Virginia ESI: HYDRO (Hydrography Lines and Polygons)

Metadata also available as - [Parseable text] - [SGML]

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:
                National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
            Publication_Date: 200512
            Title: Virginia ESI: HYDRO (Hydrography Lines and Polygons)
            Edition: 2
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Virginia
            Publication_Information:
                Publication_Place: Seattle, Washington
                Publisher:
                    National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.
            Other_Citation_Details:
                Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
    Description:
        Abstract:
            This data set contains vector lines and polygons representing coastal hydrography used in the creation of the Environmental Sensitivity Index (ESI) for Virginia. 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 Virginia. 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: 1998
Ending_Date: 2004
Currentness_Reference:
The data were compiled during 2004-2005. The currentness dates for the data range from 1998 to 2004 and are documented in the Lineage section.

Status:
Progress: Complete
Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:
Bounding_Coordinates:
West_Bounding_Coordinate: -77.50000
East_Bounding_Coordinate: -75.12500
North_Bounding_Coordinate: 38.87500
South_Bounding_Coordinate: 36.50000

Keywords:
Theme:
Theme_Keyword_Thesaurus: None
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
Place:
Place_Keyword_Thesaurus: None
Place_Keyword: Virginia

Access_Constraints: None
Use_Constraints:
DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Besides the above warning, 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: datafig.jpg

Browse_Graphic_File_Description:

Depicts the relationships between spatial data layers and attribute data tables for the Virginia 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, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.3) and SQL SERVER(r) (version 7.0). The hardware configuration is PC's with Windows Operating System (NT4.0/2000).

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: birds.e00, esi.e00, fish.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, reptpt.e00, socecon.e00, t_mammal.e00, wetlands.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

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. A final review is made by the GIS manager, where the data are written to CD-ROM and the metadata are written. After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks.

Completeness_Report:

These data represent linear and polygonal hydrography for Virginia.

Positional_Accuracy:

    Horizontal_Positional_Accuracy:

        Horizontal_Positional_Accuracy_Report:

            The HYDRO data set was developed from pre-existing digital data and reflects the positional accuracy of these original data. The horizontal positional accuracy of the 1:24,000 U.S. Geological Survey (USGS) topographic quads should conform to National Map Accuracy Standards at scales of 1:24,000. 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: MARYLAND DEPARTMENT OF NATURAL RESOURCES (DNR)

                Publication_Date: 2003

                Title:

                    RECENT (1988-1995) MARYLAND SHORELINES WITH EROSION RATE ATTRIBUTES

                Geospatial_Data_Presentation_Form: DIGITAL VECTOR DATA

                Other_Citation_Details:

                    MARYLAND DNR, CHESAPEAKE BAY AND WATERSHED PROGRAM, MARYLAND GEOLOGICAL SURVEY, <http://www.mgs.md.gov/>

        Type_of_Source_Media: ONLINE

        Source_Time_Period_of_Content:

            Time_Period_Information:

                Range_of_Dates/Times:

                    Beginning_Date: 1988

                    Ending_Date: 1995

            Source_Currentness_Reference: DATE OF IMAGERY

        Source_Citation_Abbreviation: NONE

        Source_Contribution: HYDRO INFORMATION

    Source_Information:

        Source_Citation:

            Citation_Information:

                Originator: NOAA

                Publication_Date: 1996

                Title: NORTH CAROLINA ENVIRONMENTAL SENSITIVITY INDEX DIGITAL DATA

                Geospatial_Data_Presentation_Form: DIGITAL VECTOR DATA

                Other_Citation_Details: NOAA OFFICE OF RESPONSE AND RESTORATION, SEATTLE, WA 98115

        Source_Scale_Denominator: 24,000

        Type_of_Source_Media: CD-ROM

        Source_Time_Period_of_Content:

            Time_Period_Information:

                Single_Date/Time:

