a given location. 
**Attribute_Definition_Source**: NOAA ESI Guidelines 
**Attribute_Domain_Values**: 
  **Range_Domain**: 
    **Range_Domain_Minimum**: 1 
    **Range_Domain_Maximum**: N 

**Attribute**: 
**Attribute_Label**: G_SOURCE 
**Attribute_Definition**: Geographic source identifier that links records in the BIORES data table to records in the SOURCES data table. 
**Attribute_Definition_Source**: NOAA ESI Guidelines 
**Attribute_Domain_Values**: 
  **Range_Domain**: 
    **Range_Domain_Minimum**: 1
Range_Domain_Maximum:
  N

Attribute:
  Attribute_Label:
    S_SOURCE
  Attribute_Definition:
    Seasonality source identifier that links records in the BIORES data table to records in the SOURCES data table.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum:
        1
      Range_Domain_Maximum:
        N

Attribute:
  Attribute_Label:
    ELEMENT
  Attribute_Definition:
    Major categories of biological data.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        BIRD
      Enumerated_Domain_Value_Definition:
        Birds
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        FISH
      Enumerated_Domain_Value_Definition:
        Fish
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        HABITAT
      Enumerated_Domain_Value_Definition:
        Habitats and plants
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        INVERT
      Enumerated_Domain_Value_Definition:
        Invertebrates
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        M_MAMMAL
      Enumerated_Domain_Value_Definition:
        Marine mammals
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: REPTILE
    Enumerated_Domain_Value_Definition: Reptiles and Amphibians
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: T_MAMMAL
    Enumerated_Domain_Value_Definition: Terrestrial mammals
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: EL_SPE
  Attribute_Definition: Concatenation of ELEMENT and SPECIES_ID. This item links records in the BIORES data table to records in the SPECIES and STATUS data tables.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Enumerated_Domain:
    Enumerated_Domain_Value: E#####
    Enumerated_Domain_Value_Definition: Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1; EL_SPE = 'B00001').
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: EL_SPE_SEA
  Attribute_Definition: Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the BIORES data table to records in the SEASONAL and BREED data tables.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Enumerated_Domain:
    Enumerated_Domain_Value: E#######
    Enumerated_Domain_Value_Definition: Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Detailed_Description:
  Entity_Type:
    Entity_Type_Label: SPECIES
    Entity_Type_Definition: The data table SPECIES identifies all species in the ESI data set. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data
structure. Refer to the Completeness_Report for a list of layer-specific species.

**Entity_Type_Definition_Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute Label:** SPECIES_ID

**Attribute Definition:**
Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI species list maintained at NOAA.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

- **Range Domain:**
  - **Range Domain Minimum:** 1
  - **Range Domain Maximum:** N

**Attribute:**

**Attribute Label:** NAME

**Attribute Definition:**
Species common name for the entire ESI data set.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

- **Unrepresentable Domain:**
  Acceptable values change from atlas to atlas.

**Attribute:**

**Attribute Label:** GEN_SPEC

**Attribute Definition:**
Species scientific name for the entire ESI data set.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

- **Unrepresentable Domain:**
  Acceptable values change from atlas to atlas.

**Attribute:**

**Attribute Label:** ELEMENT

**Attribute Definition:**
Major categories of biological data.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

- **Enumerated Domain:**
  - **Enumerated Domain Value:** BIRD
    - **Enumerated Domain Value Definition:** Birds
      - **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines
  - **Enumerated Domain:**
    - **Enumerated Domain Value:** FISH
      - **Enumerated Domain Value Definition:** Fish
      - **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      HABITAT
      Enumerated_Domain_Value_Definition: Habitats and plants
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      INVERT
      Enumerated_Domain_Value_Definition: Invertebrates
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      M_MAMMAL
      Enumerated_Domain_Value_Definition: Marine Mammals
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      REPTILE
      Enumerated_Domain_Value_Definition: Reptiles and Amphibians
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      T_MAMMAL
      Enumerated_Domain_Value_Definition: Terrestrial Mammals
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: SUBELEMENT
  Attribute_Definition: Element subgroup delineating a logical grouping of species.
  Attribute_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      alcid
      Enumerated_Domain_Value_Definition: Alcid
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      amphibian
      Enumerated_Domain_Value_Definition:
Amphibian

Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:
  Enumerated_Domain_Value: bivalve
  Enumerated_Domain_Value_Definition: Bivalve
  Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:
  Enumerated_Domain_Value: cephalopod
  Enumerated_Domain_Value_Definition: Cephalopod
  Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:
  Enumerated_Domain_Value: crab
  Enumerated_Domain_Value_Definition: Crab
  Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:
  Enumerated_Domain_Value: diadromous
  Enumerated_Domain_Value_Definition: Diadromous fish
  Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:
  Enumerated_Domain_Value: diving
  Enumerated_Domain_Value_Definition: Diving bird
  Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:
  Enumerated_Domain_Value: dolphin
  Enumerated_Domain_Value_Definition: Dolphin
  Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:
  Enumerated_Domain_Value: e_nursery
  Enumerated_Domain_Value_Definition: Estuarine nursery fish
  Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
**Enumerated Domain:**

*Enumerated Domain Value:*

- fish

*Enumerated Domain Value Definition:*

Fish

*Enumerated Domain Value Definition Source:*

NOAA ESI Guidelines

**Attribute Domain Values:**

*Enumerated Domain:*

*Enumerated Domain Value:*

- freshwater

*Enumerated Domain Value Definition:*

Freshwater fish

*Enumerated Domain Value Definition Source:*

NOAA ESI Guidelines

**Attribute Domain Values:**

*Enumerated Domain:*

*Enumerated Domain Value:*

- gastropod

*Enumerated Domain Value Definition:*

Gastropod

*Enumerated Domain Value Definition Source:*

NOAA ESI Guidelines

**Attribute Domain Values:**

*Enumerated Domain:*

*Enumerated Domain Value:*

- gull_tern

*Enumerated Domain Value Definition:*

Gull or tern

*Enumerated Domain Value Definition Source:*

NOAA ESI Guidelines

**Attribute Domain Values:**

*Enumerated Domain:*

*Enumerated Domain Value:*

- insect

*Enumerated Domain Value Definition:*

Insect

*Enumerated Domain Value Definition Source:*

NOAA ESI Guidelines

**Attribute Domain Values:**

*Enumerated Domain:*

*Enumerated Domain Value:*

- invert

*Enumerated Domain Value Definition:*

Invertebrate

*Enumerated Domain Value Definition Source:*

NOAA ESI Guidelines

**Attribute Domain Values:**

*Enumerated Domain:*

*Enumerated Domain Value:*

- lobster

*Enumerated Domain Value Definition:*

Lobster

*Enumerated Domain Value Definition Source:*

NOAA ESI Guidelines

**Attribute Domain Values:**

*Enumerated Domain:*

*Enumerated Domain Value:*

- m_benthic
Marine benthic fish

\textit{Enumerated\_Domain\_Value\_Definition\_Source:}

NOAA ESI Guidelines

\textit{Attribute\_Domain\_Values:}

\textit{Enumerated\_Domain:}

\textit{Enumerated\_Domain\_Value:}

\textit{m\_pelagic}

\textit{Enumerated\_Domain\_Value\_Definition:}

Marine pelagic fish

\textit{Enumerated\_Domain\_Value\_Definition\_Source:}

NOAA ESI Guidelines

\textit{Attribute\_Domain\_Values:}

\textit{Enumerated\_Domain:}

\textit{Enumerated\_Domain\_Value:}

passerine

\textit{Enumerated\_Domain\_Value\_Definition:}

Passerine bird

\textit{Enumerated\_Domain\_Value\_Definition\_Source:}

NOAA ESI Guidelines

\textit{Attribute\_Domain\_Values:}

\textit{Enumerated\_Domain:}

\textit{Enumerated\_Domain\_Value:}

pelagic

\textit{Enumerated\_Domain\_Value\_Definition:}

Pelagic bird

\textit{Enumerated\_Domain\_Value\_Definition\_Source:}

NOAA ESI Guidelines

\textit{Attribute\_Domain\_Values:}

\textit{Enumerated\_Domain:}

\textit{Enumerated\_Domain\_Value:}

pinniped

\textit{Enumerated\_Domain\_Value\_Definition:}

Pinniped

\textit{Enumerated\_Domain\_Value\_Definition\_Source:}

NOAA ESI Guidelines

\textit{Attribute\_Domain\_Values:}

\textit{Enumerated\_Domain:}

\textit{Enumerated\_Domain\_Value:}

plant

\textit{Enumerated\_Domain\_Value\_Definition:}

Plant

\textit{Enumerated\_Domain\_Value\_Definition\_Source:}

NOAA ESI Guidelines

\textit{Attribute\_Domain\_Values:}

\textit{Enumerated\_Domain:}

\textit{Enumerated\_Domain\_Value:}

raptor

\textit{Enumerated\_Domain\_Value\_Definition:}

Raptor

\textit{Enumerated\_Domain\_Value\_Definition\_Source:}

NOAA ESI Guidelines

\textit{Attribute\_Domain\_Values:}

\textit{Enumerated\_Domain:}

\textit{Enumerated\_Domain\_Value:}

sav

\textit{Enumerated\_Domain\_Value\_Definition:}

Submerged aquatic vegetation

\textit{Enumerated\_Domain\_Value\_Definition\_Source:}

NOAA ESI Guidelines

\textit{Attribute\_Domain\_Values:}
Enumerated_Domain:
  Enumerated_Domain_Value:
    shorebird
  Enumerated_Domain_Value_Definition:
    Shorebird
  Enumerated_Domain_Value_Definition_Source:
    NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      sm_mammal
    Enumerated_Domain_Value_Definition:
      Small mammal
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      snake
    Enumerated_Domain_Value_Definition:
      Snake
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      turtle
    Enumerated_Domain_Value_Definition:
      Turtle
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      wading
    Enumerated_Domain_Value_Definition:
      Wading bird
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      waterfowl
    Enumerated_Domain_Value_Definition:
      Waterfowl
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      wetland
    Enumerated_Domain_Value_Definition:
      Wetland
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      whale
    Enumerated_Domain_Value_Definition:
Attribute:

**Attribute_Label:**

NHP

**Attribute_Definition:**

Natural Heritage Program global ranking.

**Attribute_Definition_Source:**

Network of Natural Heritage Program

**Attribute_Domain_Values:**

**Codeset_Domain:**

**Codeset_Name:**

NHP Global Conservation Status Rank

**Codeset_Source:**

Natural Heritage Program

**Attribute:**

**Attribute_Label:**

DATE_PUB

**Attribute_Definition:**

Date of NHP listing.

**Attribute_Definition_Source:**

NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**

YYYYMM

**Enumerated_Domain_Value_Definition:**

YYYY for year and optionally MM for month

**Enumerated_Domain_Value_Definition_Source:**

NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**

0

**Enumerated_Domain_Value_Definition:**

Date unspecified

**Enumerated_Domain_Value_Definition_Source:**

NOAA ESI Guidelines

**Attribute:**

**Attribute_Label:**

EL_SPE

**Attribute_Definition:**

Concatenation of ELEMENT and SPECIES_ID. This item links records in the SPECIES data table to records in the BIORES and STATUS data tables.

**Attribute_Definition_Source:**

NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**

E#####

**Enumerated_Domain_Value_Definition:**

Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1; EL_SPE = 'B00001').

**Enumerated_Domain_Value_Definition_Source:**

NOAA ESI Guidelines

**Detailed_Description:**

**Entity_Type:**

**Entity_Type_Label:**

SEASONAL
**Entity Type Definition:**
The data table SEASONAL contains information on the seasonal presence of each species associated with each spatial vector object. See the Browse Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

**Entity Type Definition Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute Label:** ELEMENT

**Attribute Definition:**
Major categories of biological data.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**
BIRD

**Enumerated Domain Value Definition:**
Birds

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**
FISH

**Enumerated Domain Value Definition:**
Fish

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**
HABITAT

**Enumerated Domain Value Definition:**
Habitats and plants

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**
INVERT

**Enumerated Domain Value Definition:**
Invertebrates

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**
M_MAMMAL

**Enumerated Domain Value Definition:**
Marine Mammals

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**
REPTILE

**Enumerated Domain Value Definition:**
Reptiles and Amphibians

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value:
      T_MAMMAL
      Enumerated Domain Value Definition:
        Terrestrial Mammals
      Enumerated Domain Value Definition Source:
        NOAA ESI Guidelines

Attribute:
  Attribute Label:
    SPECIES_ID
  Attribute Definition:
    Numeric identifier for each species that is unique within each element and refers to a nationwide ESI species list maintained at NOAA.
  Attribute Definition Source:
    NOAA ESI Guidelines

Attribute Domain Values:
  Range Domain:
    Range Domain Minimum:
      1
    Range Domain Maximum:
      N

Attribute:
  Attribute Label:
    SEASON_ID
  Attribute Definition:
    Numeric identifier for the unique monthly presence and life history characteristics of each species at a given location.
  Attribute Definition Source:
    NOAA ESI Guidelines

Attribute Domain Values:
  Range Domain:
    Range Domain Minimum:
      1
    Range Domain Maximum:
      N

Attribute:
  Attribute Label:
    JAN
  Attribute Definition:
    January
  Attribute Definition Source:
    NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value:
      X
    Enumerated Domain Value Definition:
      Present in January
    Enumerated Domain Value Definition Source:
      NOAA ESI Guidelines

Attribute:
  Attribute Label:
    FEB
  Attribute Definition:
    February
  Attribute Definition Source:
    NOAA ESI Guidelines

Attribute Domain Values:
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<th>Attribute Definition</th>
<th>Attribute Definition Source</th>
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<td>June</td>
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<td>Attribute Definition</td>
<td>Attribute Definition Source</td>
<td>Attribute Domain Values</td>
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<td>Present in June</td>
<td>Enumerated Domain Value Definition Source: NOAA ESI Guidelines</td>
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<td>Attribute Label:</td>
<td>JUL</td>
<td></td>
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<td>Attribute Definition:</td>
<td>July</td>
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<td>Attribute Definition Source:</td>
<td>NOAA ESI Guidelines</td>
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<td>Enumerated Domain Value: X</td>
<td>Enumerated Domain Value Definition: Present in July</td>
<td>Enumerated Domain Value Definition Source: NOAA ESI Guidelines</td>
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<td>Attribute Definition:</td>
<td>August</td>
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<td>Attribute Definition Source:</td>
<td>NOAA ESI Guidelines</td>
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<td>Attribute Domain Values:</td>
<td>Enumerated Domain:</td>
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<td>Enumerated Domain Value: X</td>
<td>Enumerated Domain Value Definition: Present in August</td>
<td>Enumerated Domain Value Definition Source: NOAA ESI Guidelines</td>
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<td>Attribute:</td>
<td>Attribute Label:</td>
<td>SEP</td>
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<td>Attribute Definition:</td>
<td>September</td>
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<td>Attribute Definition Source:</td>
<td>NOAA ESI Guidelines</td>
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<td>Attribute Domain Values:</td>
<td>Enumerated Domain:</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>Enumerated Domain Value: X</td>
<td>Enumerated Domain Value Definition: Present in September</td>
<td>Enumerated Domain Value Definition Source: NOAA ESI Guidelines</td>
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<td>Attribute:</td>
<td>Attribute Label:</td>
<td>OCT</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Attribute Definition:</td>
<td>October</td>
<td></td>
<td></td>
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<td>Attribute Definition Source:</td>
<td>NOAA ESI Guidelines</td>
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<td>Attribute Domain Values:</td>
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Enumerated_Domain:
  Enumerated_Domain_Value:
    X
  Enumerated_Domain_Value_Definition:
    Present in October
  Enumerated_Domain_Value_Definition_Source:
    NOAA ESI Guidelines

Attribute:
  Attribute_Label:
    NOV
  Attribute_Definition:
    November
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        X
      Enumerated_Domain_Value_Definition:
        Present in November
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines

Attribute:
  Attribute_Label:
    DEC
  Attribute_Definition:
    December
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        X
      Enumerated_Domain_Value_Definition:
        Present in December
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines

Attribute:
  Attribute_Label:
    EL_SPE_SEA
  Attribute_Definition:
    Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the SEASONAL data table to records in the BIORES and BREED data tables.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        E########
      Enumerated_Domain_Value_Definition:
        Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines

Detailed_Description:
Entity_Type:
  Entity_Type_Label:
    BREED
  Entity_Type_Definition:
The data table BREED identifies the monthly presence of certain life-history stages or activities for each species at a given location.

Entity Type Definition Source:
NOAA ESI Guidelines

Attribute:
Attribute Label:
EL_SPE_SEA

Attribute Definition:
Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the BREED data table to records in the BIORES and SEASONAL data tables.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
E#######

Enumerated Domain Value Definition:
Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute:
Attribute Label:
MONTH

Attribute Definition:
Two-digit calendar month. Each life history stage or activity type for a particular species can have up to 12 records to account for each month of the year.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Range Domain:
Range Domain Minimum:
1

Range Domain Maximum:
12

Attribute:
Attribute Label:
BREED1

Attribute Definition:
Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED1 = nesting; if ELEMENT is "FISH" then BREED1 = spawning; if ELEMENT is "INVERT" then BREED1 = spawning; if ELEMENT is "REPTILE" then BREED1 = nesting; if ELEMENT is "M_MAMMAL" then BREED1 = mating. This attribute is not used for HABITAT or T_MAMMAL.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
Y

Enumerated Domain Value Definition:
Life-history stage or activity present

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
N

Enumerated Domain Value Definition:
Life-history stage or activity not present or not reported
Attribute: 
Attribute_Label: BREED2
Attribute_Definition: Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED2 = migrating; if ELEMENT is "FISH" then BREED2 = eggs; if ELEMENT is "INVERT" then BREED2 = eggs; if ELEMENT is "REPTILE" then BREED2 = hatching; if ELEMENT is "M_MAMMAL" then BREED2 = calving. This attribute is not used for HABITAT or T_MAMMAL elements.
Attribute_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Y
Enumerated_Domain_Value_Definition: Life-history stage or activity present
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Enumerated_Domain_Value: N
Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Enumerated_Domain_Value: -
Enumerated_Domain_Value_Definition: Breed category not used or not appropriate for record(s) in question
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute: 
Attribute_Label: BREED3
Attribute_Definition: Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED3 = molting; if ELEMENT is "FISH" then BREED3 = larvae; if ELEMENT is "INVERT" then BREED3 = larvae; if ELEMENT is "REPTILE" then BREED3 = internesting; if ELEMENT is "M_MAMMAL" then BREED3 = pupping. This attribute is not used for HABITAT or T_MAMMAL elements.
Attribute_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Y
Enumerated_Domain_Value_Definition: Life-history stage or activity present

Enumerated_Domain_Value: N
Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported

Enumerated_Domain_Value: -
Enumerated_Domain_Value_Definition: Breed category not used or not appropriate for record(s) in question

Enumerated_Domain_Value_Source: NOAA ESI Guidelines
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

N

Enumerated_Domain_Value_Definition:
Life-history stage or activity not present or not reported

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

- 

Enumerated_Domain_Value_Definition:
Breed category not used or not appropriate for record(s) in question

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute:

Attribute_Label:
BREED4

Attribute_Definition:
Life history stage or activity type, where: if ELEMENT is "FISH" then BREED4 = juveniles; if ELEMENT is "INVERT" then BREED4 = juveniles; if ELEMENT is "REPTILE" then BREED4 = juveniles; if ELEMENT is "M_MAMMAL" then BREED4 = molting. This attribute is not used for BIRD, HABITAT, or T_MAMMAL elements.

Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

Y

Enumerated_Domain_Value_Definition:
Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

N

Enumerated_Domain_Value_Definition:
Life-history stage or activity not present or not reported

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

- 

Enumerated_Domain_Value_Definition:
Breed category not used or not appropriate for record(s) in question

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute:

Attribute_Label:
BREED5

Attribute_Definition:
Life history stage or activity type, where: if ELEMENT is "FISH" then BREED5 = adults; if ELEMENT is "INVERT" then BREED5 = adults; if ELEMENT is "REPTILE" then BREED5 = adults. This attribute is not used for BIRD, M_MAMMAL, HABITAT or T_MAMMAL elements.

Attribute_Definition_Source:
NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**

Y

**Enumerated_Domain_Value_Definition:**

Life-history stage or activity present

**Enumerated_Domain_Value_Definition_Source:**

NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**

N

**Enumerated_Domain_Value_Definition:**

Life-history stage or activity not present or not reported

**Enumerated_Domain_Value_Definition_Source:**

NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**

- 

**Enumerated_Domain_Value_Definition:**

Breed category not used or not appropriate for record(s) in question

**Enumerated_Domain_Value_Definition_Source:**

NOAA ESI Guidelines

**Detailed_Description:**

**Entity_Type:**

**Entity_Type_Label:** STATUS

**Entity_Type_Definition:**

The data table STATUS identifies the species that are listed as either threatened or endangered by a state, federal, or international authority. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

**Entity_Type_Definition_Source:**

NOAA ESI Guidelines

**Attribute:**

**Attribute_Label:** ELEMENT

**Attribute_Definition:**

Major categories of biological data.

**Attribute_Definition_Source:**

NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**

BIRD

**Enumerated_Domain_Value_Definition:**

Birds

**Enumerated_Domain_Value_Definition_Source:**

NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**

FISH

**Enumerated_Domain_Value_Definition:**

Fish

**Enumerated_Domain_Value_Definition_Source:**

NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**

-
Enumerated_Domain_Value:
HABITAT
Enumerated_Domain_Value_Definition:
Habitats and Plants
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
INVERT
Enumerated_Domain_Value_Definition:
Invertebrates
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
M_MAMMAL
Enumerated_Domain_Value_Definition:
Marine Mammals
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
REPTILE
Enumerated_Domain_Value_Definition:
Reptiles and Amphibians
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
T_MAMMAL
Enumerated_Domain_Value_Definition:
Terrestrial Mammals
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute:
Attribute_Label:
SPECIES_ID
Attribute_Definition:
Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI species list maintained at NOAA.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum:
1
Range_Domain_Maximum:
N
Attribute:
Attribute_Label:
STATE
Attribute_Definition:
Two-letter state abbreviation.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Unrepresentable Domain:
Acceptable values change from atlas to atlas.

Attribute:
Attribute_Label:
COUNTRY
Attribute_Definition:
Three-letter country abbreviation.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Unrepresentable Domain:
Acceptable values change from atlas to atlas.