                    Calendar_Date: 1996

            Source_Currentness_Reference: DATE OF PUBLICATION

        Source_Citation_Abbreviation: NONE

Source_Contribution: HYDRO INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: RESEARCH PLANNING, INC. (RPI)
            Publication_Date: 2004
            Title: RPI LOW ALTITUDE OVERFLIGHTS
            Geospatial_Data_Presentation_Form: HARDCOPY MAP
            Other_Citation_Details: 2004
    Source_Scale_Denominator: 24000
    Type_of_Source_Media: PAPER
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 2004
        Source_Currentness_Reference: DATE OF SURVEY
    Source_Citation_Abbreviation: NONE
    Source_Contribution: HYDRO INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: RESEARCH PLANNING, INC. (RPI)
            Publication_Date: 2004
            Title: STUDY AREA INDEX
            Geospatial_Data_Presentation_Form: DIGITAL VECTOR DATA
            Other_Citation_Details: UNPUBLISHED
    Source_Scale_Denominator: 24000
    Type_of_Source_Media: DISC
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 2004
        Source_Currentness_Reference: DATE OF PUBLICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: HYDRO INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: U.S. GEOLOGICAL SURVEY
            Publication_Date: VARIES
            Title: SCANNED TOPOGRAPHIC QUADRANGLES
            Geospatial_Data_Presentation_Form: HARDCOPY MAP
            Other_Citation_Details: DENVER, CO OR RESTON, VA
    Source_Scale_Denominator: 24,000
    Type_of_Source_Media: ONLINE
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: VARIES
        Source_Currentness_Reference: DATE OF PUBLICATION
    Source_Citation_Abbreviation: NONE

Source_Contribution: HYDRO INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: U.S. GEOLOGICAL SURVEY
      Publication_Date: 1998
      Title:
        DIGITAL ORTHO QUARTER QUADRANGLES (DOQQ'S) FOR VA,
        DOWNLOADED FROM THE UNIVERSITY OF VIRGINIA (UVA)
        GEOSPATIAL AND STATISTICAL DATA CENTER
      Geospatial_Data_Presentation_Form: DIGITAL RASTER DATA
      Other_Citation_Details:
        <http://fisher.lib.virginia.edu/collections/gis/doq/go_to_html.html>
  Type_of_Source_Media: ONLINE
  Source_Time_Period_of_Content:
    Time_Period_Information:
      Single_Date/Time:
        Calendar_Date: 1998
    Source_Currentness_Reference: DATE OF PUBLICATION
  Source_Citation_Abbreviation: NONE
  Source_Contribution: HYDRO INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: U.S. GEOLOGICAL SURVEY
      Publication_Date: VARIES
      Title: DIGITAL RASTER GRAPHICS FOR VIRGINIA
      Geospatial_Data_Presentation_Form: DIGITAL RASTER DATA
      Other_Citation_Details: DENVER, CO OR RESTON, VA
  Source_Scale_Denominator: 24,000
  Type_of_Source_Media: ONLINE
  Source_Time_Period_of_Content:
    Time_Period_Information:
      Single_Date/Time:
        Calendar_Date: VARIES
    Source_Currentness_Reference: DATE OF PUBLICATION
  Source_Citation_Abbreviation: NONE
  Source_Contribution: HYDRO INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: VIRGINIA GEOGRAPHIC INFORMATION NETWORK
        (VGIN)
      Publication_Date: 2002
      Title:
        1 METER HYDROGRAPHY EXTRACTED FROM DIGITAL
        TERRAIN MODELS (DTM'S)
      Geospatial_Data_Presentation_Form: DIGITAL VECTOR DATA
      Other_Citation_Details: VIRGINIA GEOGRAPHIC INFORMATION
        NETWORK, RICHMOND, VA 23219
  Type_of_Source_Media: FTP

Source_Time_Period_of_Content:
　　Time_Period_Information:
　　　　Single_Date/Time:
　　　　　　Calendar_Date: 2002
　　　　Source_Currentness_Reference: DATE OF PUBLICATION
　　Source_Citation_Abbreviation: NONE
　　Source_Contribution: HYDRO INFORMATION
Process_Step:
　　Process_Description:
　　　　The shoreline was derived primarily from digital coastline data originating from the
　　　　Virginia Geographic Information Network (VGIN) and provided for the project by
　　　　the Virginia Institute of Marine Science (VIMS). Minor gaps in this data set were
　　　　digitized from U.S. Geological Survey (USGS) Digital Ortho Quarter Quads
　　　　(DOQQs), USGS Digital Raster Graphics (DRGs), and scanned USGS topos. In
　　　　some cases, gross shoreline changes were sketched by Research Planning, Inc.
　　　　during ESI classification overflights and digitized from the hardcopy field maps.
　　　　Shoreline from the Maryland Department of Natural Resources (DNR) and the
　　　　NOAA North Carolina ESI Atlas were used for areas outside of Virginia.
　　Process_Date: 200505
　　Process_Contact:
　　　　Contact_Information:
　　　　　　Contact_Organization_Primary:
　　　　　　　　Contact_Organization: NOAA, Office of Response and Restoration
　　　　　　　　Contact_Person: Jill Petersen
　　　　　　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: Jill.Petersen@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: 2911
　　　　SDTS_Terms_Description:
　　　　　　SDTS_Point_and_Vector_Object_Type: Area point
　　　　　　Point_and_Vector_Object_Count: 2911
　　　　SDTS_Terms_Description:
　　　　　　SDTS_Point_and_Vector_Object_Type: Complete chain
　　　　　　Point_and_Vector_Object_Count: 23120
　　　　SDTS_Terms_Description:
　　　　　　SDTS_Point_and_Vector_Object_Type: Link
　　　　　　Point_and_Vector_Object_Count: 2073590
　　　　SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Label Point
Point_and_Vector_Object_Count: 798
SDTS_Terms_Description:
  SDTS_Point_and_Vector_Object_Type: Node, planar graph
  Point_and_Vector_Object_Count: 23135

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 1927
      Ellipsoid_Name: Clark 1866
      Semi-major_Axis: 6378206.400000
      Denominator_of_Flattening_Ratio: 294.978698

Entity_and_Attribute_Information:
  Overview_Description:
    Entity_and_Attribute_Overview:
      In addition to the geographic data layers, one relational attribute or data table, SOURCES, is used to store the source data information in the ESI data structure. The geographic data layer containing resource information (in this case, HYDRO) is linked to the SOURCES table using the SOURCE_ID. The entity-relationship diagram describes the relationships between the attribute tables in the ESI data structure.
  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: Research Planning, Inc.
    Attribute:
      Attribute_Label: LINE
      Attribute_Definition: Type of geographic feature.
      Attribute_Definition_Source: Research Planning, Inc.
      Attribute_Domain_Values:
        Enumerated_Domain:
          Enumerated_Domain_Value: B
          Enumerated_Domain_Value_Definition: Breakwater
          Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Enumerated_Domain:
          Enumerated_Domain_Value: E
          Enumerated_Domain_Value_Definition: Extent of Digital Data
          Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Enumerated_Domain:
          Enumerated_Domain_Value: I
          Enumerated_Domain_Value_Definition: Index

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
      Enumerated_Domain:
         Enumerated_Domain_Value: S
         Enumerated_Domain_Value_Definition: Shoreline
         Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
    Attribute_Label: SOURCE_ID
    Attribute_Definition:
        Spatial data source for the data layer lines that link to records in the SOURCES data
        table.
    Attribute_Definition_Source: Research Planning, Inc.
    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: Research Planning, Inc.
    Attribute:
        Attribute_Label: WATER_CODE
        Attribute_Definition: Specifies a polygon as either water or land.
        Attribute_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: L
                Enumerated_Domain_Value_Definition: Land
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
            Enumerated_Domain:
                Enumerated_Domain_Value: W
                Enumerated_Domain_Value_Definition: Water
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.

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: Research Planning, Inc.

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; and SOURCE_ID in the ESI and HYDRO data layers.

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute:

Attribute_Label: TITLE

Attribute_Definition: Title of source material or data.

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.
Attribute_Domain_Values:
> *Unrepresentable_Domain:* Acceptable values change from atlas to atlas.

Attribute:
Attribute_Label: PUBLICATION
Attribute_Definition: Additional citation information.
Attribute_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
Attribute_Domain_Values:
> *Unrepresentable_Domain:* Acceptable values change from atlas to atlas.