Attribute:
Attribute_Label:
S
Attribute_Definition:
State threatened or endangered status.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated Domain:
Enumerated_Domain_Value:
E
Enumerated_Domain_Value_Definition:
Endangered on state list
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated Domain:
Enumerated_Domain_Value:
T
Enumerated_Domain_Value_Definition:
Threatened on state list
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated Domain:
Enumerated_Domain_Value:
C
Enumerated_Domain_Value_Definition:
Species of Special Concern
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute:
Attribute_Label:
F
Attribute_Definition:
Federal threatened or endangered status.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated Domain:
Enumerated_Domain_Value:
E
Enumerated_Domain_Value_Definition:
Endangered on federal list
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated Domain:
Enumerated Domain Value: T
Enumerated Domain Value Definition: Threatened on federal list
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: C
Enumerated Domain Value Definition: Species of Special Concern
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute:
Attribute Label: I
Attribute Definition: International threatened or endangered status.
Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: E
Enumerated Domain Value Definition: Endangered on international list
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: T
Enumerated Domain Value Definition: Threatened on international list
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: C
Enumerated Domain Value Definition: Species of Special Concern
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute:
Attribute Label: S_DATE
Attribute Definition: Publication date of source material used to assign state status values for each species, if used.
Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: YYYYMM
Enumerated Domain Value Definition: YYYY for year and optionally MM for month
Enumerated Domain Value Definition Source: NOAA ESI Guidelines
Attribute:
  Attribute_Label: F_DATE
  Attribute_Definition: Publication date of source material used to assign federal status values for each species, if used.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: YYYYMM
      Enumerated_Domain_Value_Definition: YYYY for year and optionally MM for month
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: I_DATE
  Attribute_Definition: Publication date of source material used to assign international status values for each species, if used.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: YYYYMM
      Enumerated_Domain_Value_Definition: YYYY for year and optionally MM for month
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: EL_SPE
  Attribute_Definition: Concatenation of ELEMENT and SPECIES_ID. This item links the STATUS data table to the BIORES and SPECIES data tables.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: E#####
      Enumerated_Domain_Value_Definition: Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1; EL_SPE = 'B00001').
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Detailed_Description:
Entity_Type:
  Entity_Type_Label: SOURCES
  Entity_Type_Definition: The data table SOURCES contains the primary sources used to create the ESI data set. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.
  Entity_Type_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: SOURCE_ID
**Attribute Definition:**
Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; SOURCE_ID and ESI_SOURCE in the ESIL and ESIP data layers; and SOURCE_ID in the HYDRO data layer.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Range Domain:**
- **Range Domain Minimum:** 1
- **Range Domain Maximum:** N

**Attribute:**
**Attribute Label:** ORIGINATOR
**Attribute Definition:**
Author or developer of source material or data set.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Unrepresentable Domain:**
Acceptable values change from atlas to atlas.

**Attribute:**
**Attribute Label:** DATE_PUB
**Attribute Definition:**
Date of source material, publication, or date of personal communication with expert source.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**
- **Enumerated Domain Value:** YYYYMM
  
**Enumerated Domain Value Definition:**
YYYYY for year and optionally MM for month

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute:**
**Attribute Label:** TITLE
**Attribute Definition:**
Title of source material or data.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Unrepresentable Domain:**
Acceptable values change from atlas to atlas.

**Attribute:**
**Attribute Label:** DATA_FORMAT
**Attribute Definition:**
The format of the source material.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Unrepresentable Domain:**
Acceptable values change from atlas to atlas.

**Attribute:**
**Attribute Label:** PUB_PLACE
Attribute Definition:
Publication place.
Attribute Definition Source:
NOAA ESI Guidelines
Attribute Domain Values:
  Unrepresentable Domain:
  Acceptable values change from atlas to atlas.

Attribute:
Attribute Label:
PUBLISHER
Attribute Definition:
Publisher.
Attribute Definition Source:
NOAA ESI Guidelines
Attribute Domain Values:
  Unrepresentable Domain:
  Acceptable values change from atlas to atlas.

Attribute:
Attribute Label:
PUBLICATION
Attribute Definition:
Additional citation information.
Attribute Definition Source:
NOAA ESI Guidelines
Attribute Domain Values:
  Unrepresentable Domain:
  Acceptable values change from atlas to atlas.

Attribute:
Attribute Label:
ONLINE_LINK
Attribute Definition:
Online computer resource URL.
Attribute Definition Source:
NOAA ESI Guidelines
Attribute Domain Values:
  Unrepresentable Domain:
  Acceptable values change from atlas to atlas.

Attribute:
Attribute Label:
SCALE
Attribute Definition:
Description of the source scale.
Attribute Definition Source:
NOAA ESI Guidelines
Attribute Domain Values:
  Unrepresentable Domain:
  Acceptable values change from atlas to atlas.

Attribute:
Attribute Label:
TIME_PERIOD
Attribute Definition:
Date(s) of data collection that the source material is based upon.
Attribute Definition Source:
NOAA ESI Guidelines
Attribute Domain Values:
  Unrepresentable Domain:
  Acceptable values change from atlas to atlas.

Overview Description:
Entity and Attribute Overview:
In addition to the geographic data layers, six relational attribute or data tables (BIORES, BREED, SEASONAL,
SOURCES, SPECIES, and STATUS) are used to store the complex biological data in the ESI data structure. The geographic data layer containing biological resource information (in this case, M_MAMMAL) is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or it can be linked directly using RARNUM. The ID is a unique combination of the atlas number (for the Delaware/New Jersey/Pennsylvania atlas, the number is 212), an element/layer specific number (BIRDS are layer 1, FISH are layer 2, etc.), and a unique record number. The RARNUM represents a unique combination of species, seasonalities, concentrations, and source information. For each of these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases. BIORES and the other relational data tables are described in the Detailed_Description sections. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way these tables relate to the geographic data layers and other attribute tables in the ESI data structure. Due to the complexity of the relational database model, the data items are also post-processed into a flat file format. This table, called BIOFILE, may be used in place of the relational files to ease simple data queries. The items in the flat file are ELEMENT, SUBELEMENT, NAME, GEN_SPEC, S, F, NHP, DATE_PUB, CONC, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC, BREED1, BREED2, BREED3, BREED4, BREED5, RARNUM, G_SOURCE, S_SOURCE, and BREED. All of these items are the same as their counterparts in the individual data tables (described in the Detailed_Description sections), except the BREED1-BREED5 and BREED items. BREED is a newly generated variable used to link to the BREED_DT data table, a modified, more compact version of the relational BREED data table. BREED1-BREED5 give a text summary of when each life stage occurs within the associated map object. The life stages referred to are the same as those listed in the Detailed_Description of the BREED data table. The link to the BIOFILE may be made through the BIO_LUT, using ID to link to RARNUM, or BIOFILE may be linked directly to the RARNUM in each of the geographic layer's attribute data tables. As mentioned, BREED_DT is an auxiliary support data table to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item. A second supporting data table is SOURCES. This is the same as the source file described above, and the link from the flat file is both G_SOURCE and S_SOURCE. It should be noted that although the flat file eases data query, it is not a normalized database structure, and actual updates performed by the states and other responsible agencies should be done using the relational data tables. The entity-relationship diagram, describing relationships between attribute tables in the ESI data structure, does NOT include the BIOFILE data table, and this data table is NOT described in a Detailed_Description section.

Entity_and_Attribute_Detail_Citation:
A complete description of entity types, attributes, and attribute values for ESI atlases can be found in the NOAA ESI Guidelines (http://response.restoration.noaa.gov/esi_guidelines).

Distribution_Information:
Distributor:
Contact_Information:
Contact_Person_Primary:
  Contact_Person:
    ESI Manager
  Contact_Organization:
    NOAA, Office of Response and Restoration
Contact_Address:
  Address_Type:
    Physical Address
  Address:
    7600 Sand Point Way N.E.
  City:
    Seattle
  State_orProvince:
    Washington
  Postal_Code:
    98115-6349
Contact_Voice_Telephone:
  (206) 526-6944
Contact_Facsimile_Telephone:
  (206) 526-6329
Contact_Electronic_Mail_Address:
Resource_Description: Downloadable Data

Distribution_Liability:
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format. If problems are encountered either in downloading the ESI data or if any file appears corrupted, please contact the ESI manager.

Custom_Order_Process:
Contact NOAA if you require the data be provided to you on CD/DVD. (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export files, Shapefiles, and a file Geodatabase (the recommended format). The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

Metadata_Reference_Information:
Metadata_Date: 20140620
Metadata_Contact:
Contact Information:
  Contact_Person_Primary:
    Contact_Person: ESI Manager
    Contact_Organization: NOAA, Office of Response and Restoration
  Contact_Position: GIS Manager
Contact_Address:
  Address_Type: Physical Address
  Address: 7600 Sand Point Way, N.E.
  City: Seattle
  State_or_Province: Washington
  Postal_Code: 98115-6349
  Contact_Voice_Telephone: (206) 526-6944
  Contact_Facsimile_Telephone: (206) 526-6329
  Contact_Electronic_Mail_Address: orr.esi@noaa.gov

Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: T_MAMMAL (Terrestrial Mammal Polygons)

Metadata:

- Identification Information
- Data Quality Information
- Spatial Data Organization Information
- Spatial Reference Information
- Entity and Attribute Information
- Distribution Information
- Metadata Reference Information

Identification Information:

Citation Information:

Originator:

Originator:
- Department of Homeland Security, United States Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.

Publication Date:
- 201403

Title:
- Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: T_MAMMAL (Terrestrial Mammal Polygons)

Edition:
- Second

Geospatial Data Presentation Form:
- vector digital data

Series Information:
- Series Name:
  - None

Issue Identification:
- Delaware/New Jersey/Pennsylvania

Publication Information:
- Publication Place:
  - Seattle, Washington

Publisher:
- NOAA's Ocean Service, Office of Response and Restoration (OR&R), Emergency Response Division (ERD).

Other Citation Details:

Online Linkage:
- http://response.restoration.noaa.gov/esi

Online Linkage:
- http://response.restoration.noaa.gov/esi_download

Online Linkage:
- http://response.restoration.noaa.gov/esi_guidelines

Description:

Abstract:
This data set contains sensitive biological resource data for river otter, muskrat, and one endangered mammal (SE, FE) in Delaware/New Jersey/Pennsylvania. Vector polygons in this data set represent terrestrial mammal distribution. Species specific abundance, seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer. This data set comprises a portion of the ESI data for Delaware/New Jersey/Pennsylvania. 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.

**Purpose:**

The ESI data were collected, mapped, and digitized to provide environmental data for oil spill planning and response. The Clean Water Act with amendments by the Oil Pollution Act of 1990 requires response plans for immediate and effective protection of sensitive resources.

**Time_Period_of_Content:**

**Time_Period_Information:**

**Range_of_Dates/Times:**

**Beginning_Date:**
1985

**Ending_Date:**
2013

**Currentness_Reference:**

The data were compiled during 2013-2014. The currentness dates for the data range from 1985 to 2013 and are documented in the Lineage section.

**Status:**

**Progress:**

Complete

**Maintenance_and_Update_Frequency:**

None Scheduled

**Spatial_Domain:**

**Bounding_Coordinates:**

**West_BoundingCoordinate:**
-75.75000

**East_BoundingCoordinate:**
-74.03800

**North_BoundingCoordinate:**
40.23700

**South_BoundingCoordinate:**
38.37500

**Keywords:**

**Theme:**

**Theme_Keyword_Thesaurus:**

ISO 19115 Topic Category

**Theme_Keyword:**
biota

**Theme_Keyword:**
environment

**Theme:**

**Theme_Keyword_Thesaurus:**

None

**Theme_Keyword:**
Environmental Monitoring

**Theme_Keyword:**
ESI

**Theme_Keyword:**
Sensitivity maps

**Theme_Keyword:**
Coastal resources

**Theme_Keyword:**
Oil spill planning

**Theme_Keyword:**
Coastal Zone Management

**Theme_Keyword:** 
Wildlife

**Theme**

**Theme_Keyword:** Terrestrial mammals

**Theme**

**Theme_Keyword_Thesaurus:** NOS Data Explorer Topic Category

**Theme_Keyword:** Environmental Monitoring

**Place**

**Place_Keyword_Thesaurus:** None

**Place_Keyword:** Delaware/New Jersey/Pennsylvania

**Access_Constraints:** None

**Use_Constraints:**

DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Management boundaries are not to be considered legal boundaries. Edges may have been altered for cartographic processes. Besides the above warnings, there are no use constraints on these data. Note that the ESI database should not be used to the exclusion of other pertinent data or information held by state or federal agencies or other organizations. Likewise, information contained in the database cannot be used in place of consultations with environmental, natural resource, and cultural resource agencies, or in place of field surveys. Recognize that the information contained in the ESI database represents known concentration areas or occurrences of natural, cultural, and human-use resources, but does not necessarily represent the full distribution or range of each species or resource. This is particularly important to recognize when considering potential impacts to protected resources, such as endangered species, wetlands, etc. Acknowledgment of the originators, publishers, contributors, and sources listed would be appreciated in products derived from these data.

**Browse_Graphic:**

**Browse_Graphic_File_Name:** http://response.restoration.noaa.gov/sites/default/files/esimaps/gisdata/DE_NJ_PA_2014_datafig.jpg

**Browse_Graphic_File_Description:** Depicts the relationships between spatial data layers and attribute data tables for the Delaware/New Jersey/Pennsylvania ESI data.

**Browse_Graphic_File_Type:** JPEG

**Browse_Graphic:**

**Browse_Graphic_File_Name:** http://response.restoration.noaa.gov/sites/default/files/esimaps/gisdata/DE_NJ_PA_2014_datafig2.jpg

**Browse_Graphic_File_Description:** Depicts the relationships between spatial data layers and desktop data tables for the Delaware/New Jersey/Pennsylvania ESI data.

**Browse_Graphic_File_Type:** JPEG

**Data_Set_Credit:**

This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Office of Response and Restoration (OR&R), Emergency Response Division (ERD), Seattle, Washington; and The Department of Homeland Security, United States Coast Guard Office of Incident Management and Preparedness, Washington, D.C.

**Native_Data_Set_Environment:**

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(R) (version 10.2) and SQL SERVER(R) (version 2005). The hardware configuration is PCs with Windows Operating System 7. The Spatial_Data_Organization Information section refers only to the source files in the ARC export format. The following files are included in the data set: benthic.e00, birds.e00, esil.e00, esp.e00, fish.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, socecon.e00, and t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut.e00, biofile.e00, biore.e00, breed.e00, breed_dt.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, sources.e00, species.e00, and status.e00.

**Data_Quality_Information:**

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Attribute_Accuracy:

Attribute_Accuracy_Report:

A multi-stage error checking process is used to verify both attribute accuracy and logical consistency throughout data production. The process includes a standardized data entry methodology, hardcopy data review by in-house and external resource experts, a final Quality Assurance/Quality Control (QA/QC) process, and multiple automated logical consistency checks. Quantitative data (such as densities, counts, abundances, or concentrations) provided by resource experts for inclusion in the data set may vary widely in attribute accuracy, depending upon the methodology used to collect and compile such data. For a more detailed evaluation of source data attribute accuracy, contact the sources listed in the Lineage section.

Logical_Consistency_Report:

A multi-stage error checking process, described in the above Attribute_Accuracy_Report, is used to verify both attribute accuracy and logical consistency throughout data production. This process includes multiple automated logical consistency checks that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and SQL SERVER(R) to ARC/INFO(R) consistencies. After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks. In the process of checking for topological and database consistencies, new ID's and RARNUM's or HUNUM's are also generated. The new ID's are a combination of atlas number, element number, and record number. In addition, the value used to represent the element is modified to reflect the type of feature being mapped. In the case of an element that is normally represented by a point or polygon, a value of 20 is added to the standard element value for mapping of linear features. In the case where an element usually mapped as a polygon is represented by a point, a value of 30 is added to the regular element value. The RARNUM's are also modified to include the atlas number, so multiple atlases can be combined and RARNUM's remain unique. RARNUM's are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUM's are also modified to include the atlas number.

Completeness_Report:

These data represent a synthesis of expert knowledge, survey data, and digital data on terrestrial mammal distribution. These data do not necessarily represent all terrestrial mammal occurrences in Delaware/New Jersey/Pennsylvania. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 8, Northern river otter, Lontra canadensis; 37, Muskrat, Ondatra zibethicus; 279, Endangered mammal, n/a.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

Spatial components for the biological data layers can come from expert interviews, hardcopy, or digital sources. Some of the spatial components of the biological data layers may have been developed using regional experts who estimate concentration areas. It is difficult to estimate the positional accuracy of such data, except to state that they are compiled on hardcopy base maps with a scale of 1:45,000. Some of the spatial components of the biological data sets are developed from pre-existing digital or hardcopy sources and reflect the positional accuracy of these original data. Note that biological resource data by their very nature are considered "fuzzy", and this should be understood when considering the positional accuracy of vector digital objects representing these resources. See the Lineage and Process_Description sections for more information on the original source data and how these data were integrated or manipulated to create the final data set.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator:

DELaware DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL (DNREC)

Publication_Date:

2012

Title:

ELEMENT OCCURRENCE RECORDS

Geospatial_Data_Presentation_Form:

vector digital data

Other_Citation_Details:

UNPUBLISHED

Type_of_Source_Media:

EMAIL

Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:
The mapping extent was dependent upon information availability and location of mapped coastal habitats and shorelines. Three species were mapped for the Delaware Bay ESI: river otter, muskrat, and one endangered mammal (SE, FE). Polygons representing the distribution of muskrat and river otter were produced based on expert knowledge from Delaware Department of Natural Resources and Environmental Control (DNREC) staff. The endangered mammal was mapped using polygons from element occurrence records provided by DNREC staff. Other terrestrial mammals present in the region include: coyote, gray fox, red fox, mink, muskrat, opossum, and raccoon. These species were not mapped because they are in very low densities in coastal areas and/or because they are assumed to experience little impact in the event of a spill. The above digital and/or hardcopy sources were compiled by the project biologist to create the T_MAMMAL data layer. Depending on the type of source data, three general approaches are used for compiling the data layer: 1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:45,000 topographic quadrangles and digitized; 2) hardcopy maps are digitized at their source scale; 3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer. The ESI, biology, and human-use data are compiled into the standard ESI digital data format. A second set of interviews with participating resource experts are conducted to review the compiled data. If necessary, edits to the T_MAMMAL data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.
201403

**Process Contact**:

**Contact Information**:

**Contact Organization Primary**:

- **Contact Organization**: NOAA, Office of Response and Restoration
- **Contact Person**: ESI Manager

**Contact Address**:

- **Address Type**: Physical address
- **Address**: 7600 Sand Point Way, N.E.
- **City**: Seattle
- **State or Province**: Washington
- **Postal Code**: 98115-6349

**Contact Voice Telephone**:

- (206) 526-6944

**Contact Facsimile Telephone**:

- (206) 526-6329

**Contact Electronic Mail Address**:

- orr.esi@noaa.gov

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**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**: 269

**SDTS Terms Description**:

- **SDTS Point and Vector Object Type**: Area point
- **Point and Vector Object Count**: 268

**SDTS Terms Description**:

- **SDTS Point and Vector Object Type**: Complete chain
- **Point and Vector Object Count**: 1973

**SDTS Terms Description**:

- **SDTS Point and Vector Object Type**: Link
- **Point and Vector Object Count**: 752246

**SDTS Terms Description**:

- **SDTS Point and Vector Object Type**: Node, planar graph
- **Point and Vector Object Count**: 1896

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[Back To Index]
SpatialReferenceInformation:
  HorizontalCoordinateSystemDefinition:
    Geographic:
      LatitudeResolution: 0.0000001
      LongitudeResolution: 0.0000001
    GeographicCoordinateUnits: Decimal degrees
  GeodeticModel:
    HorizontalDatumName: North American Datum of 1983
    EllipsoidName: Geodetic Reference System 80
    Semi-majorAxis: 6378137.000000
    DenominatorOfFlatteningRatio: 298.257222

EntityAndAttributeInformation:
  DetailedDescription:
    EntityType:
      EntityTypeLabel: T_MAMMAL.PAT
      EntityTypeDefinition: The T_MAMMAL.PAT table contains attribute information for the vector polygons in this data set representing terrestrial mammal distribution. Note that all attribute information is stored in a series of relational files, described below and in the Overview_Description section. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the relationships between attribute tables in the ESI data structure.
      EntityTypeDefinitionSource: NOAA ESI Guidelines
    Attribute:
      AttributeLabel: ID
      AttributeDefinition: An identifier that links vector objects in the biology data layers to records in the BIO_LUT data table. ID is a concatenation of atlas number (212), element number (9), and record number. ID values of 9999 are holes in polygons and do not contain information.
      AttributeDefinitionSource: NOAA
      AttributeDomainValues:
        RangeDomain:
          RangeDomainMinimum: 2120900002
          RangeDomainMaximum: 2120900295
    Attribute:
      AttributeLabel: RARNUM
      AttributeDefinition: An identifier that links directly to the BIORES table or the flat format BIOFILE table. RARNUM values of 0 are holes in the polygons and do not contain information.
      AttributeDefinitionSource: NOAA
      AttributeDomainValues:
        RangeDomain:
Detailed_Description:

Entity_Type:
  Entity_Type_Label: BIO_LUT
  Entity_Type_Definition: The data table BIO_LUT is a lookup table that contains items necessary for linking vector objects in the biological data layers with the BIORES data table. Note that all attribute information is stored in a series of relational files, described below and in the Overview_Description section. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.
  Entity_Type_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: RARNUM
  Attribute_Definition: An identifier that links records in the BIO_LUT data table to records in the BIORES data table or the flat format BIOFILE data table. RARNUM values of 0 are holes in polygons and do not contain information.
  Attribute_Definition_Source: NOAA
  Attribute_Domain_Values:
    Range_Domain: Range_Domain_Minimum: 212001292 Range_Domain_Maximum: 212001295

Attribute:
  Attribute_Label: ID
  Attribute_Definition: An identifier that links vector objects in the biology data layers to records in the BIO_LUT data table. ID is a concatenation of atlas number (212), element number (9), and record number. ID values of 9999 are holes in polygons and do not contain information.
  Attribute_Definition_Source: NOAA
  Attribute_Domain_Values:
    Range_Domain: Range_Domain_Minimum: 2120100002 Range_Domain_Maximum: 212001295

Detailed_Description:

Entity_Type:
  Entity_Type_Label: BIORES
  Entity_Type_Definition: The data table BIORES contains both biological attribute data and items necessary for linking vector objects in the biological data layers via the BIO_LUT data table to other associated data tables. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.
  Entity_Type_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: RARNUM
  Attribute_Definition: An identifier that links records in the BIORES data table to records in the BIO_LUT data table or the flat format
<table>
<thead>
<tr>
<th>Attribute</th>
<th>Attribute Label</th>
<th>Attribute Definition</th>
<th>Attribute Definition Source</th>
<th>Attribute Domain Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECIES_ID</td>
<td>SPECIES_ID</td>
<td>Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI species list maintained at NOAA.</td>
<td>NOAA ESI Guidelines</td>
<td>Range_Domain:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Range_Domain_Minimum:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Range_Domain_Maximum:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N</td>
</tr>
<tr>
<td>CONC</td>
<td>CONC</td>
<td>The field CONC refers to &quot;concentration,&quot; abundance, or density values. No quantitative data were available for terrestrial mammals, so the concentration field may contain descriptive terms such as &quot;ABUNDANT&quot; or &quot;COMMON&quot;. If no concentration information was available from any source, the field was populated with &quot;.-&quot;. Concentrations for river otter and muskrat were based on expert knowledge.</td>
<td>NOAA ESI Guidelines</td>
<td>Unrepresentable_Domain:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Acceptable values change from atlas to atlas.</td>
</tr>
<tr>
<td>SEASON_ID</td>
<td>SEASON_ID</td>
<td>Numeric identifier for the unique monthly presence and life history characteristics of each species at a given location.</td>
<td>NOAA ESI Guidelines</td>
<td>Range_Domain:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Range_Domain_Minimum:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Range_Domain_Maximum:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N</td>
</tr>
<tr>
<td>G_SOURCE</td>
<td>G_SOURCE</td>
<td>Geographic source identifier that links records in the BIORES data table to records in the SOURCES data table.</td>
<td>NOAA ESI Guidelines</td>
<td>Range_Domain:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Range_Domain_Minimum:</td>
</tr>
</tbody>
</table>
Range_Domain_Maximum: N

Attribute:
Attribute_Label: S_SOURCE
Attribute_Definition:
Seasonality source identifier that links records in the BIORES data table to records in the SOURCES data table.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum: 1
Range_Domain_Maximum: N

Attribute:
Attribute_Label: ELEMENT
Attribute_Definition:
Major categories of biological data.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: BIRD
Enumerated_Domain_Value_Definition: Birds
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: FISH
Enumerated_Domain_Value_Definition: Fish
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: HABITAT
Enumerated_Domain_Value_Definition: Habitats and plants
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: INVERT
Enumerated_Domain_Value_Definition: Invertebrates
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: M_MAMMAL
Enumerated_Domain_Value_Definition:
Marine mammals

Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: REPTILE
Enumerated_Domain_Value_Definition: Reptiles and Amphibians
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: T_MAMMAL
Enumerated_Domain_Value_Definition: Terrestrial mammals
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute: AttributeLabel: EL_SPE
Attribute_Definition: Concatenation of ELEMENT and SPECIES_ID. This item links records in the BIORES data table to records in the SPECIES and STATUS data tables.
Attribute_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: E####
Enumerated_Domain_Value_Definition:
Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1; EL_SPE = 'B00001').
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute: AttributeLabel: EL_SPE_SEA
Attribute_Definition: Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the BIORES data table to records in the SEASONAL and BREED data tables.
Attribute_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: E######
Enumerated_Domain_Value_Definition:
Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Detailed_Description:
Entity_Type: SPECIES
Entity_Type_Label: SPECIES
Entity_Type_Definition: The data table SPECIES identifies all species in the ESI data set. See the Browse_Graphic section for a link to
the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure. Refer to the Completeness_Report for a list of layer-specific species.

**Entity_Type_Definition_Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute_Label:** SPECIES_ID
**Attribute_Definition:**
Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI species list maintained at NOAA.
**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**
**Range_Domain:**
- **Range_Domain_Minimum:** 1
- **Range_Domain_Maximum:** N

**Attribute:**

**Attribute_Label:** NAME
**Attribute_Definition:**
Species common name for the entire ESI data set.
**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**
**Unrepresentable_Domain:** Acceptable values change from atlas to atlas.

**Attribute:**

**Attribute_Label:** GEN_SPEC
**Attribute_Definition:**
Species scientific name for the entire ESI data set.
**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**
**Unrepresentable_Domain:** Acceptable values change from atlas to atlas.

**Attribute:**

**Attribute_Label:** ELEMENT
**Attribute_Definition:**
Major categories of biological data.
**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**
**Enumerated_Domain:**
- **Enumerated_Domain_Value:** BIRD
  - **Enumerated_Domain_Value_Definition:** Birds
  - **Enumerated_Domain_Value_Definition_Source:** NOAA ESI Guidelines
- **Enumerated_Domain_Value:** FISH
  - **Enumerated_Domain_Value_Definition:** Fish
  - **Enumerated_Domain_Value_Definition_Source:** NOAA ESI Guidelines
NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      HABITAT
      Enumerated_Domain_Value_Definition:
        Habitats and plants
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      INVERT
      Enumerated_Domain_Value_Definition:
        Invertebrates
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      M_MAMMAL
      Enumerated_Domain_Value_Definition:
        Marine Mammals
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      REPTILE
      Enumerated_Domain_Value_Definition:
        Reptiles and Amphibians
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      T_MAMMAL
      Enumerated_Domain_Value_Definition:
        Terrestrial Mammals
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines

Attribute:
  Attribute_Label:
    SUBELEMENT
  Attribute_Definition:
    Element subgroup delineating a logical grouping of species.
  Attribute_Definition_Source:
    NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      alcid
      Enumerated_Domain_Value_Definition:
        Alcid
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      amphibian
Enumerated_Domain_Value_Definition: Amphibian
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: bivalve
Enumerated_Domain_Value_Definition: Bivalve
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: cephalopod
Enumerated_Domain_Value_Definition: Cephalopod
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: crab
Enumerated_Domain_Value_Definition: Crab
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: diadromous
Enumerated_Domain_Value_Definition: Diadromous fish
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: diving
Enumerated_Domain_Value_Definition: Diving bird
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: dolphin
Enumerated_Domain_Value_Definition: Dolphin
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: e_nursery
Enumerated_Domain_Value_Definition: Estuarine nursery fish
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      fish
    Enumerated_Domain_Value_Definition:
      Fish
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      freshwater
    Enumerated_Domain_Value_Definition:
      Freshwater fish
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      gastropod
    Enumerated_Domain_Value_Definition:
      Gastropod
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      gull_tern
    Enumerated_Domain_Value_Definition:
      Gull or tern
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      insect
    Enumerated_Domain_Value_Definition:
      Insect
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      invert
    Enumerated_Domain_Value_Definition:
      Invertebrate
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      lobster
    Enumerated_Domain_Value_Definition:
      Lobster
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      m_benthic
Enumerated_Domain_Value_Definition:
Marine benthic fish
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
m_pelagic
Enumerated_Domain_Value_Definition:
Marine pelagic fish
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
passerine
Enumerated_Domain_Value_Definition:
Passerine bird
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
pelagic
Enumerated_Domain_Value_Definition:
Pelagic bird
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
pinniped
Enumerated_Domain_Value_Definition:
Pinniped
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
plant
Enumerated_Domain_Value_Definition:
Plant
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
raptor
Enumerated_Domain_Value_Definition:
Raptor
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
sav
Enumerated_Domain_Value_Definition:
Submerged aquatic vegetation
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value:
            shorebird
        Enumerated_Domain_Value_Definition:
            Shorebird
        Enumerated_Domain_Value_Definition_Source:
            NOAA ESI Guidelines

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value:
            sm_mammal
        Enumerated_Domain_Value_Definition:
            Small mammal
        Enumerated_Domain_Value_Definition_Source:
            NOAA ESI Guidelines

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value:
            snake
        Enumerated_Domain_Value_Definition:
            Snake
        Enumerated_Domain_Value_Definition_Source:
            NOAA ESI Guidelines

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value:
            turtle
        Enumerated_Domain_Value_Definition:
            Turtle
        Enumerated_Domain_Value_Definition_Source:
            NOAA ESI Guidelines

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value:
            wading
        Enumerated_Domain_Value_Definition:
            Wading bird
        Enumerated_Domain_Value_Definition_Source:
            NOAA ESI Guidelines

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value:
            waterfowl
        Enumerated_Domain_Value_Definition:
            Waterfowl
        Enumerated_Domain_Value_Definition_Source:
            NOAA ESI Guidelines

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value:
            wetland
        Enumerated_Domain_Value_Definition:
            Wetland
        Enumerated_Domain_Value_Definition_Source:
            NOAA ESI Guidelines

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value:
            whale
Enumerated_Domain_Value_Definition:
Whale

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute:
Attribute_Label:
NHP
Attribute_Definition:
Natural Heritage Program global ranking.
Attribute_Definition_Source:
Network of Natural Heritage Program
Attribute_Domain_Values:
Codeset_Domain:
Codeset_Name:
NHP Global Conservation Status Rank
Codeset_Source:
Natural Heritage Program

Attribute:
Attribute_Label:
DATE_PUB
Attribute_Definition:
Date of NHP listing.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
YYYYMM
Enumerated_Domain_Value_Definition:
YYYY for year and optionally MM for month
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute:
Attribute_Label:
EL_SPE
Attribute_Definition:
Concatenation of ELEMENT and SPECIES_ID. This item links records in the SPECIES data table to records in
the BIORES and STATUS data tables.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
E#####
Enumerated_Domain_Value_Definition:
Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g.
ELEMENT = 'BIRD' and SPECIES_ID = 1; EL_SPE = 'B00001').
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Detailed_Description:
Entity_Type:
Entity_Type_Label:
SEASONAL

Entity_Type_Definition:
The data table SEASONAL contains information on the seasonal presence of each species associated with each spatial vector object. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

Entity_Type_Definition_Source:
NOAA ESI Guidelines

Attribute:

Attribute_Label:
ELEMENT

Attribute_Definition:
Major categories of biological data.

Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

BIRD

Enumerated_Domain_Value_Definition:
Birds

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

FISH

Enumerated_Domain_Value_Definition:
Fish

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

HABITAT

Enumerated_Domain_Value_Definition:
Habitats and plants

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

INVERT

Enumerated_Domain_Value_Definition:
Invertebrates

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

M_MAMMAL

Enumerated_Domain_Value_Definition:
Marine Mammals

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

REPTILE

Enumerated_Domain_Value_Definition:
Reptiles and Amphibians
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
T_MAMMAL

Enumerated_Domain_Value_Definition:
Terrestrial Mammals
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute:
Attribute_Label:
SPECIES_ID
Attribute_Definition:
Numeric identifier for each species that is unique within each element and refers to a nationwide ESI species list maintained at NOAA.
Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum:
1
Range_Domain_Maximum:
N

Attribute:
Attribute_Label:
SEASON_ID
Attribute_Definition:
Numeric identifier for the unique monthly presence and life history characteristics of each species at a given location.
Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum:
1
Range_Domain_Maximum:
N

Attribute:
Attribute_Label:
JAN
Attribute_Definition:
January
Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
X

Enumerated_Domain_Value_Definition:
Present in January
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute:
Attribute_Label:
FEB
Attribute_Definition:
February
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_DOMAIN_VALUES:
Enumerated_Domain:
    Enumerated_Domain_Value:
        X
    Enumerated_Domain_Value_Definition:
        Present in February
    Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines

Attribute:
    Attribute_Label:
        MAR
    Attribute_Definition:
        March
    Attribute_Definition_Source:
        NOAA ESI Guidelines

Attribute_DOMAIN_VALUES:
Enumerated_Domain:
    Enumerated_Domain_Value:
        X
    Enumerated_Domain_Value_Definition:
        Present in March
    Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines

Attribute:
    Attribute_Label:
        APR
    Attribute_Definition:
        April
    Attribute_Definition_Source:
        NOAA ESI Guidelines

Attribute_DOMAIN_VALUES:
Enumerated_Domain:
    Enumerated_Domain_Value:
        X
    Enumerated_Domain_Value_Definition:
        Present in April
    Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines

Attribute:
    Attribute_Label:
        MAY
    Attribute_Definition:
        May
    Attribute_Definition_Source:
        NOAA ESI Guidelines

Attribute_DOMAIN_VALUES:
Enumerated_Domain:
    Enumerated_Domain_Value:
        X
    Enumerated_Domain_Value_Definition:
        Present in May
    Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines

Attribute:
    Attribute_Label:
        JUN
    Attribute_Definition:
        June
    Attribute_Definition_Source:
        NOAA ESI Guidelines
Attribute: Attributes

Attribute: Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
X

Enumerated Domain Value Definition:
Present in June

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute: Attribute Label:
JUL

Attribute Definition:
July

Attribute Definition Source:
NOAA ESI Guidelines

Attribute: Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
X

Enumerated Domain Value Definition:
Present in July

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute: Attribute Label:
AUG

Attribute Definition:
August

Attribute Definition Source:
NOAA ESI Guidelines

Attribute: Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
X

Enumerated Domain Value Definition:
Present in August

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute: Attribute Label:
SEP

Attribute Definition:
September

Attribute Definition Source:
NOAA ESI Guidelines

Attribute: Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
X

Enumerated Domain Value Definition:
Present in September

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute: Attribute Label:
OCT

Attribute Definition:
October

Attribute Definition Source:
NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: X
  Enumerated Domain Value Definition: Present in October
  Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute:
  Attribute Label: NOV
  Attribute Definition: November
  Attribute Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: X
  Enumerated Domain Value Definition: Present in November
  Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute:
  Attribute Label: DEC
  Attribute Definition: December
  Attribute Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: X
  Enumerated Domain Value Definition: Present in December
  Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute:
  Attribute Label: EL_SPE_SEA
  Attribute Definition: Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the SEASONAL data table to records in the BIORES and BREED data tables.
  Attribute Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: E####
  Enumerated Domain Value Definition: Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').
  Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Detailed Description:
  Entity Type:
    Entity Type Label: BREED
**Entity_Type_Definition:**
The data table BREED identifies the monthly presence of certain life-history stages or activities for each species at a given location.

**Entity_Type_Definition_Source:**
NOAA ESI Guidelines

**Attribute:**
**Attribute_Label:** EL_SPE_SEA

**Attribute_Definition:**
Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the BREED data table to records in the BIORES and SEASONAL data tables.

**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**
**Enumerated_Domain:**
- **Enumerated_Domain_Value:** E########
  - **Enumerated_Domain_Value_Definition:** Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').

**Enumerated_Domain_Value_Definition_Source:**
NOAA ESI Guidelines

**Attribute:**
**Attribute_Label:** MONTH

**Attribute_Definition:**
Two-digit calendar month. Each life history stage or activity type for a particular species can have up to 12 records to account for each month of the year.

**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**
**Range_Domain:**
- **Range_Domain_Minimum:** 1
- **Range_Domain_Maximum:** 12

**Attribute:**
**Attribute_Label:** BREED1

**Attribute_Definition:**
Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED1 = nesting; if ELEMENT is "FISH" then BREED1 = spawning; if ELEMENT is "INVERT" then BREED1 = spawning; if ELEMENT is "REPTILE" then BREED1 = nesting; if ELEMENT is "M_MAMMAL" then BREED1 = mating. This attribute is not used for HABITAT or T_MAMMAL.

**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**
**Enumerated_Domain:**
- **Enumerated_Domain_Value:** Y
  - **Enumerated_Domain_Value_Definition:** Life-history stage or activity present

**Enumerated_Domain_Value_Definition_Source:**
NOAA ESI Guidelines
Life-history stage or activity not present or not reported

*Enumerated_Domain_Value_Definition_Source:*
NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**

*

*Enumerated_Domain_Value_Definition:*
Breed category not used or not appropriate for record(s) in question

*Enumerated_Domain_Value_Definition_Source:*
NOAA ESI Guidelines

**Attribute:**

**Attribute_Label:**
BREED2

**Attribute_Definition:**
Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED2 = migrating; if ELEMENT is "FISH" then BREED2 = eggs; if ELEMENT is "INVERT" then BREED2 = eggs; if ELEMENT is "REPTILE" then BREED2 = hatching; if ELEMENT is "M_MAMMAL" then BREED2 = calving. This attribute is not used for HABITAT or T_MAMMAL elements.

*Attribute_Definition_Source:*
NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**
Y

*Enumerated_Domain_Value_Definition:*
Life-history stage or activity present

*Enumerated_Domain_Value_Definition_Source:*
NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**
N

*Enumerated_Domain_Value_Definition:*
Life-history stage or activity not present or not reported

*Enumerated_Domain_Value_Definition_Source:*
NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**
*

*Enumerated_Domain_Value_Definition:*
Breed category not used or not appropriate for record(s) in question

*Enumerated_Domain_Value_Definition_Source:*
NOAA ESI Guidelines

**Attribute:**

**Attribute_Label:**
BREED3

**Attribute_Definition:**
Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED3 = molting; if ELEMENT is "FISH" then BREED3 = larvae; if ELEMENT is "INVERT" then BREED3 = larvae; if ELEMENT is "REPTILE" then BREED3 = internesting; if ELEMENT is "M_MAMMAL" then BREED3 = pupping. This attribute is not used for HABITAT or T_MAMMAL elements.

*Attribute_Definition_Source:*
NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**
Y

*Enumerated_Domain_Value_Definition:*
Delaware Bay ESI: T_MAMMAL
Life-history stage or activity present  
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: N  
Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: -  
Enumerated_Domain_Value_Definition: Breed category not used or not appropriate for record(s) in question
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
Attribute_Label: BREED4
Attribute_Definition: Life history stage or activity type, where: if ELEMENT is "FISH" then BREED4 = juveniles; if ELEMENT is "INVERT" then BREED4 = juveniles; if ELEMENT is "REPTILE" then BREED4 = juveniles; if ELEMENT is "M_MAMMAL" then BREED4 = molting. This attribute is not used for BIRD, HABITAT, or T_MAMMAL elements.
Attribute_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Y  
Enumerated_Domain_Value_Definition: Life-history stage or activity present
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: N  
Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: -  
Enumerated_Domain_Value_Definition: Breed category not used or not appropriate for record(s) in question
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
Attribute_Label: BREED5
Attribute_Definition: Life history stage or activity type, where: if ELEMENT is "FISH" then BREED5 = adults; if ELEMENT is "INVERT" then BREED5 = adults; if ELEMENT is "REPTILE" then BREED5 = adults. This attribute is not used for BIRD, M_MAMMAL, HABITAT or T_MAMMAL elements.
Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
Y
Enumerated Domain Value Definition:
Life-history stage or activity present
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
N
Enumerated Domain Value Definition:
Life-history stage or activity not present or not reported
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
-
Enumerated Domain Value Definition:
Breed category not used or not appropriate for record(s) in question
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Detailed Description:
Entity Type:
Entity Type Label:
STATUS
Entity Type Definition:
The data table STATUS identifies the species that are listed as either threatened or endangered by a state, federal, or international authority. See the Browse Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.
Entity Type Definition Source:
NOAA ESI Guidelines

Attribute:
Attribute Label:
ELEMENT
Attribute Definition:
Major categories of biological data.
Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
BIRD
Enumerated Domain Value Definition:
Birds
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
FISH
Enumerated Domain Value Definition:
Fish
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
    HABITAT
  Enumerated_Domain_Value_Definition:
    Habitats and Plants
  Enumerated_Domain_Value_Definition_Source:
    NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      INVERT
    Enumerated_Domain_Value_Definition:
      Invertebrates
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      M_MAMMAL
    Enumerated_Domain_Value_Definition:
      Marine Mammals
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      REPTILE
    Enumerated_Domain_Value_Definition:
      Reptiles and Amphibians
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      T_MAMMAL
    Enumerated_Domain_Value_Definition:
      Terrestrial Mammals
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute:
  Attribute_Label: SPECIES_ID
  Attribute_Definition:
    Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI species list maintained at NOAA.
  Attribute_Definition_Source:
    NOAA ESI Guidelines

Attribute_Domain_Values:
  Range_Domain:
    Range_Domain_Minimum:
      1
    Range_Domain_Maximum:
      N

Attribute:
  Attribute_Label: STATE
  Attribute_Definition:
    Two-letter state abbreviation.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
Attribute Domain Values:
Unrepresentable Domain:
Acceptable values change from atlas to atlas.

Attribute:
Attribute Label: COUNTRY
Attribute Definition: Three-letter country abbreviation.
Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Unrepresentable Domain:
Acceptable values change from atlas to atlas.

Attribute:
Attribute Label: S
Attribute Definition: State threatened or endangered status.
Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: E
Enumerated Domain Value Definition: Endangered on state list
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: T
Enumerated Domain Value Definition: Threatened on state list
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: C
Enumerated Domain Value Definition: Species of Special Concern
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute:
Attribute Label: F
Attribute Definition: Federal threatened or endangered status.
Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: E
Enumerated Domain Value Definition: Endangered on federal list
Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value:
    T
Enumerated Domain Value Definition:
  Threatened on federal list
Enumerated Domain Value Definition Source:
  NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value:
      C
    Enumerated Domain Value Definition:
      Species of Special Concern
    Enumerated Domain Value Definition Source:
      NOAA ESI Guidelines

Attribute:
  Attribute Label:
    I
  Attribute Definition:
    International threatened or endangered status.
  Attribute Definition Source:
    NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value:
      E
    Enumerated Domain Value Definition:
      Endangered on international list
    Enumerated Domain Value Definition Source:
      NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value:
      T
    Enumerated Domain Value Definition:
      Threatened on international list
    Enumerated Domain Value Definition Source:
      NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value:
      C
    Enumerated Domain Value Definition:
      Species of Special Concern
    Enumerated Domain Value Definition Source:
      NOAA ESI Guidelines

Attribute:
  Attribute Label:
    S_DATE
  Attribute Definition:
    Publication date of source material used to assign state status values for each species, if used.
  Attribute Definition Source:
    NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value:
      YYYYMM
    Enumerated Domain Value Definition:
      YYYY for year and optionally MM for month
    Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute:
  Attribute_Label:
    F_DATE
  Attribute_Definition:
    Publication date of source material used to assign federal status values for each species, if used.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        YYYYMM
      Enumerated_Domain_Value_Definition:
        YYYY for year and optionally MM for month
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines

Attribute:
  Attribute_Label:
    I_DATE
  Attribute_Definition:
    Publication date of source material used to assign international status values for each species, if used.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        YYYYMM
      Enumerated_Domain_Value_Definition:
        YYYY for year and optionally MM for month
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines

Attribute:
  Attribute_Label:
    EL_SPE
  Attribute_Definition:
    Concatenation of ELEMENT and SPECIES_ID. This item links the STATUS data table to the BIORES and SPECIES data tables.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        E####
      Enumerated_Domain_Value_Definition:
        Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1; EL_SPE = 'B00001').
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines

Detailed_Description:
Entity_Type:
  Entity_Type_Label:
    SOURCES
  Entity_Type_Definition:
    The data table SOURCES contains the primary sources used to create the ESI data set. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.
  Entity_Type_Definition_Source:
    NOAA ESI Guidelines

Attribute:
  Attribute_Label:
SOURCE_ID

Attribute_Definition:
Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; SOURCE_ID and ESI_SOURCE in the ESIL and ESIP data layers; and SOURCE_ID in the HYDRO data layer.

Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Range_Domain:
  Range_Domain_Minimum:
    1
  Range_Domain_Maximum:
    N

Attribute:
Attribute_Label: ORIGINATOR

Attribute_Definition:
Author or developer of source material or data set.

Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Unrepresentable_Domain:
Acceptable values change from atlas to atlas.

Attribute:
Attribute_Label: DATE_PUB

Attribute_Definition:
Date of source material, publication, or date of personal communication with expert source.

Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
    YYYYMM
  Enumerated_Domain_Value_Definition:
    YYYY for year and optionally MM for month
  Enumerated_Domain_Value_Definition_Source:
    NOAA ESI Guidelines

Attribute:
Attribute_Label: TITLE

Attribute_Definition:
Title of source material or data.

Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Unrepresentable_Domain:
Acceptable values change from atlas to atlas.

Attribute:
Attribute_Label: DATA_FORMAT

Attribute_Definition:
The format of the source material.

Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Unrepresentable_Domain:
Acceptable values change from atlas to atlas.
PUB_PLACE
Attribute_Definition:
Publication place.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Unrepresentable_Domain:
Acceptable values change from atlas to atlas.

Attribute:
Attribute_Label:
PUBLISHER
Attribute_Definition:
Publisher.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Unrepresentable_Domain:
Acceptable values change from atlas to atlas.

Attribute:
Attribute_Label:
PUBLICATION
Attribute_Definition:
Additional citation information.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Unrepresentable_Domain:
Acceptable values change from atlas to atlas.

Attribute:
Attribute_Label:
ONLINE_LINK
Attribute_Definition:
Online computer resource URL.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Unrepresentable_Domain:
Acceptable values change from atlas to atlas.

Attribute:
Attribute_Label:
SCALE
Attribute_Definition:
Description of the source scale.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Unrepresentable_Domain:
Acceptable values change from atlas to atlas.

Attribute:
Attribute_Label:
TIME_PERIOD
Attribute_Definition:
Date(s) of data collection that the source material is based upon.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Unrepresentable_Domain:
Acceptable values change from atlas to atlas.

Overview_Description:
Entity_and_Attribute_Overview:
In addition to the geographic data layers, six relational attribute or data tables (BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS) are used to store the complex biological data in the ESI data structure. The geographic data layer containing biological resource information (in this case, T_MAMMAL) is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or it can be linked directly using RARNUM. The ID is a unique combination of the atlas number (for the Delaware/New Jersey/Pennsylvania atlas, the number is 212), an element/layer specific number (BIRDS are layer 1, FISH are layer 2, etc.), and a unique record number. The RARNUM represents a unique combination of species, seasonalities, concentrations, and source information. For each of these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases. BIORES and the other relational data tables are described in the Detailed_Description sections. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way these tables relate to the geographic data layers and other attribute tables in the ESI data structure. Due to the complexity of the relational database model, the data items are also post-processed into a flat file format. This table, called BIOFILE, may be used in place of the relational files to ease simple data queries. The items in the flat file are ELEMENT, SUBELEMENT, NAME, GEN_SPEC, S, F, NHP, DATE_PUB, CONC, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC, BREED1, BREED2, BREED3, BREED4, BREED5, RARNUM, G_SOURCE, S_SOURCE, and BREED. All of these items are the same as their counterparts in the individual data tables (described in the Detailed_Description sections), except the BREED1-BREED5 and BREED items. BREED is a newly generated variable used to link to the BREED_DT data table, a modified, more compact version of the relational BREED data table. BREED1-BREED5 give a text summary of when each life stage occurs within the associated map object. The life stages referred to are the same as those listed in the Detailed_Description of the BREED data table. The link to the BIOFILE may be made through the BIO_LUT, using ID to link to RARNUM, or BIOFILE may be linked directly to the RARNUM in each of the geographic layer's attribute data tables. As mentioned, BREED_DT is an auxiliary support data table to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item. A second supporting data table is SOURCES. This is the same as the source file described above, and the link from the flat file is both G_SOURCE and S_SOURCE. It should be noted that although the flat file eases data query, it is not a normalized database structure, and actual updates performed by the states and other responsible agencies should be done using the relational data tables. The entity-relationship diagram, describing relationships between attribute tables in the ESI data structure, does NOT include the BIOFILE data table, and this data table is NOT described in a Detailed_Description section.

Entity_and_Attribute_Detail_Citation:
A complete description of entity types, attributes, and attribute values for ESI atlases can be found in the NOAA ESI Guidelines (http://response.restoration.noaa.gov/esi_guidelines).

Back To Index
Contact Electronic Mail Address: 
or.esi@noaa.gov

Resource Description:
Downloadable Data

Distribution Liability:
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format. If problems are encountered either in downloading the ESI data or if any file appears corrupted, please contact the ESI manager.

Custom Order Process:
Contact NOAA if you require the data be provided to you on CD/DVD. (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export files, Shapefiles, and a file Geodatabase (the recommended format). The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

Metadata Reference Information:
Metadata Date: 20140620

Metadata Contact:
Contact Information:
Contact Person Primary:
Contact Person: ESI Manager
Contact Organization: NOAA, Office of Response and Restoration

Contact Position:
GIS Manager

Contact Address:
Address Type: Physical Address
Address: 7600 Sand Point Way, N.E.
City: Seattle
State or Province: Washington
Postal Code: 98115-6349

Contact Voice Telephone:
(206) 526-6944

Contact Facsimile Telephone:
(206) 526-6329

Contact Electronic Mail Address:
or.esi@noaa.gov

Metadata Standard Name:
Content Standards for Digital Geospatial Metadata

Metadata Standard Version:
FGDC-STD-001-1998
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: HABITATS (Habitat Polygons)

Metadata:

- Identification Information
- Data Quality Information
- Spatial Data Organization Information
- Spatial Reference Information
- Entity and Attribute Information
- Distribution Information
- Metadata Reference Information

Identification Information:

Citation Information:

Originator:

Originator:
Department of Homeland Security, United States Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.

Publication Date:
201403

Title:
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: HABITATS (Habitat Polygons)

Edition:
Second

Geospatial Data Presentation Form:
vector digital data

Series Information:
Series Name:
None

Issue Identification:
Delaware/New Jersey/Pennsylvania

Publication Information:
Publication Place:
Seattle, Washington

Publisher:
NOAA's Ocean Service, Office of Response and Restoration (OR&R), Emergency Response Division (ERD).

Other Citation Details:

Online Linkage:
http://response.restoration.noaa.gov/esi

Description:
Abstract:
This data set contains sensitive biological resource data for terrestrial and wetland plants and sensitive plant communities in Delaware/New Jersey/Pennsylvania. Vector polygons in this data set represent rare and endangered plant and plant community distributions. Species specific abundance, seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer. This data set comprises a portion of the ESI data for Delaware/New Jersey/Pennsylvania. 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 BENTHIC data layer, part of the larger Delaware/New Jersey/Pennsylvania ESI database, for additional habitat information.

**Purpose:**
The ESI data were collected, mapped, and digitized to provide environmental data for oil spill planning and response. The Clean Water Act with amendments by the Oil Pollution Act of 1990 requires response plans for immediate and effective protection of sensitive resources.

**Time_Period_of_Content:**
**Time_Period_Information:**
**Range_of_Dates/Times:**
**Beginning_Date:**
1979
**Ending_Date:**
2013

**Currentness_Reference:**
The data were compiled during 2013-2014. The currentness dates for the data range from 1979 to 2013 and are documented in the Lineage section.

**Status:**
**Progress:**
Complete

**Maintenance_and_Update_Frequency:**
None Scheduled

**Spatial_Domain:**
**Bounding_Coordinates:**
**West_BoundingCoordinate:**
-75.75000
**East_BoundingCoordinate:**
-74.03800
**North_BoundingCoordinate:**
40.23700
**South_BoundingCoordinate:**
38.37500

**Keywords:**
**Theme:**
**Theme_Keyword_Thesaurus:**
ISO 19115 Topic Category
*Theme_Keyword:
biota
*Theme_Keyword:
environment

**Theme:**
**Theme_Keyword_Thesaurus:**
None
*Theme_Keyword:
Environmental Monitoring
*Theme_Keyword:
ESI
*Theme_Keyword:
Sensitivity maps
*Theme_Keyword:
Coastal resources
*Theme_Keyword:
Oil spill planning
*Theme_Keyword:
Coastal Zone Management

Theme_Keyword:
Wildlife

Theme_Keyword:
Habitat

Theme:
Theme_Keyword_Thesaurus:
NOS Data Explorer Topic Category

Theme_Keyword:
Environmental Monitoring

Place:
Place_Keyword_Thesaurus:
None

Place_Keyword:
Delaware/New Jersey/Pennsylvania

Access_Constraints:
None

Use_Constraints:
DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Management boundaries are not to be considered legal boundaries. Edges may have been altered for cartographic processes. Besides the above warnings, there are no use constraints on these data. Note that the ESI database should not be used to the exclusion of other pertinent data or information held by state or federal agencies or other organizations. Likewise, information contained in the database cannot be used in place of consultations with environmental, natural resource, and cultural resource agencies, or in place of field surveys. Recognize that the information contained in the ESI database represents known concentration areas or occurrences of natural, cultural, and human-use resources, but does not necessarily represent the full distribution or range of each species or resource. This is particularly important to recognize when considering potential impacts to protected resources, such as endangered species, wetlands, etc. Acknowledgment of the originators, publishers, contributors, and sources listed would be appreciated in products derived from these data.

Browse_Graphic:
Browse_Graphic_File_Name:

Browse_Graphic_File_Description:
Depicts the relationships between spatial data layers and attribute data tables for the Delaware/New Jersey/Pennsylvania ESI data.

Browse_Graphic_File_Type:
JPEG

Browse_Graphic:
Browse_Graphic_File_Name:

Browse_Graphic_File_Description:
Depicts the relationships between spatial data layers and desktop data tables for the Delaware/New Jersey/Pennsylvania ESI data.

Browse_Graphic_File_Type:
JPEG

Data_Set_Credit:
This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Office of Response and Restoration (OR&R), Emergency Response Division (ERD), Seattle, Washington; and The Department of Homeland Security, United States Coast Guard Office of Incident Management and Preparedness, Washington, D.C.

Native_Data_Set_Environment:
The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(R) (version 10.2) and SQL SERVER(R) (version 2005). The hardware configuration is PCs with Windows Operating System 7. The Spatial_Data_Organization Information section refers only to the source files in the ARC export format. The following files are included in the data set: benthic.e00, birds.e00, esil.e00, esip.e00, fish.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, soc.ecoen.e00, and t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut.e00, biofile.e00, biore.e00, breed.e00, breed_dt.e00, seasonal.e00, soc.dat.e00, soclut.e00, sources.e00, species.e00, and status.e00.
A multi-stage error checking process is used to verify both attribute accuracy and logical consistency throughout data production. The process includes a standardized data entry methodology, hardcopy data review by in-house and external resource experts, a final Quality Assurance/Quality Control (QA/QC) process, and multiple automated logical consistency checks. Quantitative data (such as densities, counts, abundances, or concentrations) provided by resource experts for inclusion in the data set may vary widely in attribute accuracy, depending upon the methodology used to collect and compile such data. For a more detailed evaluation of source data attribute accuracy, contact the sources listed in the Lineage section.

A multi-stage error checking process, described in the above Attribute_Accuracy_Report, is used to verify both attribute accuracy and logical consistency throughout data production. This process includes multiple automated logical consistency checks that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and SQL SERVER(R) to ARC/INFO(R) consistencies. After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks. In the process of checking for topological and database consistencies, new ID's and RARNUM's or HUNUM's are also generated. The new ID's are a combination of atlas number, element number, and record number. In addition, the value used to represent the element is modified to reflect the type of feature being mapped. In the case of an element that is normally represented by a point or polygon, a value of 20 is added to the standard element value for mapping of linear features. In the case where an element usually mapped as a polygon is represented by a point, a value of 30 is added to the regular element value. The RARNUM's are also modified to include the atlas number, so multiple atlases can be combined and RARNUM's remain unique. RARNUM's are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUM's are also modified to include the atlas number.

These data represent a synthesis of expert knowledge, available hardcopy documents, and digital data on rare and endangered plant, and plant community distributions. See also the BENTHIC data layer, part of the larger Delaware/New Jersey/Pennsylvania ESI database, for additional habitat information. These data do not necessarily represent all habitat occurrences in Delaware/New Jersey/Pennsylvania. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 59, Endangered plant, n/a; 60, Threatened plant, n/a; 145, Seabeach amaranth, Amaranthus pumilus; 170, Knieskern's beaked rush, Rhynchospora knieskernii; 190, Virginia jointvetch, Aeschynomene virginica; 198, Swamp-pink, Helonias bullata; 214, Rare plant, n/a; 258, Threatened wetland/aquatic plant, n/a; 1185, Acidic fen, n/a; 1186, Unique plant community, n/a; 1187, Fiveangled dodder, Cuscuta pentagona; 1188, Coast cockspur grass, Echinochloa walteri; 1189, Forked rush, Juncus dichotomus; 1190, Rare ecological community, n/a.

Spatial components for the biological data layers can come from expert interviews, hardcopy, or digital sources. Some of the spatial components of the biological data layers may have been developed using regional experts who estimate concentration areas. It is difficult to estimate the positional accuracy of such data, except to state that they are compiled on hardcopy base maps with a scale of 1:45,000. Some of the spatial components of the biological data sets are developed from pre-existing digital or hardcopy sources and reflect the positional accuracy of these original data. Note that biological resource data by their very nature are considered "fuzzy", and this should be understood when considering the positional accuracy of vector digital objects representing these resources. See the Lineage and Process_Description sections for more information on the original source data and how these data were integrated or manipulated to create the final data set.

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL (DNREC)

2012

ELEMENT OCCURRENCE RECORDS

vector digital data

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UNPUBLISHED
Type_of_Source_Media:
    EMAIL
Source_Time_Period_of_Content:
    Time_Period_Information:
        Range_of_Dates/Times:
            Beginning_Date:
                1985
            Ending_Date:
                2012
Source_Currentness_Reference:
    DATE OF SURVEY
Source_Citation_Abbreviation:
    Src_0
Source_Contribution:
    HABITATS INFORMATION
Source_Information:
Source_Citation:
    Citation_Information:
        Originator:
            DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL (DNREC) - BILL MCAVOY
        Publication_Date:
            2013
        Title:
            ACIDIC FEN COMMUNITY LOCATIONS
    Geospatial_Data_Presentation_Form:
        vector digital data
    Other_Citation_Details:
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Type_of_Source_Media:
    EMAIL
Source_Time_Period_of_Content:
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        Range_of_Dates/Times:
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                2013
            Ending_Date:
                2013
Source_Currentness_Reference:
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Source_Citation_Abbreviation:
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Source_Contribution:
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Source_Citation:
    Citation_Information:
        Originator:
            DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL (DNREC) - BILL MCAVOY
        Publication_Date:
            2013
        Title:
            DELAWARE UNIQUE PLANT COMMUNITIES DATA
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        vector digital data
    Other_Citation_Details:
        UNPUBLISHED
Type_of_Source_Media:
HABITATS INFORMATION

Source Information:
Source Citation:
Citation Information:
  Originator:
    NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF PARKS AND FORESTRY (NJDEP) OFFICE OF NATURAL LANDS MANAGEMENT
Publication Date:
  2009
Title:
  NATURAL HERITAGE GRID MAP
Geospatial Data Presentation Form:
  vector digital data
Publication Information:
  Publication Place:
    TRENTON, NJ
Publisher:
  OFFICE OF NATURAL LANDS MANAGEMENT, DIVISION OF PARKS AND FORESTRY, NJ DEPARTMENT OF ENVIRONMENTAL PROTECTION
Online Linkage:
  http://www.state.nj.us/dep/gis/stateshp.html%23NHPGRID

Type of Source Media:
  online
Source Time Period of Content:
  Time Period Information:
    Single Date/Time:
      Calendar Date:
        2009
Source Currentness Reference:
  DATE OF PUBLICATION
Source Citation Abbreviation:
  Src_5
Source Contribution:
  HABITATS INFORMATION
Source Information:
Source Citation:
Citation Information:
  Originator:
    NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF PARKS AND FORESTRY (NJDEP) OFFICE OF NATURAL LANDS MANAGEMENT
Publication Date:
  2007
Title:
  NATURAL HERITAGE PRIORITY SITES
Geospatial Data Presentation Form:
  vector digital data
Publication Information:
  Publication Place:
    TRENTON, NJ
The mapping extent was dependent upon information availability and location of mapped coastal habitats and shorelines. Two main sources of data were used to depict habitat distribution and seasonality for this data layer: 1) personal interviews with resource experts from Delaware Department of Natural Resources and Environmental Control (DNREC), NJ Department of Environmental Protection (NJDEP) Division of Parks and Forestry Office of Natural Lands Management, United States Fish & Wildlife Service (USFWS); and 2) digital data sets provided by DNREC and NJDEP. New Jersey Rare and Endangered Species Element Occurrence Data NJDEP - Office of Natural Lands Management, NJ Natural Heritage Program provided guidance and links to a publicly available 2009 shapefile. The shapefile includes a list of rare plant occurrences in an approximately 365
acre grid cell. The data are freely downloadable and contains generalized geographic locations (in the form of a grid-based polygon shapefile) of rare plant species and ecological communities for the entire state. By default, the data masks highly sensitive species and community names. In addition, a shapefile of NJ ‘Priority Sites’ (polygonal shapes based on habitat instead of grids) was downloaded and analyzed to include rare/sensitive plants and communities that were not covered in the 2009 grid-based data. Ninety-four unique NJ state endangered plants fell within the Area of Interest (AOI). In order to simplify the tabular ESI data, the individual species names were all mapped and listed in the ESI tables as ‘endangered plant’. In addition, occurrence records for four federally threatened plants fell within the NJ AOI: 1) Knieskern’s beaked rush (FT, NJ SE); 2) sea-beach amaranth (FT, NJ SE); 3) sensitive joint-vetch (FT, NJ SE); and 4) swamp-pink (FT, NJ SE). As a result of the data being publically available, exact locations of these species were already obscured by the data provider. Therefore, it was appropriate to map these species by name in the ESI in order for federally listed species to be given a high priority for protection. Delaware Rare and Endangered Species Element Occurrence Data – Rare and federally threatened plants in Delaware were mapped in part by using element occurrence data provided by DNREC. The names of two federally threatened species as well as a number of other Delaware ‘rare’ plants were obscured as per the request of the data provider. Polygons with diameters greater than 100 m were mapped as is, and all other polygons were mapped after applying a polygonal buffer and a randomized geographic shift. Additionally, some rare plant communities were added as polygonal features based on separate digital data sets provided by DNREC, including ‘acidic fens’ and select ‘unique plant communities’. The above digital and/or hardcopy sources were compiled by the project biologist to create the HABITATS data layer. Depending on the type of source data, three general approaches are used for compiling the data layer: 1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:45,000 topographic quadrangles and digitized; 2) hardcopy maps are digitized at their source scale; 3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer. The ESI, biology, and human-use data are compiled into the standard ESI digital data format. A second set of interviews with participating resource experts are conducted to review the compiled data. If necessary, edits to the HABITATS data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.

**Process Date:**
201403

**Process Contact:**

**Contact Information:**

*Contact Organization Primary:*
NOAA, Office of Response and Restoration

*Contact Person:*
ESI Manager

*Contact Address:*

*Address Type:*
Physical address

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*State or Province:*
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**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: 342

SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: Area point
Point_and_Vector_Object_Count: 341

SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: Complete chain
Point_and_Vector_Object_Count: 593

SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 75943

SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 471

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

Geographic:

Latitude_Resolution: 0.0000001
Longitude_Resolution: 0.0000001
Geographic_Coordinate_Units: Decimal degrees

Geodetic_Model:

Horizontal_Datum_Name: North American Datum of 1983
Ellipsoid_Name: Geodetic Reference System 80
Semi-major_Axis: 6378137.000000
Denominator_of_Flattening_Ratio: 298.257222

Entity_and_Attribute_Information:

Detailed_Description:

Entity_Type:

Entity_Type_Label: HABITATS.PAT
Entity_Type_Definition: The HABITATS.PAT table contains attribute information for the vector polygons in this data set representing rare and endangered plant and plant community distributions. Note that all attribute information is stored in a
series of relational files, described below and in the Overview_Description section. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the relationships between attribute tables in the ESI data structure.

**Entity_Type_Definition_Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute_Label:**

**ID**

**Attribute_Definition:**
An identifier that links vector objects in the biology data layers to records in the BIO_LUT data table. ID is a concatenation of atlas number (212), element number (3), and record number. ID values of 9999 are holes in polygons and do not contain information.

**Attribute_Definition_Source:**
NOAA

**Attribute_Domain_Values:**

**Range_Domain:**

- **Range_Domain_Minimum:** 2120300411
- **Range_Domain_Maximum:** 2120300750

**Attribute:**

**Attribute_Label:**

**RARNUM**

**Attribute_Definition:**
An identifier that links records in the BIO_LUT data table to records in the BIORES data table or the flat format BIOFILE data table. RARNUM values of 0 are holes in polygons and do not contain information.

**Attribute_Definition_Source:**
NOAA

**Attribute_Domain_Values:**

**Range_Domain:**

- **Range_Domain_Minimum:** 212001114
- **Range_Domain_Maximum:** 212001142

**Detailed_Description:**

**Entity_Type:**

**Entity_Type_Label:**

**BIO_LUT**

**Entity_Type_Definition:**
The data table BIO_LUT is a lookup table that contains items necessary for linking vector objects in the biological data layers with the BIORES data table. Note that all attribute information is stored in a series of relational files, described below and in the Overview_Description section. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

**Entity_Type_Definition_Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute_Label:**

**RARNUM**

**Attribute_Definition:**
An identifier that links records in the BIO_LUT data table to records in the BIORES data table or the flat format BIOFILE data table. RARNUM values of 0 are holes in polygons and do not contain information.

**Attribute_Definition_Source:**
NOAA

**Attribute_Domain_Values:**

**Range_Domain:**

- **Range_Domain_Minimum:** 212000001
- **Range_Domain_Maximum:** 212001295
Attribute:
  Attribute_Label:
    ID
  Attribute_Definition:
    An identifier that links vector objects in the biology data layers to records in the BIO_LUT data table. ID is a concatenation of atlas number (212), element number (3), and record number. ID values of 9999 are holes in polygons and do not contain information.
  Attribute_Definition_Source:
    NOAA
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum:
        2120100002
      Range_Domain_Maximum:
        2120900295

Detailed_Description:
Entity_Type:
  Entity_Type_Label:
    BIORES
  Entity_Type_Definition:
    The data table BIORES contains both biological attribute data and items necessary for linking vector objects in the biological data layers via the BIO_LUT data table to other associated data tables. See the Browse Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.
  Entity_Type_Definition_Source:
    NOAA ESI Guidelines

Attribute:
  Attribute_Label:
    RARNUM
  Attribute_Definition:
    An identifier that links records in the BIORES data table to records in the BIO_LUT data table or the flat format BIOFILE data table.
  Attribute_Definition_Source:
    NOAA
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum:
        212000001
      Range_Domain_Maximum:
        212001295

Attribute:
  Attribute_Label:
    SPECIES_ID
  Attribute_Definition:
    Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI species list maintained at NOAA.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum:
        1
      Range_Domain_Maximum:
        N

Attribute:
  Attribute_Label:
    CONC
  Attribute_Definition:
    The field CONC refers to the "concentration," abundance, or density value of a habitat at a particular location. No quantitative data was available for habitats, so the concentration field is blank.
Attribute Definition Source: NOAA ESI Guidelines

Attribute Domain Values:

Unrepresentable Domain:
Acceptable values change from atlas to atlas.