Distribution_Information:
Distributor:
Contact_Information:
Contact_Person_Primary:
Contact_Person: John Kaperick
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) 526-6400
Contact_Facsimile_Telephone: (206) 526-6329
Resource_Description: ESI Atlas for Virginia
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, and will offer a replacement copy of the product when the product is determined unreadable by computer-input peripherals, or when the physical medium is delivered in damaged condition.
Custom_Order_Process:
> Contact NOAA for distribution options (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, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI_Viewer product are also included on the distribution CDs for ease of use of the ESI data. 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: 200512
    Metadata_Review_Date: 200512
    Metadata_Contact:
        Contact_Information:
            Contact_Person_Primary:
                Contact_Person: Jill Petersen
                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: Jill.Petersen@noaa.gov
    Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
    Metadata_Standard_Version: FGDC-STD-001-1998

Generated by mp version 2.8.21 on Mon Dec 12 10:45:07 2005

Virginia ESI: ESI (Environmental Sensitivity Index Shoreline Types - Lines and Polygons)

Metadata also available as - [Parseable text] - [SGML]

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:
                National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
            Publication_Date: 200512
            Title:
                Virginia ESI: ESI (Environmental Sensitivity Index Shoreline Types - Lines and Polygons)
            Edition: 2
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Virginia
            Publication_Information:
                Publication_Place: Seattle, Washington
                Publisher:
                    National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.
            Other_Citation_Details:
                Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
    Description:
        Abstract:
            This data set contains vector lines and polygons representing the shoreline and coastal

habitats for Virginia, classified according to the Environmental Sensitivity Index (ESI) classification system. This data set comprises a portion of the ESI data for Virginia. 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 WETLANDS (Wetland Polygons) data layer, part of the larger Virginia ESI database, for additional coastal 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: 1988

Ending_Date: 2004

Currentness_Reference:

The data were compiled during 2004-2005. The currentness dates for the data range from 1988 to 2004 and are documented in the Lineage section.

Status:

Progress: Complete

Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -77.50000

East_Bounding_Coordinate: -75.12500

North_Bounding_Coordinate: 38.87500

South_Bounding_Coordinate: 36.50000

Keywords:

Theme:

Theme_Keyword_Thesaurus: None

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: Shoreline habitats

Place:

Place_Keyword_Thesaurus: None

Place_Keyword: Virginia

Access_Constraints: None

Use_Constraints:

DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Besides the above warning, 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: datafig.jpg

 Browse_Graphic_File_Description:

  Depicts the relationships between spatial data layers and attribute data tables for the Virginia 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, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.

Native_Data_Set_Environment:

 The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.3) and SQL SERVER(r) (version 7.0). The hardware configuration is PC's with Windows Operating System (NT4.0/2000).

 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: birds.e00, esi.e00, fish.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, reptpt.e00, socecon.e00, t_mammal.e00, wetlands.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

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. A final review is made by the GIS manager, where the data are written to CD-ROM and the metadata are written. 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 WETLANDS (Wetland Polygons) data layer, part of the larger Virginia ESI database, for additional coastal habitat information.

Positional_Accuracy:

 Horizontal_Positional_Accuracy:

  Horizontal_Positional_Accuracy_Report:

   The ESI data set was developed from pre-existing digital sources and reflects the positional accuracy of these original data. The horizontal positional accuracy of the 1:24,000 USGS topographic quads should conform to National Map Accuracy Standards at scales of 1:24,000. The minimum mapping unit (MMU) of the actual shoreline classification segments is estimated at 50 meters where mapping is conducted using 1:24,000 hardcopy fieldmaps. Field verification has shown that the absolute positional accuracy of breaks between shoreline ESI types with a 95-percent error bound is approximately 58 meters. See the Lineage and Process_Description sections for more information on the original data source and how these data were integrated or manipulated to create the final data set.