Attribute:

Attribute Label: SEASON_ID
Attribute Definition:
Numeric identifier for the unique monthly presence and life history characteristics of each species at a given location.

Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values:

Range Domain:

Range Domain Minimum: 1
Range Domain Maximum: N

Attribute:

Attribute Label: G_SOURCE
Attribute Definition:
Geographic source identifier that links records in the BIORES data table to records in the SOURCES data table.

Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values:

Range Domain:

Range Domain Minimum: 1
Range Domain Maximum: N

Attribute:

Attribute Label: S_SOURCE
Attribute Definition:
Seasonality source identifier that links records in the BIORES data table to records in the SOURCES data table.

Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values:

Range Domain:

Range Domain Minimum: 1
Range Domain Maximum: N

Attribute:

Attribute Label: ELEMENT
Attribute Definition:
Major categories of biological data.

Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: BIRD
Enumerated Domain Value Definition: Birds
Enumerated Domain Value Definition Source: NOAA ESI Guidelines
**Attribute Domain Values**:

**Enumerated_Domain**:

- **Enumerated_Domain_Value**: FISH
  - **Enumerated_Domain_Value_Definition**: Fish
  - **Enumerated_Domain_Value_Definition_Source**: NOAA ESI Guidelines

**Attribute Domain Values**:

**Enumerated_Domain**:

- **Enumerated_Domain_Value**: HABITAT
  - **Enumerated_Domain_Value_Definition**: Habitats and plants
  - **Enumerated_Domain_Value_Definition_Source**: NOAA ESI Guidelines

**Attribute Domain Values**:

**Enumerated_Domain**:

- **Enumerated_Domain_Value**: INVERT
  - **Enumerated_Domain_Value_Definition**: Invertebrates
  - **Enumerated_Domain_Value_Definition_Source**: NOAA ESI Guidelines

**Attribute Domain Values**:

**Enumerated_Domain**:

- **Enumerated_Domain_Value**: M_MAMMAL
  - **Enumerated_Domain_Value_Definition**: Marine mammals
  - **Enumerated_Domain_Value_Definition_Source**: NOAA ESI Guidelines

**Attribute Domain Values**:

**Enumerated_Domain**:

- **Enumerated_Domain_Value**: REPTILE
  - **Enumerated_Domain_Value_Definition**: Reptiles and Amphibians
  - **Enumerated_Domain_Value_Definition_Source**: NOAA ESI Guidelines

**Attribute Domain Values**:

**Enumerated_Domain**:

- **Enumerated_Domain_Value**: T_MAMMAL
  - **Enumerated_Domain_Value_Definition**: Terrestrial mammals
  - **Enumerated_Domain_Value_Definition_Source**: NOAA ESI Guidelines

**Attribute**:

**Attribute_Label**: EL_SPE

**Attribute Definition**:

Concatenation of ELEMENT and SPECIES_ID. This item links records in the BIORES data table to records in the SPECIES and STATUS data tables.

**Attribute Definition_Source**: NOAA ESI Guidelines

**Attribute Domain Values**:

**Enumerated_Domain**:

- **Enumerated_Domain_Value**: E#####
Enumerated_Domain_Value_Definition:
Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1; EL_SPE = 'B00001').

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute:
Attribute_Label:
EL_SPE_SEA
Attribute_Definition:
Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the BIORES data table to records in the SEASONAL and BREED data tables.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
E#######

Enumerated_Domain_Value_Definition:
Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Detailed_Description:
Entity_Type:
Entity_Type_Label:
SPECIES
Entity_Type_Definition:
The data table SPECIES identifies all species in the ESI data set. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure. Refer to the Completeness_Report for a list of layer-specific species.
Entity_Type_Definition_Source:
NOAA ESI Guidelines

Attribute:
Attribute_Label:
SPECIES_ID
Attribute_Definition:
Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI species list maintained at NOAA.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum:
1
Range_Domain_Maximum:
N
Attribute:
Attribute_Label:
NAME
Attribute_Definition:
Species common name for the entire ESI data set.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
Unrepresentable_Domain:
Acceptable values change from atlas to atlas.

Attribute:
Attribute_Label:
GEN_SPEC
**Attribute Definition:**
Species scientific name for the entire ESI data set.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

- **Unrepresentable Domain:**
  Acceptable values change from atlas to atlas.

**Attribute:**

**Attribute Label:**
ELEMENT

**Attribute Definition:**
Major categories of biological data.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

1. **Enumerated Domain:**
   - **Enumerated Domain Value:**
     BIRD
   - **Enumerated Domain Value Definition:**
     Birds
   - **Enumerated Domain Value Definition Source:**
     NOAA ESI Guidelines

2. **Enumerated Domain:**
   - **Enumerated Domain Value:**
     FISH
   - **Enumerated Domain Value Definition:**
     Fish
   - **Enumerated Domain Value Definition Source:**
     NOAA ESI Guidelines

3. **Enumerated Domain:**
   - **Enumerated Domain Value:**
     HABITAT
   - **Enumerated Domain Value Definition:**
     Habitats and plants
   - **Enumerated Domain Value Definition Source:**
     NOAA ESI Guidelines

4. **Enumerated Domain:**
   - **Enumerated Domain Value:**
     INVERT
   - **Enumerated Domain Value Definition:**
     Invertebrates
   - **Enumerated Domain Value Definition Source:**
     NOAA ESI Guidelines

5. **Enumerated Domain:**
   - **Enumerated Domain Value:**
     M_MAMMAL
   - **Enumerated Domain Value Definition:**
     Marine Mammals
   - **Enumerated Domain Value Definition Source:**
     NOAA ESI Guidelines

6. **Enumerated Domain:**
   - **Enumerated Domain Value:**
     REPTILE
   - **Enumerated Domain Value Definition:**
     Reptiles and Amphibians
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

T_MAMMAL

Enumerated_Domain_Value_Definition:

Terrestrial Mammals

Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:

Attribute_Label: SUBELEMENT

Attribute_Definition:

Element subgroup delineating a logical grouping of species.

Attribute_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

alcid

Enumerated_Domain_Value_Definition:

Alcid

Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

amphibian

Enumerated_Domain_Value_Definition:

Amphibian

Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

bivalve

Enumerated_Domain_Value_Definition:

Bivalve

Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

cephalopod

Enumerated_Domain_Value_Definition:

Cephalopod

Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

crab

Enumerated_Domain_Value_Definition:

Crab

Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
diadromous
*Enumerated_Domain_Value_Definition:* Diadromous fish
*Enumerated_Domain_Value_Definition_Source:* NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**
- diving

**Enumerated_Domain_Value_Definition:** Diving bird
*Enumerated_Domain_Value_Definition_Source:* NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**
- dolphin

**Enumerated_Domain_Value_Definition:** Dolphin
*Enumerated_Domain_Value_Definition_Source:* NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**
- e_nursery

**Enumerated_Domain_Value_Definition:** Estuarine nursery fish
*Enumerated_Domain_Value_Definition_Source:* NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**
- fish

**Enumerated_Domain_Value_Definition:** Fish
*Enumerated_Domain_Value_Definition_Source:* NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**
- freshwater

**Enumerated_Domain_Value_Definition:** Freshwater fish
*Enumerated_Domain_Value_Definition_Source:* NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**
- gastropod

**Enumerated_Domain_Value_Definition:** Gastropod
*Enumerated_Domain_Value_Definition_Source:* NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**
- gull_tern

**Enumerated_Domain_Value_Definition:** Gull or tern
*Enumerated_Domain_Value_Definition_Source:*
NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value: insect
    Enumerated Domain Value Definition: Insect
    Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value: invert
    Enumerated Domain Value Definition: Invertebrate
    Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value: lobster
    Enumerated Domain Value Definition: Lobster
    Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value: m_benthic
    Enumerated Domain Value Definition: Marine benthic fish
    Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value: m_pelagic
    Enumerated Domain Value Definition: Marine pelagic fish
    Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value: passerine
    Enumerated Domain Value Definition: Passerine bird
    Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value: pelagic
    Enumerated Domain Value Definition: Pelagic bird
    Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value:
pinniped
Enumerated_Domain_Value_Definition:
Pinniped
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
plant
Enumerated_Domain_Value_Definition:
Plant
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
raptor
Enumerated_Domain_Value_Definition:
Raptor
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
sav
Enumerated_Domain_Value_Definition:
Submerged aquatic vegetation
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
shorebird
Enumerated_Domain_Value_Definition:
Shorebird
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
sm_mammal
Enumerated_Domain_Value_Definition:
Small mammal
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
snake
Enumerated_Domain_Value_Definition:
Snake
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
turtle
Enumerated_Domain_Value_Definition:
Turtle
Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

- **Enumerated Domain Value:** wading
  
  **Enumerated Domain Value Definition:** Wading bird
  
  **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

**Attribute Domain Values:**

- **Enumerated Domain:**
  
  - **Enumerated Domain Value:** waterfowl
  
  **Enumerated Domain Value Definition:** Waterfowl
  
  **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

**Attribute Domain Values:**

- **Enumerated Domain:**
  
  - **Enumerated Domain Value:** wetland
  
  **Enumerated Domain Value Definition:** Wetland
  
  **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

**Attribute Domain Values:**

- **Enumerated Domain:**
  
  - **Enumerated Domain Value:** whale
  
  **Enumerated Domain Value Definition:** Whale
  
  **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

**Attribute:**

- **Attribute Label:** NHP
  
  **Attribute Definition:** Natural Heritage Program global ranking.
  
  **Attribute Definition Source:** Network of Natural Heritage Program

**Attribute Domain Values:**

**Codeset Domain:**

- **Codeset Name:** NHP Global Conservation Status Rank

**Attribute:**

- **Attribute Label:** DATE_PUB
  
  **Attribute Definition:** Date of NHP listing.
  
  **Attribute Definition Source:** NOAA ESI Guidelines

**Attribute Domain Values:**

- **Enumerated Domain:** YYYYMM
  
  **Enumerated Domain Value Definition:** YYYY for year and optionally MM for month
  
  **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**

0

**Enumerated Domain Value Definition:**

Date unspecified

**Enumerated Domain Value Definition Source:**

NOAA ESI Guidelines

**Attribute:**

**Attribute Label:**

EL_SPE

**Attribute Definition:**

Concatenation of ELEMENT and SPECIES_ID. This item links records in the SPECIES data table to records in the BIORES and STATUS data tables.

**Attribute Definition Source:**

NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**

E#####

**Enumerated Domain Value Definition:**

Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1; EL_SPE = 'B00001').

**Enumerated Domain Value Definition Source:**

NOAA ESI Guidelines

**Detailed Description:**

**Entity Type:**

**Entity Type Label:**

SEASONAL

**Entity Type Definition:**

The data table SEASONAL contains information on the seasonal presence of each species associated with each spatial vector object. See the Browse Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

**Entity Type Definition Source:**

NOAA ESI Guidelines

**Attribute:**

**Attribute Label:**

ELEMENT

**Attribute Definition:**

Major categories of biological data.

**Attribute Definition Source:**

NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**

BIRD

**Enumerated Domain Value Definition:**

Birds

**Enumerated Domain Value Definition Source:**

NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**

FISH

**Enumerated Domain Value Definition:**

Fish

**Enumerated Domain Value Definition Source:**

NOAA ESI Guidelines

**Attribute Domain Values:**
Enumerated_Domain:
   Enumerated_Domain_Value:
      HABITAT
   Enumerated_Domain_Value_Definition:
      Habitats and plants
   Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
   Enumerated_Domain_Value:
      INVERT
   Enumerated_Domain_Value_Definition:
      Invertebrates
   Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
   Enumerated_Domain_Value:
      M_MAMMAL
   Enumerated_Domain_Value_Definition:
      Marine Mammals
   Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
   Enumerated_Domain_Value:
      REPTILE
   Enumerated_Domain_Value_Definition:
      Reptiles and Amphibians
   Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
   Enumerated_Domain_Value:
      T_MAMMAL
   Enumerated_Domain_Value_Definition:
      Terrestrial Mammals
   Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines
Attribute:
   Attribute_Label:
      SPECIES_ID
   Attribute_Definition:
      Numeric identifier for each species that is unique within each element and refers to a nationwide ESI species list maintained at NOAA.
   Attribute_Definition_Source:
      NOAA ESI Guidelines
Attribute_Domain_Values:
   Range_Domain:
      Range_Domain_Minimum:
      1
      Range_Domain_Maximum:
      N
Attribute:
   Attribute_Label:
      SEASON_ID
   Attribute_Definition:
      Numeric identifier for the unique monthly presence and life history characteristics of each species at a given location.
   Attribute_Definition_Source:
NOAA ESI Guidelines

**Attribute**: JAN
**Attribute_Label**: JAN
**Attribute_Definition**: January
**Attribute_Definition_Source**: NOAA ESI Guidelines
**Attribute_Domain_Values**: 
**Enumerated_Domain**: 
**Enumerated_Domain_Value**: X
**Enumerated_Domain_Value_Definition**: Present in January
**Enumerated_Domain_Value_Definition_Source**: NOAA ESI Guidelines

**Attribute**: FEB
**Attribute_Label**: FEB
**Attribute_Definition**: February
**Attribute_Definition_Source**: NOAA ESI Guidelines
**Attribute_Domain_Values**: 
**Enumerated_Domain**: 
**Enumerated_Domain_Value**: X
**Enumerated_Domain_Value_Definition**: Present in February
**Enumerated_Domain_Value_Definition_Source**: NOAA ESI Guidelines

**Attribute**: MAR
**Attribute_Label**: MAR
**Attribute_Definition**: March
**Attribute_Definition_Source**: NOAA ESI Guidelines
**Attribute_Domain_Values**: 
**Enumerated_Domain**: 
**Enumerated_Domain_Value**: X
**Enumerated_Domain_Value_Definition**: Present in March
**Enumerated_Domain_Value_Definition_Source**: NOAA ESI Guidelines

**Attribute**: APR
**Attribute_Label**: APR
**Attribute_Definition**: April
**Attribute_Definition_Source**: NOAA ESI Guidelines
**Attribute_Domain_Values**: 
Enumerated_Domain:

Enumerated_Domain_Value:
X

Enumerated_Domain_Value_Definition:
Present in April

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute:

Attribute_Label:
MAY

Attribute_Definition:
May

Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:
X

Enumerated_Domain_Value_Definition:
Present in May

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute:

Attribute_Label:
JUN

Attribute_Definition:
June

Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:
X

Enumerated_Domain_Value_Definition:
Present in June

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute:

Attribute_Label:
JUL

Attribute_Definition:
July

Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:
X

Enumerated_Domain_Value_Definition:
Present in July

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute:

Attribute_Label:
AUG

Attribute_Definition:
August

Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
<table>
<thead>
<tr>
<th>Attribute</th>
<th>Attribute Label</th>
<th>Attribute Definition</th>
<th>Attribute Definition Source</th>
<th>Attribute Domain Values</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SEP</td>
<td>September</td>
<td>NOAA ESI Guidelines</td>
<td>Present in September</td>
</tr>
<tr>
<td></td>
<td>OCT</td>
<td>October</td>
<td>NOAA ESI Guidelines</td>
<td>Present in October</td>
</tr>
<tr>
<td></td>
<td>NOV</td>
<td>November</td>
<td>NOAA ESI Guidelines</td>
<td>Present in November</td>
</tr>
<tr>
<td></td>
<td>DEC</td>
<td>December</td>
<td>NOAA ESI Guidelines</td>
<td></td>
</tr>
</tbody>
</table>
Enumerated_Domain:
    Enumerated_Domain_Value:
        X
    Enumerated_Domain_Value_Definition:
        Present in December
    Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines

Attribute:
    Attribute_Label:
        EL_SPE_SEA
    Attribute_Definition:
        Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the SEASONAL data table to records in the BIORES and BREED data tables.
    Attribute_Definition_Source:
        NOAA ESI Guidelines
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value:
                E####
            Enumerated_Domain_Value_Definition:
                Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').
            Enumerated_Domain_Value_Definition_Source:
                NOAA ESI Guidelines

Detailed_Description:

Entity_Type:
    Entity_Type_Label:
        BREED
    Entity_Type_Definition:
        The data table BREED identifies the monthly presence of certain life-history stages or activities for each species at a given location.
    Entity_Type_Definition_Source:
        NOAA ESI Guidelines

Attribute:
    Attribute_Label:
        EL_SPE_SEA
    Attribute_Definition:
        Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the BREED data table to records in the BIORES and SEASONAL data tables.
    Attribute_Definition_Source:
        NOAA ESI Guidelines
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value:
                E####
            Enumerated_Domain_Value_Definition:
                Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').
            Enumerated_Domain_Value_Definition_Source:
                NOAA ESI Guidelines

Attribute:
    Attribute_Label:
        MONTH
    Attribute_Definition:
        Two-digit calendar month. Each life history stage or activity type for a particular species can have up to 12 records to account for each month of the year.
    Attribute_Definition_Source:
        NOAA ESI Guidelines
Attribute Domain Values:
  Range Domain:
    Range Domain Minimum:
      1
    Range Domain Maximum:
      12

Attribute:
  Attribute Label:
    BREED1

Attribute Definition:
  Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED1 = nesting; if ELEMENT is "FISH" then BREED1 = spawning; if ELEMENT is "INVERT" then BREED1 = spawning; if ELEMENT is "REPTILE" then BREED1 = nesting; if ELEMENT is "M_MAMMAL" then BREED1 = mating. This attribute is not used for HABITAT or T_MAMMAL.

Attribute Definition Source:
  NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value:
      Y
    Enumerated Domain Value Definition:
      Life-history stage or activity present
    Enumerated Domain Value Definition Source:
      NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value:
      N
    Enumerated Domain Value Definition:
      Life-history stage or activity not present or not reported
    Enumerated Domain Value Definition Source:
      NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value:
      -
      Enumerated Domain Value Definition:
        Breed category not used or not appropriate for record(s) in question
    Enumerated Domain Value Definition Source:
      NOAA ESI Guidelines

Attribute:
  Attribute Label:
    BREED2

Attribute Definition:
  Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED2 = migrating; if ELEMENT is "FISH" then BREED2 = eggs; if ELEMENT is "INVERT" then BREED2 = eggs; if ELEMENT is "REPTILE" then BREED2 = hatching; if ELEMENT is "M_MAMMAL" then BREED2 = calving. This attribute is not used for HABITAT or T_MAMMAL elements.

Attribute Definition Source:
  NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value:
      Y
    Enumerated Domain Value Definition:
      Life-history stage or activity present
    Enumerated Domain Value Definition Source:
      NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
**Enumerated_Domain_Value:**
N
**Enumerated_Domain_Value_Definition:**
Life-history stage or activity not present or not reported

**Enumerated_Domain_Value_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**
-

**Enumerated_Domain_Value_Definition:**
Breed category not used or not appropriate for record(s) in question

**Enumerated_Domain_Value_Definition_Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute_Label:**
BREED3

**Attribute_Definition:**
Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED3 = molting; if ELEMENT is "FISH" then BREED3 = larval; if ELEMENT is "INVERT" then BREED3 = larvae; if ELEMENT is "REPTILE" then BREED3 = internesting; if ELEMENT is "M_MAMMAL" then BREED3 = pupping. This attribute is not used for HABITAT or T_MAMMAL elements.

**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**
Y

**Enumerated_Domain_Value_Definition:**
Life-history stage or activity present

**Enumerated_Domain_Value_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**
N

**Enumerated_Domain_Value_Definition:**
Life-history stage or activity not present or not reported

**Enumerated_Domain_Value_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**
-

**Enumerated_Domain_Value_Definition:**
Breed category not used or not appropriate for record(s) in question

**Enumerated_Domain_Value_Definition_Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute_Label:**
BREED4

**Attribute_Definition:**
Life history stage or activity type, where: if ELEMENT is "FISH" then BREED4 = juveniles; if ELEMENT is "INVERT" then BREED4 = juveniles; if ELEMENT is "REPTILE" then BREED4 = juveniles; if ELEMENT is "M_MAMMAL" then BREED4 = molting. This attribute is not used for BIRD, HABITAT, or T_MAMMAL elements.

**Attribute_Definition_Source:**
NOAA ESI Guidelines

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:**


Enumerated_Domain_Value:
Y

Enumerated_Domain_Value_Definition:
Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:

Enumerated_Domain_Value:
N

Enumerated_Domain_Value_Definition:
Life-history stage or activity not present or not reported

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:

Enumerated_Domain_Value:
-

Enumerated_Domain_Value_Definition:
Breed category not used or not appropriate for record(s) in question

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute:
Attribute_Label:
BREED5

Attribute_Definition:
Life history stage or activity type, where: if ELEMENT is "FISH" then BREED5 = adults; if ELEMENT is "INVERT" then BREED5 = adults; if ELEMENT is "REPTILE" then BREED5 = adults. This attribute is not used for BIRD, M_MAMMAL, HABITAT or T_MAMMAL elements.

Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:

Enumerated_Domain_Value:
Y

Enumerated_Domain_Value_Definition:
Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:

Enumerated_Domain_Value:
N

Enumerated_Domain_Value_Definition:
Life-history stage or activity not present or not reported

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:

Enumerated_Domain_Value:
-

Enumerated_Domain_Value_Definition:
Breed category not used or not appropriate for record(s) in question

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Detailed_Description:
Entity_Type:

Entity_Type_Label:
STATUS

Entity_Type_Definition:
The data table STATUS identifies the species that are listed as either threatened or endangered by a state, federal, or international authority. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

**Entity Type Definition Source:**
NOAA ESI Guidelines

**Attribute:**

**Attribute Label:**
ELEMENT

**Attribute Definition:**
Major categories of biological data.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**
BIRD

**Enumerated Domain Value Definition:**
Birds

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**
FISH

**Enumerated Domain Value Definition:**
Fish

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**
HABITAT

**Enumerated Domain Value Definition:**
Habitats and Plants

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**
INVERT

**Enumerated Domain Value Definition:**
Invertebrates

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**
M_MAMMAL

**Enumerated Domain Value Definition:**
Marine Mammals

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**
REPTILE

**Enumerated Domain Value Definition:**
Reptiles and Amphibians

**Enumerated Domain Value Definition Source:**
NOAA ESI Guidelines
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      T_MAMMAL
    Enumerated_Domain_Value_Definition:
      Terrestrial Mammals
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute:
  Attribute_Label:
    SPECIES_ID
  Attribute_Definition:
    Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI species list maintained at NOAA.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum:
        1
      Range_Domain_Maximum:
        N

Attribute:
  Attribute_Label:
    STATE
  Attribute_Definition:
    Two-letter state abbreviation.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Unrepresentable_Domain:
      Acceptable values change from atlas to atlas.

Attribute:
  Attribute_Label:
    COUNTRY
  Attribute_Definition:
    Three-letter country abbreviation.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Unrepresentable_Domain:
      Acceptable values change from atlas to atlas.

Attribute:
  Attribute_Label:
    S
  Attribute_Definition:
    State threatened or endangered status.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        E
      Enumerated_Domain_Value_Definition:
        Endangered on state list
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
T

Enumerated_Domain_Value_Definition:
Threatened on state list

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
C

Enumerated_Domain_Value_Definition:
Species of Special Concern

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute:
Attribute_Label:
F

Attribute_Definition:
Federal threatened or endangered status.

Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
E

Enumerated_Domain_Value_Definition:
Endangered on federal list

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
T

Enumerated_Domain_Value_Definition:
Threatened on federal list

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
C

Enumerated_Domain_Value_Definition:
Species of Special Concern

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute:
Attribute_Label:
I

Attribute_Definition:
International threatened or endangered status.

Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
E

Enumerated_Domain_Value_Definition:
Endangered on international list

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
    T
Enumerated_Domain_Value_Definition:
  Threatened on international list
Enumerated_Domain_Value_Definition_Source:
  NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      C
    Enumerated_Domain_Value_Definition:
      Species of Special Concern
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute:
  Attribute_Label:
    S_DATE
  Attribute_Definition:
    Publication date of source material used to assign state status values for each species, if used.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        YYYYMM
      Enumerated_Domain_Value_Definition:
        YYYY for year and optionally MM for month
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines

Attribute:
  Attribute_Label:
    F_DATE
  Attribute_Definition:
    Publication date of source material used to assign federal status values for each species, if used.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        YYYYMM
      Enumerated_Domain_Value_Definition:
        YYYY for year and optionally MM for month
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines

Attribute:
  Attribute_Label:
    I_DATE
  Attribute_Definition:
    Publication date of source material used to assign international status values for each species, if used.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        YYYYMM
      Enumerated_Domain_Value_Definition:
        YYYY for year and optionally MM for month
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines
Attribute:
Attribute_Label:
EL_SPE
Attribute_Definition:
Concatenation of ELEMENT and SPECIES_ID. This item links the STATUS data table to the BIORES and SPECIES data tables.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      E####
    Enumerated_Domain_Value_Definition:
      Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1; EL_SPE = 'B00001').
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Detailed_Description:
Entity_Type:
  Entity_Type_Label:
    SOURCES
  Entity_Type_Definition:
    The data table SOURCES contains the primary sources used to create the ESI data set. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.
  Entity_Type_Definition_Source:
    NOAA ESI Guidelines

Attribute:
Attribute_Label:
SOURCE_ID
Attribute_Definition:
Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; SOURCE_ID and ESI_SOURCE in the ESIL and ESIP data layers; and SOURCE_ID in the HYDRO data layer.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
  Range_Domain:
    Range_Domain_Minimum:
      1
    Range_Domain_Maximum:
      N

Attribute:
Attribute_Label:
ORIGINATOR
Attribute_Definition:
Author or developer of source material or data set.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
  Unrepresentable_Domain:
    Acceptable values change from atlas to atlas.

Attribute:
Attribute_Label:
DATE_PUB
Attribute_Definition:
Date of source material, publication, or date of personal communication with expert source.
Attribute_Definition_Source:
NOAA ESI Guidelines
Attribute_Domain_Values:
**Enumerated Domain:**
- **Enumerated Domain Value:** YYYYMM
- **Enumerated Domain Value Definition:** YYYY for year and optionally MM for month
- **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

**Attribute:**
- **Attribute Label:** TITLE
- **Attribute Definition:** Title of source material or data.
- **Attribute Definition Source:** NOAA ESI Guidelines
- **Attribute Domain Values:** Unrepresentable Domain
  Acceptable values change from atlas to atlas.

**Attribute:**
- **Attribute Label:** DATA_FORMAT
- **Attribute Definition:** The format of the source material.
- **Attribute Definition Source:** NOAA ESI Guidelines
- **Attribute Domain Values:** Unrepresentable Domain
  Acceptable values change from atlas to atlas.

**Attribute:**
- **Attribute Label:** PUB_PLACE
- **Attribute Definition:** Publication place.
- **Attribute Definition Source:** NOAA ESI Guidelines
- **Attribute Domain Values:** Unrepresentable Domain
  Acceptable values change from atlas to atlas.

**Attribute:**
- **Attribute Label:** PUBLISHER
- **Attribute Definition:** Publisher.
- **Attribute Definition Source:** NOAA ESI Guidelines
- **Attribute Domain Values:** Unrepresentable Domain
  Acceptable values change from atlas to atlas.

**Attribute:**
- **Attribute Label:** PUBLICATION
- **Attribute Definition:** Additional citation information.
- **Attribute Definition Source:** NOAA ESI Guidelines
- **Attribute Domain Values:** Unrepresentable Domain
  Acceptable values change from atlas to atlas.

**Attribute:**
- **Attribute Label:** ONLINE_LINK
Attribute Definition:
Online computer resource URL.
Attribute Definition Source:
NOAA ESI Guidelines
Attribute Domain Values:
Unrepresentable Domain:
Acceptable values change from atlas to atlas.

Attribute:
Attribute Label:
SCALE
Attribute Definition:
Description of the source scale.
Attribute Definition Source:
NOAA ESI Guidelines
Attribute Domain Values:
Unrepresentable Domain:
Acceptable values change from atlas to atlas.

Attribute:
Attribute Label:
TIME_PERIOD
Attribute Definition:
Date(s) of data collection that the source material is based upon.
Attribute Definition Source:
NOAA ESI Guidelines
Attribute Domain Values:
Unrepresentable Domain:
Acceptable values change from atlas to atlas.

Overview Description:
Entity and Attribute Overview:
In addition to the geographic data layers, six relational attribute or data tables (BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS) are used to store the complex biological data in the ESI data structure. The geographic data layer containing biological resource information (in this case, HABITATS) is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or it can be linked directly using RARNUM. The ID is a unique combination of the atlas number (for the Delaware/New Jersey/Pennsylvania atlas, the number is 212), an element/layer specific number (BIRDS are layer 1, FISH are layer 2, etc.), and a unique record number. The RARNUM represents a unique combination of species, seasonalities, concentrations, and source information. For each of these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases. BIORES and the other relational data tables are described in detail. See the Browse Graphic section for a link to the entity-relationship diagram, which describes the way these tables relate to the geographic data layers and other attribute tables in the ESI data structure. Due to the complexity of the relational database model, the data items are also post-processed into a flat file format. This table, called BIOFILE, may be used in place of the relational files to ease simple data queries. The items in the flat file are ELEMENT, SUBELEMENT, NAME, GEN_SPEC, S, F, NHP, DATE_PUB, CONC, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SER, OCT, NOV, DEC, BREED1, BREED2, BREED3, BREED4, BREED5, RARNUM, G_SOURCE, S_SOURCE, and BREED. All of these items are the same as their counterparts in the individual data tables, except the BREED1-BREED5 and BREED items. BREED is a newly generated variable used to link to the BREED_DT data table, a modified, more compact version of the relational BREED data table. BREED1-BREED5 give a text summary of when each life stage occurs within the associated map object. The life stages referred to are the same as those listed in the Detailed Description of the BREED data table. The link to the BIOFILE may be made through the BIO_LUT, using ID to link to RARNUM, or BIOFILE may be linked directly to the RARNUM in each of the geographic layer's attribute data tables. As mentioned, BREED_DT is an auxiliary support data table to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item. A second supporting data table is SOURCES. This is the same as the source file described above, and the link from the flat file is both G_SOURCE and S_SOURCE. It should be noted that although the flat file eases data query, it is not a normalized database structure, and actual updates performed by the states and other responsible agencies should be done using the relational data tables. The entity-relationship diagram describing relationships between attribute tables in the ESI data structure does NOT include the BIOFILE data table, and this data table is NOT described in detail.

Entity and Attribute Detail Citation:
A complete description of entity types, attributes, and attribute values for ESI atlases can be found in the NOAA ESI
Distribution Information:

Distributor:
Contact Information:

Contact Person Primary:

Contact Person:
ESI Manager

Contact Organization:
NOAA, Office of Response and Restoration

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Address Type:
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Washington
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98115-6349

Contact Voice Telephone:
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Contact Facsimile Telephone:
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Custom Order Process:
Contact NOAA if you require the data be provided to you on CD/DVD. (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export files, Shapefiles, and a file Geodatabase (the recommended format). The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

Metadata Reference Information:

Metadata Date:
20140620

Metadata Contact:
Contact Information:
Contact Person Primary:

Contact Person:
ESI Manager

Contact Organization:
NOAA, Office of Response and Restoration

Contact Position:
GIS Manager

Contact Address:
Address_Type: Physical Address
Address: 7600 Sand Point Way, N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: orr.esi@noaa.gov

Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: BENTHIC (Benthic Polygons)

Metadata:

- **Identification Information**
- **Data Quality Information**
- **Spatial Data Organization Information**
- **Spatial Reference Information**
- **Entity and Attribute Information**
- **Distribution Information**
- **Metadata Reference Information**

**Identification Information:**

**Citation Information:**

**Originator:**

**Originator:**
Department of Homeland Security, United States Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.

**Publication Date:**
201403

**Title:**
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware/New Jersey/Pennsylvania: BENTHIC (Benthic Polygons)

**Edition:**
Second

**Geospatial Data Presentation Form:**
vector digital data

**Series Information:**

**Series Name:**
None

**Issue Identification:**
Delaware/New Jersey/Pennsylvania

**Publication Information:**

**Publication Place:**
Seattle, Washington

**Publisher:**
NOAA's Ocean Service, Office of Response and Restoration (OR&R), Emergency Response Division (ERD).

**Other Citation Details:**

**Online Linkage:**

http://response.restoration.noaa.gov/esi

http://response.restoration.noaa.gov/esi_download

http://response.restoration.noaa.gov/esi_guidelines

**Description:**

**Abstract:**
This data set contains sensitive biological resource data for submerged aquatic vegetation for Delaware/New Jersey/Pennsylvania. Vector polygons in this data set represent eelgrass (Zostera marina), widgeon grass (Ruppia maritima), and water celery (Vallisneria americana) distribution. Species specific abundance, seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer. This data set comprises a portion of the ESI data for Delaware/New Jersey/Pennsylvania. 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 HABITATS data layer, part of the larger Delaware/New Jersey/Pennsylvania ESI database, for additional habitat information.

**Purpose:**
The ESI data were collected, mapped, and digitized to provide environmental data for oil spill planning and response. The Clean Water Act with amendments by the Oil Pollution Act of 1990 requires response plans for immediate and effective protection of sensitive resources.

**Time_Period_of_Content:**
**Time_Period_Information:**
**Range_of_Dates/Times:**
- **Beginning_Date:** 1979
- **Ending_Date:** 2013

**Currentness_Reference:**
The data were compiled during 2013-2014. The currentness dates for the data range from 1979 to 2013 and are documented in the Lineage section.

**Status:**

**Progress:**
Complete

**Maintenance_and_Update_Frequency:**
None Scheduled

**Spatial_Domain:**
**Bounding_Coordinates:**
- **West_BoundingCoordinate:** -75.75000
- **East_BoundingCoordinate:** -74.03800
- **North_BoundingCoordinate:** 40.23700
- **South_BoundingCoordinate:** 38.37500

**Keywords:**

**Theme:**
- **Theme_Keyword_Thesaurus:** ISO 19115 Topic Category
- **Theme_Keyword:** biota
- **Theme_Keyword:** environment

**Theme:**
- **Theme_Keyword_Thesaurus:** None
- **Theme_Keyword:** Environmental Monitoring
- **Theme_Keyword:** ESI
- **Theme_Keyword:** Sensitivity maps
- **Theme_Keyword:** Coastal resources
- **Theme_Keyword:** Oil spill planning
- **Theme_Keyword:**
Coastal Zone Management

Theme_Keyword:
Wildlife

Theme_Keyword:
Benthic

Theme_Keyword:
Submerged Aquatic Vegetation (SAV)

Theme:
Theme_Keyword_Thesaurus:
NOS Data Explorer Topic Category
Theme_Keyword:
Environmental Monitoring

Place:
Place_Keyword_Thesaurus:
None
Place_Keyword:
Delaware/New Jersey/Pennsylvania

Access_Constraints:
None

Use_Constraints:
DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Management boundaries are not to be considered legal boundaries. Edges may have been altered for cartographic processes. Besides the above warnings, there are no use constraints on these data. Note that the ESI database should not be used to the exclusion of other pertinent data or information held by state or federal agencies or other organizations. Likewise, information contained in the database cannot be used in place of consultations with environmental, natural resource, and cultural resource agencies, or in place of field surveys. Recognize that the information contained in the ESI database represents known concentration areas or occurrences of natural, cultural, and human-use resources, but does not necessarily represent the full distribution or range of each species or resource. This is particularly important to recognize when considering potential impacts to protected resources, such as endangered species, wetlands, etc. Acknowledgment of the originators, publishers, contributors, and sources listed would be appreciated in products derived from these data.

Browse_Graphic:
Browse_Graphic_File_name:
Browse_Graphic_File_Description:
Depicts the relationships between spatial data layers and attribute data tables for the Delaware/New Jersey/Pennsylvania ESI data.
Browse_Graphic_File_Type:
JPEG

Browse_Graphic:
Browse_Graphic_File_name:
Browse_Graphic_File_Description:
Depicts the relationships between spatial data layers and desktop data tables for the Delaware/New Jersey/Pennsylvania ESI data.
Browse_Graphic_File_Type:
JPEG

Data_Set_Credit:
This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Office of Response and Restoration (OR&R), Emergency Response Division (ERD), Seattle, Washington; and The Department of Homeland Security, United States Coast Guard Office of Incident Management and Preparedness, Washington, D.C.

Native_Data_Set_Environment:
The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(R) (version 10.2) and SQL SERVER(R) (version 2005). The hardware configuration is PCs with Windows Operating System 7. The Spatial_Data Organization Information section refers only to the source files in the ARC export format. The following files are included in the data set: benthic.e00, birds.e00, esil.e00, esip.e00, fish.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, soccon.e00, and t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut.e00, biofile.e00, biore.e00, breed.e00, breed_dt.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, sources.e00, species.e00, and status.e00.
Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report:

A multi-stage error checking process is used to verify both attribute accuracy and logical consistency throughout data production. The process includes a standardized data entry methodology, hardcopy data review by in-house and external resource experts, a final Quality Assurance/Quality Control (QA/QC) process, and multiple automated logical consistency checks. Quantitative data (such as densities, counts, abundances, or concentrations) provided by resource experts for inclusion in the data set may vary widely in attribute accuracy, depending upon the methodology used to collect and compile such data. For a more detailed evaluation of source data attribute accuracy, contact the sources listed in the Lineage section.

Logical_Consistency_Report:

A multi-stage error checking process, described in the above Attribute_Accuracy_Report, is used to verify both attribute accuracy and logical consistency throughout data production. This process includes multiple automated logical consistency checks that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and SQL SERVER(R) to ARC/INFO(R) consistencies. After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks. In the process of checking for topological and database consistencies, new ID's and RARNUM's or HUNUM's are also generated. The new ID's are a combination of atlas number, element number, and record number. In addition, the value used to represent the element is modified to reflect the type of feature being mapped. In the case of an element that is normally represented by a point or polygon, a value of 20 is added to the standard element value for mapping of linear features. In the case where an element usually mapped as a polygon is represented by a point, a value of 30 is added to the regular element value. The RARNUM's are also modified to include the atlas number, so multiple atlases can be combined and RARNUM's remain unique. RARNUM's are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUM's are also modified to include the atlas number.

Completeness_Report:

These data represent a synthesis of expert knowledge, survey data, and digital data on eelgrass (Zostera marina), widgeon grass (Ruppia maritima), and water celery (Vallisneria americana) distribution. See also the HABITATS data layer, part of the larger Delaware/New Jersey/Pennsylvania ESI database, for additional habitat information. These data do not necessarily represent all benthic occurrences in Delaware/New Jersey/Pennsylvania. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 1, Eelgrass, Zostera marina; 80, Widgeon grass, Ruppia maritima; 83, Water celery, Vallisneria americana; 609, Submerged aquatic vegetation, n/a.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

Spatial components for the biological data layers can come from expert interviews, hardcopy, or digital sources. Some of the spatial components of the biological data layers may have been developed using regional experts who estimate concentration areas. It is difficult to estimate the positional accuracy of such data, except to state that they are compiled on hardcopy base maps with a scale of 1:45,000. Some of the spatial components of the biological data sets are developed from pre-existing digital or hardcopy sources and reflect the positional accuracy of these original data. Note that biological resource data by their very nature are considered "fuzzy", and this should be understood when considering the positional accuracy of vector digital objects representing these resources. See the Lineage and Process_Description sections for more information on the original source data and how these data were integrated or manipulated to create the final data set.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator:

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND CONTROL (DNREC), COASTAL PROGRAMS

Publication_Date:

2013

Title:

DELAWARE COASTAL PROGRAMS ZOSTERA MARINA RESTORATION PLOTS

Geospatial_Data_Presentation_Form:

vector digital data

Other_Citation_Details:
UNPUBLISHED

**Type of Source Media:**
- EMAIL

**Source Time Period of Content:**

**Time Period Information:**
- **Range of Dates/Times:**
  - **Beginning Date:** 1999
  - **Ending Date:** 2004

**Source Currentness Reference:**
- DATE OF SURVEY

**Source Citation Abbreviation:**
- Src_0

**Source Contribution:**
- BENTHIC INFORMATION

**Source Information:**

**Source Citation:**

**Citation Information:**

**Originator:**
- DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL (DNREC)

**Publication Date:**
- 2013

**Title:**
- DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL DATA COLLECTION MEETING

**Geospatial Data Presentation Form:**
- EXPERT KNOWLEDGE

**Other Citation Details:**
- UNPUBLISHED

**Type of Source Media:**
- PERSONAL COMMUNICATION

**Source Time Period of Content:**

**Time Period Information:**
- **Range of Dates/Times:**
  - **Beginning Date:** 2013
  - **Ending Date:** 2013

**Source Currentness Reference:**
- DATE OF COMMUNICATION

**Source Citation Abbreviation:**
- Src_1

**Source Contribution:**
- BENTHIC INFORMATION

**Source Information:**

**Source Citation:**

**Citation Information:**

**Originator:**
- DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL (DNREC) - BILL MCAVOY

**Publication Date:**
- 2013

**Title:**
- DELAWARE UNIQUE PLANT COMMUNITIES DATA

**Geospatial Data Presentation Form:**
- vector digital data

**Other Citation Details:**
- UNPUBLISHED
Type_of_Source_Media: EMAIL
Source_Time_Period_of_Content: Time_Period_Information:
  Range_of_Dates/Times:
    Beginning_Date: 2013
    Ending_Date: 2013
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: Src_2
Source_Contribution: BENTHIC INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator:
        LATHROP, R.G. AND S. HAAG; AND MACOMBER, R.T., AND D. ALLEN
      Publication_Date:
        2011
      Title:
        ASSESSMENT OF SEAGRASS STATUS IN THE BARNEGAT BAY - LITTLE EGG HARBOR
        VEGETATION DISTRIBUTION ATLAS FINAL REPORT
    Geospatial_Data_Presentation_Form: vector digital data
    Publication_Information:
      Publication_Place:
        NEW BRUNSWICK, NEW JERSEY
      Publisher:
        RUTGERS UNIVERSITY, GRANT F. WALTON CENTER FOR REMOTES SENSING
        AND SPATIAL ANALYSIS, AND EARTH SATELLITE COPRORATION, WASHINGTON
        D.C.
    Online_Linkage: http://crssa.rutgers.edu/projects/coastal/sav/

Type_of_Source_Media: online
Source_Time_Period_of_Content: Time_Period_Information:
  Range_of_Dates/Times:
    Beginning_Date: 1979
    Ending_Date: 2009
Source_Currentness_Reference: DATE OF SURVEY
Source_Citation_Abbreviation: Src_3
Source_Contribution: BENTHIC INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator:
        NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) NATIONAL
        OCEAN SERVICE (NOS), COASTAL SCIENCES CENTER (CSC)
      Publication_Date:
        2010
Title:
DELAWARE BAY BENTHIC HABITATS

Geospatial_Data_Presentation_Form:
VECTOR DIGITAL DATA, RASTER DIGITAL DATA

Publication_Information:

Publication_Place:
CHARLESTON, SC

Publisher:
COASTAL SERVICES CENTER

Online_Linkage:
http://www.csc.noaa.gov/dataviewer/index.html?action=advsearch&qType=in&qFld=id&
datareg=1&qVal=1203%23

Type_of_Source_Media:
online

Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date:
2004

Ending_Date:
2010

Source_Currentness_Reference:
DATE OF PUBLICATION

Source_Citation_Abbreviation:
Src_4

Source_Contribution:
BENTHIC INFORMATION

Source_Information:

Source_Citation:

Citation_Information:
Originator:
PRISCILLA COLE, PARTNERSHIP FOR THE DELAWARE ESTUARY

Publication_Date:
2012

Title:
PARTNERSHIP FOR THE DELAWARE ESTUARY SAV AND INVERTEBRATE SAMPLING DATA

Geospatial_Data_Presentation_Form:
vector digital data

Other_Citation_Details:
UNPUBLISHED

Type_of_Source_Media:
EMAIL

Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date:
2009

Ending_Date:
2012

Source_Currentness_Reference:
DATE OF SURVEY

Source_Citation_Abbreviation:
Src_5

Source_Contribution:
BENTHIC INFORMATION

Process_Step:
Process_Description:
The mapping extent was dependent upon information availability and location of mapped coastal habitats and shorelines. Polygonal beds of aquatic vegetation were obtained from multiple sources, including element...
occurrence data from Delaware Department of Natural Resources and Environmental Control (DNREC), survey
data provided by the Partnership for the Delaware Estuary (PDE), vector digital and raster digital data from the
National Oceanic and Atmospheric Administration's (NOAA) Coastal Sciences Center (CSC) and remote
sensing and GIS data from Rutgers University. Data provided by PDE and DNREC were incorporated as is,
whereas the large SAV beds in Barnegat Bay and Little Egg Harbor Bay were mapped using the aggregation of
the spatial extent of data from 1979, 2003, and 2009 to capture all areas where SAV is most likely to occur. The
above digital and/or hardcopy sources were compiled by the project biologist to create the BENTHIC data layer.
Depending on the type of source data, three general approaches are used for compiling the data layer: 1)
information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological
Survey 1:45,000 topographic quadrangles and digitized; 2) hardcopy maps are digitized at their source scale; 3)
digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage
section for additional information on the type of source data for this data layer. The ESI, biology, and human-use
data are compiled into the standard ESI digital data format. A second set of interviews with participating
resource experts are conducted to review the compiled data. If necessary, edits to the BENTHIC data layer are
made based on the recommendations of the resource experts, and final hardcopy maps and digital data are
created.