Lineage:

 Source_Information:

  Source_Citation:

   Citation_Information:

    Originator: MARYLAND DEPARTMENT OF NATURAL RESOURCES (DNR)

    Publication_Date: 2003

    Title:

     RECENT (1988-1995) MARYLAND SHORELINES WITH EROSION RATE ATTRIBUTES

    Geospatial_Data_Presentation_Form: DIGITAL VECTOR DATA

    Other_Citation_Details:

     MARYLAND DNR, CHESAPEAKE BAY AND WATERSHED PROGRAM, MARYLAND GEOLOGICAL SURVEY

     <http://www.mgs.md.gov/>

  Type_of_Source_Media: ONLINE

  Source_Time_Period_of_Content:

   Time_Period_Information:

    Range_of_Dates/Times:

     Beginning_Date: 1988

     Ending_Date: 1995

   Source_Currentness_Reference: DATE OF IMAGERY

  Source_Citation_Abbreviation: NONE

  Source_Contribution: ESI INFORMATION

 Source_Information:

  Source_Citation:

   Citation_Information:

    Originator: RESEARCH PLANNING, INC.

    Publication_Date: 2004

    Title: RPI LOW ALTITUDE OVERFLIGHTS

    Geospatial_Data_Presentation_Form: HARDCOPY MAP

    Other_Citation_Details: 2004

  Source_Scale_Denominator: 24000

  Type_of_Source_Media: PAPER

  Source_Time_Period_of_Content:

   Time_Period_Information:

    Single_Date/Time:

     Calendar_Date: 2004

Source_Currentness_Reference: DATE OF SURVEY
Source_Citation_Abbreviation: NONE
Source_Contribution: ESI INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: U.S. GEOLOGICAL SURVEY
            Publication_Date: VARIES
            Title: SCANNED TOPOGRAPHIC QUADRANGLES
            Geospatial_Data_Presentation_Form: HARDCOPY MAP
            Other_Citation_Details: DENVER, CO OR RESTON, VA
    Source_Scale_Denominator: 24,000
    Type_of_Source_Media: ONLINE
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: VARIES
        Source_Currentness_Reference: DATE OF PUBLICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: ESI INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: U.S. GEOLOGICAL SURVEY
            Publication_Date: 1998
            Title:
                DIGITAL ORTHOPHOTO QUADRANGLES (DOQQ'S) FOR VA,
                DOWNLOADED FROM THE UNIVERSITY OF VIRGINIA (UVA)
                GEOSPATIAL AND STATISTICAL DATA CENTER
            Geospatial_Data_Presentation_Form: DIGITAL RASTER DATA
            Other_Citation_Details:
                <http://fisher.lib.virginia.edu/collections/gis/doq/go_to_html.html>
    Type_of_Source_Media: ONLINE
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 1998
        Source_Currentness_Reference: DATE OF PUBLICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: ESI INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: U.S. GEOLOGICAL SURVEY
            Publication_Date: VARIES
            Title: DIGITAL RASTER GRAPHICS FOR VA
            Geospatial_Data_Presentation_Form: DIGITAL RASTER DATA
            Other_Citation_Details: DENVER, CO OR RESTON, VA
    Source_Scale_Denominator: 24,000
    Type_of_Source_Media: ONLINE
    Source_Time_Period_of_Content:

Time_Period_Information:
    Single_Date/Time:
        Calendar_Date: VARIES
    Source_Currentness_Reference: DATE OF PUBLICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: ESI INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: VIRGINIA GEOGRAPHIC INFORMATION NETWORK (VGIN)
            Publication_Date: 2002
            Title: 1 METER HYDROGRAPHY EXTRACTED FROM DTMS
            Geospatial_Data_Presentation_Form: DIGITAL VECTOR DATA
            Other_Citation_Details: VIRGINIA GEOGRAPHIC INFORMATION NETWORK, RICHMOND, VA 23219
    Type_of_Source_Media: FTP
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 2002
        Source_Currentness_Reference: DATE OF PUBLICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: ESI INFORMATION
Process_Step:
    Process_Description:
        Overflights for Virginia occurred in January 2004. The overflights were conducted at altitudes of 400-600 feet and slow air speeds. All flights were planned to maximize time on site during the 2.5 hours preceding and the 2.5 hours following peak low tide. During this work the shoreline depicted on current 1:24,000-scale USGS topographic maps was annotated with the ESI ranking of observed intertidal shoreline habitats. Where appropriate, revisions to the existing shoreline were made and where necessary, multiple habitats were described for each shoreline segment.
    Process_Date: 200505
    Process_Contact:
        Contact_Information:
            Contact_Organization_Primary:
                Contact_Organization: NOAA, Office of Response and Restoration
                Contact_Person: Jill Petersen
            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: Jill.Petersen@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: 2864
    SDTS_Terms_Description:
        SDTS_Point_and_Vector_Object_Type: Area point
        Point_and_Vector_Object_Count: 2864
    SDTS_Terms_Description:
        SDTS_Point_and_Vector_Object_Type: Complete chain
        Point_and_Vector_Object_Count: 18326
    SDTS_Terms_Description:
        SDTS_Point_and_Vector_Object_Type: Link
        Point_and_Vector_Object_Count: 1806859
    SDTS_Terms_Description:
        SDTS_Point_and_Vector_Object_Type: Node, planar graph
        Point_and_Vector_Object_Count: 18047