Process_Date: 201403

Process_Contact:
Contact_Information:

Contact_Organization_Primary:
Contact_Organization:
NOAA, Office of Response and Restoration
Contact_Person:
ESI Manager
Contact_Address:
Address_Type:
Physical address
Address:
7600 Sand Point Way, N.E.
City:
Seattle
State_or_Province:
Washington
Postal_Code:
98115-6349
Contact_Voice_Telephone:
(206) 526-6944
Contact_Facsimile_Telephone:
(206) 526-6329
Contact_Electronic_Mail_Address:
or.r.esi@noaa.gov

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:
274

SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type:
Area point
Point_and_Vector_Object_Count:
273
SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type:
Complete chain
Point_and_Vector_Object_Count:
834
SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type:
Link
Point_and_Vector_Object_Count:
309224
SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type:
Node, planar graph
Point_and_Vector_Object_Count:
832

Spatial_Reference_Information:
Horizontal_Coordinate_System_Definition:
Geographic:
Latitude_Resolution:
0.0000001
Longitude_Resolution:
0.0000001
Geographic_Coordinate_Units:
Decimal degrees
Geodetic_Model:
Horizontal_Datum_Name:
North American Datum of 1983
Ellipsoid_Name:
Geodetic Reference System 80
Semi-major_Axis:
6378137.000000
Denominator_of_Flattening_Ratio:
298.257222

Entity_and_Attribute_Information:
Detailed_Description:
Entity_Type:
Entity_Type_Label:
BENTHIC.PAT
Entity_Type_Definition:
The BENTHIC.PAT table contains attribute information for the vector polygons in this data set representing eelgrass (Zostera marina), widgeon grass (Ruppia maritima), and water celery (Vallisneria americana) distribution. Note that all attribute information is stored in a series of relational files, described below and in the Overview_Description section. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the relationships between attribute tables in the ESI data structure.
Entity_Type_Definition_Source:
NOAA ESI Guidelines
Attribute:
Attribute_Label:
ID
Attribute_Definition:
An identifier that links vector objects in the biology data layers to records in the BIO_LUT data table. ID is a concatenation of atlas number (212), element number (3), and record number. ID values of 9999 are holes in polygons and do not contain information.
Attribute_Definition_Source: NOAA

Attribute_Domain_Values:

Range_Domain:
  Range_Domain_Minimum: 2120800002
  Range_Domain_Maximum: 2120800409

Attribute:

Attribute_Label: RARNUM

Attribute_Definition:
  An identifier that links directly to the BIORES table or the flat format BIOFILE table. RARNUM values of 0 are holes in the polygons and do not contain information.

Attribute_Definition_Source: NOAA

Attribute_Domain_Values:

Range_Domain:
  Range_Domain_Minimum: 212001128
  Range_Domain_Maximum: 212001134

Detailed_Description:

Entity_Type:
  Entity_Type_Label: BIO_LUT
  Entity_Type_Definition:
    The data table BIO_LUT is a lookup table that contains items necessary for linking vector objects in the biological data layers with the BIORES data table. Note that all attribute information is stored in a series of relational files, described below and in the Overview_Description section. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

Entity_Type_Definition_Source: NOAA ESI Guidelines

Attribute:

Attribute_Label: RARNUM

Attribute_Definition:
  An identifier that links records in the BIO_LUT data table to records in the BIORES data table or the flat format BIOFILE data table. RARNUM values of 0 are holes in polygons and do not contain information.

Attribute_Definition_Source: NOAA

Attribute_Domain_Values:

Range_Domain:
  Range_Domain_Minimum: 212000001
  Range_Domain_Maximum: 212001295

Attribute:

Attribute_Label: ID

Attribute_Definition:
  An identifier that links vector objects in the biology data layers to records in the BIO_LUT data table. ID is a concatenation of atlas number (212), element number (3), and record number. ID values of 9999 are holes in polygons and do not contain information.

Attribute_Definition_Source: NOAA

Attribute_Domain_Values:

Range_Domain:
  Range_Domain_Minimum: 212000001
  Range_Domain_Maximum: 212001295
Detailed Description:

Entity Type:

- **Entity Type Label**: BIORES
- **Entity Type Definition**: The data table BIORES contains both biological attribute data and items necessary for linking vector objects in the biological data layers via the BIO_LUT data table to other associated data tables. See the Browse Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

**Entity Type Definition Source**: NOAA ESI Guidelines

Attribute:

- **Attribute Label**: RARNUM
- **Attribute Definition**: An identifier that links records in the BIORES data table to records in the BIO_LUT data table or the flat format BIOFILE data table.
- **Attribute Definition Source**: NOAA

**Attribute Domain Values**:

- **Range Domain**:
  - **Range Domain Minimum**: 212000001
  - **Range Domain Maximum**: 212001295

Attribute:

- **Attribute Label**: SPECIES_ID
- **Attribute Definition**: Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI species list maintained at NOAA.
- **Attribute Definition Source**: NOAA ESI Guidelines

**Attribute Domain Values**:

- **Range Domain**:
  - **Range Domain Minimum**: 1
  - **Range Domain Maximum**: N

Attribute:

- **Attribute Label**: CONC
- **Attribute Definition**: The field CONC refers to "concentration," abundance, or density value of a habitat at a particular location. Concentration information was only available for the SAV in Barnegat Bay and Little Egg Harbor. In these areas it was noted that SAV beds are dominated by eelgrass (Zostera marina), with widgeon grass (Ruppia maritima) as a less common associate. Therefore concentrations were included as "COMMON" for eelgrass, and "UNCOMMON" for widgeon grass. If no concentration information was available from any source, the field was populated with ".".
- **Attribute Definition Source**: NOAA ESI Guidelines

**Attribute Domain Values**:

- **Unrepresentable Domain**:
  - Acceptable values change from atlas to atlas.

Attribute:

- **Attribute Label**: SEASON_ID
**Attribute Definition:**

Numeric identifier for the unique monthly presence and life history characteristics of each species at a given location.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Range Domain:**

- **Range Domain Minimum:** 1
- **Range Domain Maximum:** N

**Attribute:**

**Attribute Label:** G_SOURCE

**Attribute Definition:**
Geographic source identifier that links records in the BIORES data table to records in the SOURCES data table.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Range Domain:**

- **Range Domain Minimum:** 1
- **Range Domain Maximum:** N

**Attribute:**

**Attribute Label:** S_SOURCE

**Attribute Definition:**
Seasonality source identifier that links records in the BIORES data table to records in the SOURCES data table.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Range Domain:**

- **Range Domain Minimum:** 1
- **Range Domain Maximum:** N

**Attribute:**

**Attribute Label:** ELEMENT

**Attribute Definition:**
Major categories of biological data.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

- **Enumerated Domain Value:** BIRD
  **Enumerated Domain Value Definition:** Birds
  **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

- **Enumerated Domain Value:** FISH
  **Enumerated Domain Value Definition:** Fish
  **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines
Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value:
      HABITAT
      Enumerated Domain Value Definition:
        Habitats and plants
      Enumerated Domain Value Definition Source:
        NOAA ESI Guidelines
  Enumerated Domain Values:
    Enumerated Domain:
      Enumerated Domain Value:
        INVERT
        Enumerated Domain Value Definition:
          Invertebrates
        Enumerated Domain Value Definition Source:
          NOAA ESI Guidelines
  Enumerated Domain Values:
    Enumerated Domain:
      Enumerated Domain Value:
        M_MAMMAL
        Enumerated Domain Value Definition:
          Marine mammals
        Enumerated Domain Value Definition Source:
          NOAA ESI Guidelines
  Enumerated Domain Values:
    Enumerated Domain:
      Enumerated Domain Value:
        REPTILE
        Enumerated Domain Value Definition:
          Reptiles and Amphibians
        Enumerated Domain Value Definition Source:
          NOAA ESI Guidelines
  Enumerated Domain Values:
    Enumerated Domain:
      Enumerated Domain Value:
        T_MAMMAL
        Enumerated Domain Value Definition:
          Terrestrial mammals
        Enumerated Domain Value Definition Source:
          NOAA ESI Guidelines
  Enumerated Domain:
    Enumerated Domain Value:
      E#####
      Enumerated Domain Value Definition:
        Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1; EL_SPE = 'B00001').
      Enumerated Domain Value Definition Source:
        NOAA ESI Guidelines
  Enumerated Domain:
    Enumerated Domain Value:
      EL_SPE
      Attribute Definition:
        Concatenation of ELEMENT and SPECIES_ID. This item links records in the BIORES data table to records in the SPECIES and STATUS data tables.
      Attribute Definition Source:
        NOAA ESI Guidelines
  Enumerated Domain Values:
    Enumerated Domain:
      Enumerated Domain Value:
        EL_SPE_SEA
        Delaware Bay ESI: BENTHIC
**Attribute Definition:**

Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the BIORES data table to records in the SEASONAL and BREED data tables.

**Attribute Definition Source:**

NOAA ESI Guidelines

**Attribute Domain Values:**

**Enumerated Domain:**

**Enumerated Domain Value:**

E####

**Enumerated Domain Value Definition:**

Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').

**Enumerated Domain Value Definition Source:**

NOAA ESI Guidelines

**Detailed Description:**

**Entity Type:**

**Entity Type Label:** SPECIES

**Entity Type Definition:**

The data table SPECIES identifies all species in the ESI data set. See the Browse Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure. Refer to the Completeness Report for a list of layer-specific species.

**Entity Type Definition Source:**

NOAA ESI Guidelines

**Attribute:**

**Attribute Label:** SPECIES_ID

**Attribute Definition:**

Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI species list maintained at NOAA.

**Attribute Definition Source:**

NOAA ESI Guidelines

**Attribute Domain Values:**

**Range Domain:**

**Range Domain Minimum:** 1

**Range Domain Maximum:** N

**Attribute:**

**Attribute Label:** NAME

**Attribute Definition:**

Species common name for the entire ESI data set.

**Attribute Definition Source:**

NOAA ESI Guidelines

**Attribute Domain Values:**

**Unrepresentable Domain:** Acceptable values change from atlas to atlas.

**Attribute:**

**Attribute Label:** GEN_SPEC

**Attribute Definition:**

Species scientific name for the entire ESI data set.

**Attribute Definition Source:**

NOAA ESI Guidelines

**Attribute Domain Values:**

**Unrepresentable Domain:** Acceptable values change from atlas to atlas.
Attribute Label: ELEMENT
Attribute Definition: Major categories of biological data.
Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
  BIRD
Enumerated Domain Value Definition: Birds
Enumerated Domain Value Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
  FISH
Enumerated Domain Value Definition: Fish
Enumerated Domain Value Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
  HABITAT
Enumerated Domain Value Definition: Habitats and plants
Enumerated Domain Value Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
  INVERT
Enumerated Domain Value Definition: Invertebrates
Enumerated Domain Value Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
  M_MAMMAL
Enumerated Domain Value Definition: Marine Mammals
Enumerated Domain Value Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
  REPTILE
Enumerated Domain Value Definition: Reptiles and Amphibians
Enumerated Domain Value Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value:
  T_MAMMAL
Enumerated Domain Value Definition: Terrestrial Mammals
Attribute:

Attribute_Label:

SUBELEMENT

Attribute_Definition:
Element subgroup delineating a logical grouping of species.

Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:
alcid

Enumerated_Domain_Value_Definition:
Alcid

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:
amphibian

Enumerated_Domain_Value_Definition:
Amphibian

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:
bivalve

Enumerated_Domain_Value_Definition:
Bivalve

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:
cephalopod

Enumerated_Domain_Value_Definition:
Cephalopod

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:
crab

Enumerated_Domain_Value_Definition:
Crab

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:
diadromous

Enumerated_Domain_Value_Definition:
Diadromous fish

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:
diving

*Enumerated Domain Value Definition:* Diving bird
*Enumerated Domain Value Definition Source:* NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
- dolphin

*Enumerated Domain Value Definition:* Dolphin
*Enumerated Domain Value Definition Source:* NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
- e_nursery

*Enumerated Domain Value Definition:* Estuarine nursery fish
*Enumerated Domain Value Definition Source:* NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
- fish

*Enumerated Domain Value Definition:* Fish
*Enumerated Domain Value Definition Source:* NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
- freshwater

*Enumerated Domain Value Definition:* Freshwater fish
*Enumerated Domain Value Definition Source:* NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
- gastropod

*Enumerated Domain Value Definition:* Gastropod
*Enumerated Domain Value Definition Source:* NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
- gull_tern

*Enumerated Domain Value Definition:* Gull or tern
*Enumerated Domain Value Definition Source:* NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
- insect

*Enumerated Domain Value Definition:* Insect
*Enumerated Domain Value Definition Source:*
NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
invert
Enumerated Domain Value Definition:
Invertebrate
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
lobster
Enumerated Domain Value Definition:
Lobster
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
m_benthic
Enumerated Domain Value Definition:
Marine benthic fish
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
m_pelagic
Enumerated Domain Value Definition:
Marine pelagic fish
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
passerine
Enumerated Domain Value Definition:
Passerine bird
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
pelagic
Enumerated Domain Value Definition:
Pelagic bird
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
pinniped
Enumerated Domain Value Definition:
Pinniped
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:
plant
  Enumerated_Domain_Value_Definition:
    Plant
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      raptor
      Enumerated_Domain_Value_Definition:
        Raptor
        Enumerated_Domain_Value_Definition_Source:
          NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      sav
      Enumerated_Domain_Value_Definition:
        Submerged aquatic vegetation
        Enumerated_Domain_Value_Definition_Source:
          NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      shorebird
      Enumerated_Domain_Value_Definition:
        Shorebird
        Enumerated_Domain_Value_Definition_Source:
          NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      sm_mammal
      Enumerated_Domain_Value_Definition:
        Small mammal
        Enumerated_Domain_Value_Definition_Source:
          NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      snake
      Enumerated_Domain_Value_Definition:
        Snake
        Enumerated_Domain_Value_Definition_Source:
          NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      turtle
      Enumerated_Domain_Value_Definition:
        Turtle
        Enumerated_Domain_Value_Definition_Source:
          NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      wading
      Enumerated_Domain_Value_Definition:
        Wading bird
        Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value:
    waterfowl
  Enumerated Domain Value Definition:
    Waterfowl
  Enumerated Domain Value Definition Source:
    NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value:
    wetland
  Enumerated Domain Value Definition:
    Wetland
  Enumerated Domain Value Definition Source:
    NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value:
    whale
  Enumerated Domain Value Definition:
    Whale
  Enumerated Domain Value Definition Source:
    NOAA ESI Guidelines

Attribute:
  Attribute Label:
    NHP
  Attribute Definition:
    Natural Heritage Program global ranking.
  Attribute Definition Source:
    Network of Natural Heritage Program

Attribute Domain Values:
  Codeset Domain:
    Codeset Name:
      NHP Global Conservation Status Rank
    Codeset Source:
      Natural Heritage Program

Attribute:
  Attribute Label:
    DATE_PUB
  Attribute Definition:
    Date of NHP listing.
  Attribute Definition Source:
    NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value:
    YYYYMM
  Enumerated Domain Value Definition:
    YYYY for year and optionally MM for month
  Enumerated Domain Value Definition Source:
    NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value:
    0
  Enumerated Domain Value Definition:
    Date unspecified
  Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute:
  Attribute_Label: EL_SPE
  Attribute_Definition: Concatenation of ELEMENT and SPECIES_ID. This item links records in the SPECIES data table to records in the BIORES and STATUS data tables.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        E####
      Enumerated_Domain_Value_Definition:
        Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1; EL_SPE = 'B00001').
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Detailed_Description:

Entity_Type:
  Entity_Type_Label: SEASONAL
  Entity_Type_Definition: The data table SEASONAL contains information on the seasonal presence of each species associated with each spatial vector object. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.
  Entity_Type_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: ELEMENT
  Attribute_Definition: Major categories of biological data.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: BIRD
      Enumerated_Domain_Value_Definition: Birds
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: FISH
    Enumerated_Domain_Value_Definition: Fish
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: HABITAT
    Enumerated_Domain_Value_Definition: Habitats and plants
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value:
    INVERT
  Enumerated_Domain_Value_Definition:
    Invertebrates
  Enumerated_Domain_Value_Definition_Source:
    NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      M_MAMMAL
    Enumerated_Domain_Value_Definition:
      Marine Mammals
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      REPTILE
    Enumerated_Domain_Value_Definition:
      Reptiles and Amphibians
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      T_MAMMAL
    Enumerated_Domain_Value_Definition:
      Terrestrial Mammals
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute:
  Attribute_Label: SPECIES_ID
  Attribute_Definition:
    Numeric identifier for each species that is unique within each element and refers to a nationwide ESI species list maintained at NOAA.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum:
        1
      Range_Domain_Maximum:
        N

Attribute:
  Attribute_Label: SEASON_ID
  Attribute_Definition:
    Numeric identifier for the unique monthly presence and life history characteristics of each species at a given location.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum:
        1
      Range_Domain_Maximum:
        N
Attribute:
  Attribute_Label: JAN
  Attribute_Definition: January
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        X
      Enumerated_Domain_Value_Definition:
        Present in January
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: FEB
  Attribute_Definition: February
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        X
      Enumerated_Domain_Value_Definition:
        Present in February
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: MAR
  Attribute_Definition: March
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        X
      Enumerated_Domain_Value_Definition:
        Present in March
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: APR
  Attribute_Definition: April
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        X
      Enumerated_Domain_Value_Definition:
        Present in April
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
Attribute: MAY
  Attribute_Label: MAY
  Attribute_Definition: May
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        X
      Enumerated_Domain_Value_Definition: Present in May
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute: JUN
  Attribute_Label: JUN
  Attribute_Definition: June
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        X
      Enumerated_Domain_Value_Definition: Present in June
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute: JUL
  Attribute_Label: JUL
  Attribute_Definition: July
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        X
      Enumerated_Domain_Value_Definition: Present in July
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute: AUG
  Attribute_Label: AUG
  Attribute_Definition: August
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        X
      Enumerated_Domain_Value_Definition: Present in August
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute _Label:_
SEP
Attribute _Definition:_
September
Attribute _Definition_ Source:
NOAA ESI Guidelines
Attribute _Domain_ Values:
Enumerated _Domain:_
   Enumerated _Domain_ Value:
   X
   Enumerated _Domain_ Value_ Definition:
   Present in September
   Enumerated _Domain_ Value_ Definition_ Source:
   NOAA ESI Guidelines

Attribute:
Attribute _Label:_
OCT
Attribute _Definition:_
October
Attribute _Definition_ Source:
NOAA ESI Guidelines
Attribute _Domain_ Values:
Enumerated _Domain:_
   Enumerated _Domain_ Value:
   X
   Enumerated _Domain_ Value_ Definition:
   Present in October
   Enumerated _Domain_ Value_ Definition_ Source:
   NOAA ESI Guidelines

Attribute:
Attribute _Label:_
NOV
Attribute _Definition:_
November
Attribute _Definition_ Source:
NOAA ESI Guidelines
Attribute _Domain_ Values:
Enumerated _Domain:_
   Enumerated _Domain_ Value:
   X
   Enumerated _Domain_ Value_ Definition:
   Present in November
   Enumerated _Domain_ Value_ Definition_ Source:
   NOAA ESI Guidelines

Attribute:
Attribute _Label:_
DEC
Attribute _Definition:_
December
Attribute _Definition_ Source:
NOAA ESI Guidelines
Attribute _Domain_ Values:
Enumerated _Domain:_
   Enumerated _Domain_ Value:
   X
   Enumerated _Domain_ Value_ Definition:
   Present in December
   Enumerated _Domain_ Value_ Definition_ Source:
   NOAA ESI Guidelines

Attribute:
Attribute_Label: EL_SPE_SEA
Attribute_Definition: Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the SEASONAL data table to records in the BIORES and BREED data tables.
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: E########
Enumerated_Domain_Value_Definition: Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Detailed_Description:
Entity_Type:
Entity_Type_Label: BREED
Entity_Type_Definition: The data table BREED identifies the monthly presence of certain life-history stages or activities for each species at a given location.
Entity_Type_Definition_Source: NOAA ESI Guidelines
Attribute:
Attribute_Label: EL_SPE_SEA
Attribute_Definition: Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the BREED data table to records in the BIORES and SEASONAL data tables.
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: E########
Enumerated_Domain_Value_Definition: Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute:
Attribute_Label: MONTH
Attribute_Definition: Two-digit calendar month. Each life history stage or activity type for a particular species can have up to 12 records to account for each month of the year.
Attribute_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum: 1
Range_Domain_Maximum: 12
Attribute:
Attribute_Label:
BREED1

Attribute Definition:
Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED1 = nesting; if ELEMENT is "FISH" then BREED1 = spawning; if ELEMENT is "INVERT" then BREED1 = spawning; if ELEMENT is "REPTILE" then BREED1 = nesting; if ELEMENT is "M_MAMMAL" then BREED1 = mating. This attribute is not used for HABITAT or T_MAMMAL.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:

Enumerated Domain Value:
Y
Enumerated Domain Value Definition:
Life-history stage or activity present
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Enumerated Domain Value:
N
Enumerated Domain Value Definition:
Life-history stage or activity not present or not reported
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Enumerated Domain Value:
-
Enumerated Domain Value Definition:
Breed category not used or not appropriate for record(s) in question
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute:
Attribute Label:
BREED2

Attribute Definition:
Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED2 = migrating; if ELEMENT is "FISH" then BREED2 = eggs; if ELEMENT is "INVERT" then BREED2 = eggs; if ELEMENT is "REPTILE" then BREED2 = hatching; if ELEMENT is "M_MAMMAL" then BREED2 = calving. This attribute is not used for HABITAT or T_MAMMAL elements.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:

Enumerated Domain Value:
Y
Enumerated Domain Value Definition:
Life-history stage or activity present
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Enumerated Domain Value:
N
Enumerated Domain Value Definition:
Life-history stage or activity not present or not reported
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Enumerated Domain Value:
-
Enumerated Domain Value Definition:
Breed category not used or not appropriate for record(s) in question
Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:


Enumerated Domain Value:

- 

Enumerated Domain Value Definition:
Breed category not used or not appropriate for record(s) in question

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute:
Attribute Label:
BREED3

Attribute Definition:
Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED3 = molting; if ELEMENT is "FISH" then BREED3 = larvae; if ELEMENT is "INVERT" then BREED3 = larvae; if ELEMENT is "REPTILE" then BREED3 = internesting; if ELEMENT is "M_MAMMAL" then BREED3 = pupping. This attribute is not used for HABITAT or T_MAMMAL elements.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:

Enumerated Domain Value:
Y

Enumerated Domain Value Definition:
Life-history stage or activity present

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:

Enumerated Domain Value:
N

Enumerated Domain Value Definition:
Life-history stage or activity not present or not reported

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:

Enumerated Domain Value:
- 

Enumerated Domain Value Definition:
Breed category not used or not appropriate for record(s) in question

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute:
Attribute Label:
BREED4

Attribute Definition:
Life history stage or activity type, where: if ELEMENT is "FISH" then BREED4 = juveniles; if ELEMENT is "INVERT" then BREED4 = juveniles; if ELEMENT is "REPTILE" then BREED4 = juveniles; if ELEMENT is "M_MAMMAL" then BREED4 = molting. This attribute is not used for BIRD, HABITAT, or T_MAMMAL elements.