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 1927
            Ellipsoid_Name: Clark 1866
            Semi-major_Axis: 6378206.400000
            Denominator_of_Flattening_Ratio: 294.978698

Entity_and_Attribute_Information:
    Overview_Description:
        Entity_and_Attribute_Overview:
            In addition to the geographic data layers, one relational attribute or data table, SOURCES, is used to store the source data information in the ESI data structure. The geographic data layer containing resource information (in this case, ESI) is linked to the SOURCES table using the SOURCE_ID. The entity-relationship diagram describes the relationships between the attribute tables in the ESI data structure.
    Detailed_Description:
        Entity_Type:
            Entity_Type_Label: ESI.AAT
            Entity_Type_Definition:
                The ESI.AAT table contains attribute information for the vector lines representing linear shoreline features with ESI classification.
            Entity_Type_Definition_Source: Research Planning, Inc.
        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: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 1B

Enumerated_Domain_Value_Definition: Exposed, Solid Man-made Structures

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Enumerated_Domain:

Enumerated_Domain_Value: 2A

Enumerated_Domain_Value_Definition: Exposed Wave-cut Platforms in Clay

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Enumerated_Domain:

Enumerated_Domain_Value: 2B

Enumerated_Domain_Value_Definition: Exposed Scarps and Steep Slopes in Clay

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Enumerated_Domain:

Enumerated_Domain_Value: 3A

Enumerated_Domain_Value_Definition: Fine- to Medium-grained Sand Beaches

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Enumerated_Domain:

Enumerated_Domain_Value: 3B

Enumerated_Domain_Value_Definition: Scarps and Steep Slopes in Sand

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Enumerated_Domain:

Enumerated_Domain_Value: 4

Enumerated_Domain_Value_Definition: Coarse-grained Sand Beaches

Enumerated_Domain_Value_Defintion_Source: Research Planning, Inc.

Enumerated_Domain:

Enumerated_Domain_Value: 5

Enumerated_Domain_Value_Definition: Mixed Sand and Gravel Beaches

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
    Enumerated_Domain_Value: 6A
    Enumerated_Domain_Value_Definition: Gravel Beaches
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
    Enumerated_Domain_Value: 6B
    Enumerated_Domain_Value_Definition: Riprap
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
    Enumerated_Domain_Value: 7
    Enumerated_Domain_Value_Definition: Exposed Tidal Flats
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
    Enumerated_Domain_Value: 8A
    Enumerated_Domain_Value_Definition: Sheltered Scarps in Clay
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
    Enumerated_Domain_Value: 8B
    Enumerated_Domain_Value_Definition: Sheltered, Solid Man-made Structures
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
    Enumerated_Domain_Value: 8C
    Enumerated_Domain_Value_Definition: Sheltered Riprap
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
    Enumerated_Domain_Value: 9A
    Enumerated_Domain_Value_Definition: Sheltered Tidal Flats
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
    Enumerated_Domain_Value: 9B
    Enumerated_Domain_Value_Definition: Sheltered Vegetated Low Banks
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
    Enumerated_Domain_Value: 10A
    Enumerated_Domain_Value_Definition: Salt- and Brackish-water marshes
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
    Enumerated_Domain_Value: 10B
    Enumerated_Domain_Value_Definition: Freshwater Marshes
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
    Enumerated_Domain_Value: 10C
    Enumerated_Domain_Value_Definition: Swamps
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
    Enumerated_Domain_Value: U
    Enumerated_Domain_Value_Definition: Unranked
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:

Attribute_Label: LINE
Attribute_Definition: Type of geographic feature.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: B
        Enumerated_Domain_Value_Definition: Breakwater
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Enumerated_Domain:
        Enumerated_Domain_Value: F
        Enumerated_Domain_Value_Definition: Flat
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Enumerated_Domain:
        Enumerated_Domain_Value: S
        Enumerated_Domain_Value_Definition: Shoreline
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
    Attribute_Label: SOURCE_ID
    Attribute_Definition:
        Spatial data source for the data layer lines that link to records in the SOURCES data
        table.
    Attribute_Definition_Source: Research Planning, Inc.
    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: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: E
            Enumerated_Domain_Value_Definition: Estuarine
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Enumerated_Domain:
            Enumerated_Domain_Value: U
            Enumerated_Domain_Value_Definition: Unranked
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Detailed_Description:
    Entity_Type:
        Entity_Type_Label: ESI.PAT
        Entity_Type_Definition:
            The ESI.PAT table contains attribute information for the vector polygons
            representing polygonal features with ESI classification.
        Entity_Type_Definition_Source: Research Planning, Inc.
    Attribute:
        Attribute_Label: ESI
        Attribute_Definition: The item ESI contains values representing the ESI polygon type.
        Attribute_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:

Enumerated_Domain:
    Enumerated_Domain_Value: 7
    Enumerated_Domain_Value_Definition: Exposed Tidal Flats
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
    Enumerated_Domain_Value: 9A
    Enumerated_Domain_Value_Definition: Sheltered Tidal Flats
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
    Enumerated_Domain_Value: U
    Enumerated_Domain_Value_Definition: Unranked
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
    Attribute_Label: WATER_CODE
    Attribute_Definition: Specifies a polygon as either water or land.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: L
            Enumerated_Domain_Value_Definition: Land
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Enumerated_Domain:
            Enumerated_Domain_Value: W
            Enumerated_Domain_Value_Definition: Water
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
    Attribute_Label: ENVIR
    Attribute_Definition: Type of regional environment.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: E
            Enumerated_Domain_Value_Definition: Estuarine
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Enumerated_Domain:
            Enumerated_Domain_Value: U
            Enumerated_Domain_Value_Definition: Unranked
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.
    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; and SOURCE_ID in the ESI and HYDRO data
layers.

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute:

Attribute_Label: TITLE

Attribute_Definition: Title of source material or data.

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: PUBLICATION

Attribute_Definition: Additional citation information.

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.
Attribute_Domain_Values:
> *Unrepresentable_Domain:* Acceptable values change from atlas to atlas.

Distribution_Information:
> *Distributor:*
>> *Contact_Information:*
>>> *Contact_Person_Primary:*
>>>> *Contact_Person:* John Kaperick
>>>> *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) 526-6400
>>> *Contact_Facsimile_Telephone:* (206) 526-6329

> *Resource_Description:* ESI Atlas for Virginia
> *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, and will offer a replacement copy of the product when the product is determined unreadable by computer-input peripherals, or when the physical medium is delivered in damaged condition.

> *Custom_Order_Process:*
>> Contact NOAA for distribution options (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, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI_Viewer product are also included on the distribution CDs for ease of use of the ESI data. 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:* 200512
> *Metadata_Review_Date:* 200512
> *Metadata_Contact:*
>> *Contact_Information:*
>>> *Contact_Person_Primary:*
>>>> *Contact_Person:* Jill Petersen
>>>> *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: Jill.Petersen@noaa.gov
Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998

Generated by mp version 2.8.21 on Mon Dec 12 10:14:49 2005

Virginia ESI: INDEX (Index Polygons)

Metadata also available as - [Parseable text] - [SGML]