Attribute Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:

Enumerated Domain Value:
Y

Enumerated Domain Value Definition:
Life-history stage or activity present

Enumerated Domain Value Definition Source:
NOAA ESI Guidelines

Attribute Domain Values:
Enumerated Domain:
Enumerated_Domain_Value:
  N

Enumerated_Domain_Value_Definition:
  Life-history stage or activity not present or not reported

Enumerated_Domain_Value_Definition_Source:
  NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      -
    Enumerated_Domain_Value_Definition:
      Breed category not used or not appropriate for record(s) in question
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute:
  Attribute_Label:
    BREED5

Attribute_Definition:
  Life history stage or activity type, where: if ELEMENT is "FISH" then BREED5 = adults; if ELEMENT is "INVERT" then BREED5 = adults; if ELEMENT is "REPTILE" then BREED5 = adults. This attribute is not used for BIRD, M_MAMMAL, HABITAT or T_MAMMAL elements.

Attribute_Definition_Source:
  NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      Y
    Enumerated_Domain_Value_Definition:
      Life-history stage or activity present
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      N
    Enumerated_Domain_Value_Definition:
      Life-history stage or activity not present or not reported
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
      -
    Enumerated_Domain_Value_Definition:
      Breed category not used or not appropriate for record(s) in question
    Enumerated_Domain_Value_Definition_Source:
      NOAA ESI Guidelines

Detailed_Description:
  Entity_Type:
    Entity_Type_Label:
      STATUS
    Entity_Type_Definition:
      The data table STATUS identifies the species that are listed as either threatened or endangered by a state, federal, or international authority. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.
    Entity_Type_Definition_Source:
      NOAA ESI Guidelines

Attribute:
  Attribute_Label:
    ELEMENT
**Attribute Definition:**
Major categories of biological data.

**Attribute Definition Source:**
NOAA ESI Guidelines

**Attribute Domain Values:**

- **Enumerated Domain:**
  - **Enumerated Domain Value:** BIRD
    - **Enumerated Domain Value Definition:** Birds
    - **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

- **Enumerated Domain:**
  - **Enumerated Domain Value:** FISH
    - **Enumerated Domain Value Definition:** Fish
    - **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

- **Enumerated Domain:**
  - **Enumerated Domain Value:** HABITAT
    - **Enumerated Domain Value Definition:** Habitats and Plants
    - **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

- **Enumerated Domain:**
  - **Enumerated Domain Value:** INVERT
    - **Enumerated Domain Value Definition:** Invertebrates
    - **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

- **Enumerated Domain:**
  - **Enumerated Domain Value:** M_MAMMAL
    - **Enumerated Domain Value Definition:** Marine Mammals
    - **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

- **Enumerated Domain:**
  - **Enumerated Domain Value:** REPTILE
    - **Enumerated Domain Value Definition:** Reptiles and Amphibians
    - **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines

- **Enumerated Domain:**
  - **Enumerated Domain Value:** T_MAMMAL
    - **Enumerated Domain Value Definition:** Terrestrial Mammals
    - **Enumerated Domain Value Definition Source:** NOAA ESI Guidelines
Attribute:
  Attribute_Label: SPECIES_ID
  Attribute_Definition: Numeric identifier for each species that is unique within each element and refers to a nationwide master ESI species list maintained at NOAA.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum: 1
      Range_Domain_Maximum: N

Attribute:
  Attribute_Label: STATE
  Attribute_Definition: Two-letter state abbreviation.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:
  Attribute_Label: COUNTRY
  Attribute_Definition: Three-letter country abbreviation.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:
  Attribute_Label: S
  Attribute_Definition: State threatened or endangered status.
  Attribute_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        E
      Enumerated_Domain_Value_Definition: Endangered on state list
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
    Enumerated_Domain:
      Enumerated_Domain_Value:
        T
      Enumerated_Domain_Value_Definition: Threatened on state list
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value:
Attribute:

Attribute_Label:
F

Attribute_Definition:
Federal threatened or endangered status.

Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:
E

Enumerated_Domain_Value_Definition:
Endangered on federal list

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:
T

Enumerated_Domain_Value_Definition:
Threatened on federal list

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:
C

Enumerated_Domain_Value_Definition:
Species of Special Concern

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute:

Attribute_Label:
I

Attribute_Definition:
International threatened or endangered status.

Attribute_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:
E

Enumerated_Domain_Value_Definition:
Endangered on international list

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:
T

Enumerated_Domain_Value_Definition:
Threatened on international list

Enumerated_Domain_Value_Definition_Source:
NOAA ESI Guidelines
Enumerated_Domain:
  Enumerated_Domain_Value:
    C
Enumerated_Domain_Value_Definition:
  Species of Special Concern
Enumerated_Domain_Value_Definition_Source:
  NOAA ESI Guidelines

Attribute:
  Attribute_Label: S_DATE
  Attribute_Definition: Publication date of source material used to assign state status values for each species, if used.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        YYYYMM
      Enumerated_Domain_Value_Definition:
        YYYY for year and optionally MM for month
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines

Attribute:
  Attribute_Label: F_DATE
  Attribute_Definition: Publication date of source material used to assign federal status values for each species, if used.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        YYYYMM
      Enumerated_Domain_Value_Definition:
        YYYY for year and optionally MM for month
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines

Attribute:
  Attribute_Label: I_DATE
  Attribute_Definition: Publication date of source material used to assign international status values for each species, if used.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value:
        YYYYMM
      Enumerated_Domain_Value_Definition:
        YYYY for year and optionally MM for month
      Enumerated_Domain_Value_Definition_Source:
        NOAA ESI Guidelines

Attribute:
  Attribute_Label: EL_SPE
  Attribute_Definition: Concatenation of ELEMENT and SPECIES_ID. This item links the STATUS data table to the BIORES and SPECIES data tables.
  Attribute_Definition_Source:
    NOAA ESI Guidelines
Attribute_Domain_Values:
   Enumerated_Domain:
      Enumerated_Domain_Value:
         E#####
         Enumerated_Domain_Value_Definition:
            Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g.
            ELEMENT = 'BIRD' and SPECIES_ID = 1; EL_SPE = 'B00001').
      Enumerated_Domain_Value_Definition_Source:
         NOAA ESI Guidelines

Detailed_Description:
Entity_Type:
   Entity_Type_Label:
      SOURCES
   Entity_Type_Definition:
      The data table SOURCES contains the primary sources used to create the ESI data set. See the Browse Graphic
      section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute
      tables in the ESI data structure.
   Entity_Type_Definition_Source:
      NOAA ESI Guidelines

Attribute:
   Attribute_Label:
      SOURCE_ID
   Attribute_Definition:
      Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the
      SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; SOURCE_ID and ESI_SOURCE in the
      ESIL and ESIP data layers; and SOURCE_ID in the HYDRO data layer.
   Attribute_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
   Range_Domain:
      Range_Domain_Minimum:
         1
      Range_Domain_Maximum:
         N

Attribute:
   Attribute_Label:
      ORIGINATOR
   Attribute_Definition:
      Author or developer of source material or data set.
   Attribute_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
   Unrepresentable_Domain:
      Acceptable values change from atlas to atlas.

Attribute:
   Attribute_Label:
      DATE_PUB
   Attribute_Definition:
      Date of source material, publication, or date of personal communication with expert source.
   Attribute_Definition_Source:
      NOAA ESI Guidelines

Attribute_Domain_Values:
   Enumerated_Domain:
      Enumerated_Domain_Value:
         YYYYMM
      Enumerated_Domain_Value_Definition:
         YYYY for year and optionally MM for month
      Enumerated_Domain_Value_Definition_Source:
         NOAA ESI Guidelines
Attribute Label: TITLE
Attribute Definition: Title of source material or data.
Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute Label: DATA_FORMAT
Attribute Definition: The format of the source material.
Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute Label: PUB_PLACE
Attribute Definition: Publication place.
Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute Label: PUBLISHER
Attribute Definition: Publisher.
Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute Label: PUBLICATION
Attribute Definition: Additional citation information.
Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute Label: ONLINE_LINK
Attribute Definition: Online computer resource URL.
Attribute Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Unrepresentable Domain: Acceptable values change from atlas to atlas.
Attribute Labels:
  SCALE

Attribute Definition:
  Description of the source scale.

Attribute Definition Source:
  NOAA ESI Guidelines

Attribute Domain Values:
  Unrepresentable Domain:
  Acceptable values change from atlas to atlas.

Attribute Labels:
  TIME_PERIOD

Attribute Definition:
  Date(s) of data collection that the source material is based upon.

Attribute Definition Source:
  NOAA ESI Guidelines

Attribute Domain Values:
  Unrepresentable Domain:
  Acceptable values change from atlas to atlas.

Overview Description:

Entity and Attribute Overview:
In addition to the geographic data layers, six relational attribute or data tables (BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS) are used to store the complex biological data in the ESI data structure. The geographic data layer containing biological resource information (in this case, BENTHIC) is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or it can be linked directly using RARNUM. The ID is a unique combination of the atlas number (for the Delaware/New Jersey/Pennsylvania atlas, the number is 212), an element/layer specific number (BIRDS are layer 1, FISH are layer 2, etc.), and a unique record number. The RARNUM represents a unique combination of species, seasonalities, concentrations, and source information. For each of these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases. BIORES and the other relational data tables are described in the Detailed_Description sections. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way these tables relate to the geographic data layers and other attribute tables in the ESI data structure. Due to the complexity of the relational database model, the data items are also post-processed into a flat file format. This table, called BIOFILE, may be used in place of the relational files to ease simple data queries. The items in the flat file are ELEMENT, SUBELEMENT, NAME, GEN_SPEC, S, F, NHP, DATE_PUB, CONC, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC, BREED1, BREED2, BREED3, BREED4, BREED5, RARNUM, G_SOURCE, S_SOURCE, and BREED. All of these items are the same as their counterparts in the individual data tables (described in the Detailed_Description sections), except the BREED1-BREED5 and BREED items. BREED is a newly generated variable used to link to the BREED_DT data table, a modified, more compact version of the relational BREED data table. BREED1-BREED5 give a text summary of when each life stage occurs within the associated map object. The life stages referred to are the same as those listed in the Detailed_Description of the BREED data table. The link to the BIOFILE may be made through the BIO_LUT, using ID to link to RARNUM, or BIOFILE may be linked directly to the RARNUM in each of the geographic layer's attribute data tables. As mentioned, BREED_DT is an auxiliary support data table to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item. A second supporting data table is SOURCES. This is the same as the source file described above, and the link from the flat file is both G_SOURCE and S_SOURCE. It should be noted that although the flat file eases data query, it is not a normalized database structure, and actual updates performed by the states and other responsible agencies should be done using the relational data tables. The entity-relationship diagram, describing relationships between attribute tables in the ESI data structure, does NOT include the BIOFILE data table, and this data table is NOT described in a Detailed_Description section.

Entity and Attribute Detail Citation:
A complete description of entity types, attributes, and attribute values for ESI atlases can be found in the NOAA ESI Guidelines (http://response.restoration.noaa.gov/esi_guidelines).

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Contact Information:
Contact Person Primary:
Contact Person:
ESI Manager
Contact Organization:
NOAA, Office of Response and Restoration

Contact Address:
Address Type:
Physical Address
Address:
7600 Sand Point Way N.E.
City:
Seattle
State or Province:
Washington
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98115-6349

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Contact Electronic Mail Address:
orr.esi@noaa.gov

Resource Description:
Downloadable Data

Distribution Liability:
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format. If problems are encountered either in downloading the ESI data or if any file appears corrupted, please contact the ESI manager.

Custom Order Process:
Contact NOAA if you require the data be provided to you on CD/DVD. (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export files, Shapefiles, and a file Geodatabase (the recommended format). The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

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Metadata Reference Information:
Metadata Date:
20140620
Metadata Contact:
Contact Information:
Contact Person Primary:
Contact Person:
ESI Manager
Contact Organization:
NOAA, Office of Response and Restoration
Contact Position:
GIS Manager
Contact Address:
Address Type:
Physical Address
Address:
7600 Sand Point Way, N.E.
City:
Seattle
State or Province: Washington
Postal Code: 98115-6349
Contact Voice Telephone: (206) 526-6944
Contact Facsimile Telephone: (206) 526-6329
Contact Electronic Mail Address: orr.esi@noaa.gov

Metadata Standard Name:
Content Standards for Digital Geospatial Metadata
Metadata Standard Version:
FGDC-STD-001-1998
Geographic Themes

- ESIL (LINES)
- ESI (10,10,C)
- LINE (1,1,C)
- SOURCE_ID (9,9,I)
- ENVIR (1,1,C)
- ESI_SOURCE (9,9,I)
- ESIP (POLYS)
- ESI (10,10,C)
- WATER_CODE (1,1,C)
- ENVIR (1,1,C)
- SOURCE_ID (9,9,I)
- HYDRO (LINES)
- LINE (1,1,C)
- SOURCE_ID (9,9,I)
- HYDRO (POLYS)
- WATER_CODE (1,1,C)
- INDEX (POLYS)
- TILE-NAME (32,32,C)
- TOPO-NAME (255,255,C)
- SCALE (7,7,I)
- MAPANGLE (4,8,F,3)
- PAGESIZE (11,11,C)
- MGT (POLYS)
- TYPE (2,2,C)
- HUNUM (9,9,I)
- SOCECON (POLYS)
- TYPE (2,2,C)
- ID (10,10,I)
- RARNUM (9,9,I)
- M_MAMMAL (POLYS)
- ID (10,10,I)
- RARNUM (9,9,I)
- NES (TS) (POINTS)
- ID (10,10,I)
- RARNUM (9,9,I)
- REPTILES (POLYS)
- ID (10,10,I)
- RARNUM (9,9,I)
- INVERT (POLYS)
- ID (10,10,I)
- RARNUM (9,9,I)
- M_MAMMAL (POLYS)
- ID (10,10,I)
- RARNUM (9,9,I)
- BENTHIC (POLYS)
- ID (10,10,I)
- RARNUM (9,9,I)
- FISH (POLYS)
- ID (10,10,I)
- RARNUM (9,9,I)
- FISHL (ARCS)
- ID (10,10,I)
- RARNUM (9,9,I)
- HABITATS (POLYS)
- ID (10,10,I)
- RARNUM (9,9,I)
- BIRDS (POLYS)
- ID (10,10,I)
- RARNUM (9,9,I)
- T_MAMMAL (POLYS)
- ID (10,10,I)
- RARNUM (9,9,I)
- EGRET (POLYS)
- ID (10,10,I)
- RARNUM (9,9,I)
- SOCECON (LINES)
- TYPE (2,2,C)
- ID (10,10,I)
- HYDRO (POLYS)
- WATER_CODE (1,1,C)
- SOURCE_ID (9,9,I)
- ENVIR (1,1,C)
- ESIP (POLYS)
- ESI (10,10,C)
- WATER_CODE (1,1,C)
- ENVIR (1,1,C)
- SOURCE_ID (9,9,I)

Lookup Tables

- SOC_LUT
  - HUNUM (9,9,I)
  - ID (10,10,I)
  - (The SOC_LUT table can be bypassed by linking the human-use tables to SOC_DAT using HUNUM)
- BIO_LUT
  - RARNUM (9,9,I)
  - ID (10,10,I)
  - (The BIO_LUT table can be bypassed by linking the biology tables to BIORES using RARNUM)
- SOURCES
  - SOURCE_ID (9,9,I)
  - ORIGINATOR (255,255,C)
  - DATE_PUB (10,10,I)
  - TITLE (255,255,C)
  - PUB_PLACE (255,255,C)
  - PUBLISHER (255,255,C)
  - PUBLICATION (255,255,C)
  - ONLINE_LINK (255,255,C)
  - SCALE (20,20,C)
  - TIME_PERIOD (22,22,C)
- SOC_DAT
  - HUNUM (9,9,I)
  - TYPE (20,20,C)
  - NAME (40,40,C)
  - CONTACT (80,80,C)
  - PHONE (20,20,C)
  - G_SOURCE (9,9,I)
  - A_SOURCE (9,9,I)
  - SOC_LUT
  - HUNUM (9,9,I)
  - ID (10,10,I)
  - (The SOC_LUT table can be bypassed by linking the human-use tables to SOC_DAT using HUNUM)
  - BIORES
  - RARNUM (9,9,I)
  - SPECIES_ID (5,5,I)
  - CONC (20,20,C)
  - SEASON_ID (2,2,I)
  - G_SOURCE (9,9,I)
  - S_SOURCE (9,9,I)
  - ELEMENT (10,10,C)
  - EL_SPE (6,6,C)
  - EL_SPE_SEA (8,8,C)
  - SPECIES
  - SPECIES_ID (5,5,I)
  - NAME (35,35,C)
  - GEN_SPEC (45,45,C)
  - ELEMENT (10,10,C)
  - SUBELEMENT (10,10,C)
  - NHP (10,10,C)
  - DATE_PUB (10,10,I)
  - EL_SPE (6,6,C)
  - SEASONAL
  - ELEMENT (10,10,C)
  - SPECIES_ID (5,5,I)
  - SEASON_ID (2,2,I)
  - JAN (1,1,C)
  - FEB (1,1,C)
  - MAR (1,1,C)
  - APR (1,1,C)
  - MAY (1,1,C)
  - JUN (1,1,C)
  - JUL (1,1,C)
  - AUG (1,1,C)
  - SEP (1,1,C)
  - OCT (1,1,C)
  - NOV (1,1,C)
  - DEC (1,1,C)
  - EL_SPE_SEA (8,8,C)
  - BREED
  - EL_SPE_SEA (8,8,C)
  - MONTH (2,2,I)
  - BREED1 (1,1,C)
  - BREED2 (1,1,C)
  - BREED3 (1,1,C)
  - BREED4 (1,1,C)
  - BREED5 (1,1,C)
The BIO_LUT table can be bypassed by linking the biology tables to BIORES using RARNUM.

The SOC_LUT table can be bypassed by linking the human-use tables to SOC_DAT using HUNUM.

The BIOFILE can be bypassed by linking the biology tables to BIORES using RARNUM.

The SOURCES can be bypassed by linking the source tables to SOURCES using SOURCE_ID.

The ORIGINATOR can be bypassed by linking the originator tables to ORIGINATOR using ORIGINATOR.

The DATE_PUB can be bypassed by linking the date published tables to DATE_PUB using DATE_PUB.

The TITLE can be bypassed by linking the title tables to TITLE using TITLE.

The DATA_FORMAT can be bypassed by linking the data format tables to DATA_FORMAT using DATA_FORMAT.

The PUB_PLACE can be bypassed by linking the publication place tables to PUB_PLACE using PUB_PLACE.

The PUBLISHER can be bypassed by linking the publisher tables to PUBLISHER using PUBLISHER.

The PUBLICATION can be bypassed by linking the publication tables to PUBLICATION using PUBLICATION.

The ONLINE_LINK can be bypassed by linking the online link tables to ONLINE_LINK using ONLINE_LINK.

The SCALE can be bypassed by linking the scale tables to SCALE using SCALE.

The TIME_PERIOD can be bypassed by linking the time period tables to TIME_PERIOD using TIME_PERIOD.

The SOC_DAT can be bypassed by linking the human-use tables to SOC_DAT using HUNUM.

The BIOFILE can be bypassed by linking the biology tables to BIORES using RARNUM.

The SOURCES can be bypassed by linking the source tables to SOURCES using SOURCE_ID.

The ORIGINATOR can be bypassed by linking the originator tables to ORIGINATOR using ORIGINATOR.

The DATE_PUB can be bypassed by linking the date published tables to DATE_PUB using DATE_PUB.

The TITLE can be bypassed by linking the title tables to TITLE using TITLE.

The DATA_FORMAT can be bypassed by linking the data format tables to DATA_FORMAT using DATA_FORMAT.

The PUB_PLACE can be bypassed by linking the publication place tables to PUB_PLACE using PUB_PLACE.

The PUBLISHER can be bypassed by linking the publisher tables to PUBLISHER using PUBLISHER.

The PUBLICATION can be bypassed by linking the publication tables to PUBLICATION using PUBLICATION.

The ONLINE_LINK can be bypassed by linking the online link tables to ONLINE_LINK using ONLINE_LINK.

The SCALE can be bypassed by linking the scale tables to SCALE using SCALE.

The TIME_PERIOD can be bypassed by linking the time period tables to TIME_PERIOD using TIME_PERIOD.

The SOC_DAT can be bypassed by linking the human-use tables to SOC_DAT using HUNUM.

The BIOFILE can be bypassed by linking the biology tables to BIORES using RARNUM.

The SOURCES can be bypassed by linking the source tables to SOURCES using SOURCE_ID.

The ORIGINATOR can be bypassed by linking the originator tables to ORIGINATOR using ORIGINATOR.

The DATE_PUB can be bypassed by linking the date published tables to DATE_PUB using DATE_PUB.

The TITLE can be bypassed by linking the title tables to TITLE using TITLE.

The DATA_FORMAT can be bypassed by linking the data format tables to DATA_FORMAT using DATA_FORMAT.

The PUB_PLACE can be bypassed by linking the publication place tables to PUB_PLACE using PUB_PLACE.

The PUBLISHER can be bypassed by linking the publisher tables to PUBLISHER using PUBLISHER.

The PUBLICATION can be bypassed by linking the publication tables to PUBLICATION using PUBLICATION.

The ONLINE_LINK can be bypassed by linking the online link tables to ONLINE_LINK using ONLINE_LINK.

The SCALE can be bypassed by linking the scale tables to SCALE using SCALE.

The TIME_PERIOD can be bypassed by linking the time period tables to TIME_PERIOD using TIME_PERIOD.

The SOC_DAT can be bypassed by linking the human-use tables to SOC_DAT using HUNUM.