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:*
>>>> National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
>>> *Publication_Date:* 200512
>>> *Title:* Virginia ESI: INDEX (Index Polygons)
>>> *Edition:* 2
>>> *Geospatial_Data_Presentation_Form:* Vector digital data
>>> *Series_Information:*
>>>> *Series_Name:* None
>>>> *Issue_Identification:* Virginia
>>> *Publication_Information:*
>>>> *Publication_Place:* Seattle, Washington
>>>> *Publisher:*
>>>>> National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.
>>> *Other_Citation_Details:*
>>>> Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
> *Description:*
>> *Abstract:*
>>> This data set contains vector polygons representing the boundaries of all hardcopy cartographic products produced as part of the Environmental Sensitivity Index (ESI) for Virginia. This data set comprises a portion of the ESI data for Virginia. 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:* 2004
> > *Currentness_Reference:*
> > > The INDEX data were compiled during 2004-2005. The currentness date for the data is 2004 and is documented in the Lineage section.

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

Spatial_Domain:
> *Bounding_Coordinates:*
> > *West_Bounding_Coordinate:* -77.50000
> > *East_Bounding_Coordinate:* -75.12500
> > *North_Bounding_Coordinate:* 38.87500
> > *South_Bounding_Coordinate:* 36.50000

Keywords:
> *Theme:*
> > *Theme_Keyword_Thesaurus:* None
> > *Theme_Keyword:* ESI
> > *Theme_Keyword:* Sensitivity maps
> > *Theme_Keyword:* Coastal resources
> > *Theme_Keyword:* Oil spill planning
> > *Theme_Keyword:* Coastal Zone Management
> > *Theme_Keyword:* Wildlife
> *Place:*
> > *Place_Keyword_Thesaurus:* None
> > *Place_Keyword:* Virginia

Access_Constraints: None
Use_Constraints:
> DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Besides the above warning, 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:* datafig.jpg
> *Browse_Graphic_File_Description:*
> > Depicts the relationships between spatial data layers and attribute data tables for the

Virginia 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, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.3) and SQL SERVER(r) (version 7.0). The hardware configuration is PC's with Windows Operating System (NT4.0/2000).

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: birds.e00, esi.e00, fish.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, reptpt.e00, socecon.e00, t_mammal.e00, wetlands.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

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. A final review is made by the GIS manager, where the data are written to CD-ROM and the metadata are written. 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 produced as part of the Virginia ESI, as well as digital data extents.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

The index polygons in this data layer were generated in ArcInfo from the coordinates of the U.S. Geological Survey (USGS) 1:24,000 topographic map corners. 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 were 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: 2004

                Title: STUDY AREA INDEX

                Geospatial_Data_Presentation_Form: DIGITAL VECTOR DATA

                Other_Citation_Details: UNPUBLISHED

        Source_Scale_Denominator: 24000

        Type_of_Source_Media: DISC

        Source_Time_Period_of_Content:

            Time_Period_Information:

                Single_Date/Time:

                    Calendar_Date: 2004

        Source_Currentness_Reference: DATE OF PUBLICATION

        Source_Citation_Abbreviation: NONE

        Source_Contribution: INDEX INFORMATION

    Process_Step:

        Process_Description:

            Primarily, 1:24,000 U.S. Geological Survey (USGS) topographic maps were used to provide boundaries for cartographic products. In some cases, the polygons represent USGS topographic maps that were re-tiled, moved, or extended to provide better cartographic coverage of the study area.

        Process_Date: 200505

        Process_Contact:

            Contact_Information:

                Contact_Organization_Primary:

                    Contact_Organization: NOAA, Office of Response and Restoration

                    Contact_Person: Jill Petersen

                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: Jill.Petersen@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: 129

        SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Area point
Point_and_Vector_Object_Count: 129
SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: Complete chain
Point_and_Vector_Object_Count: 311
SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 6611
SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 183

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 1927
Ellipsoid_Name: Clark 1866
Semi-major_Axis: 6378206.400000
Denominator_of_Flattening_Ratio: 294.978698

Entity_and_Attribute_Information:
Detailed_Description:
Entity_Type:
Entity_Type_Label: INDEX.PAT
Entity_Type_Definition:
The INDEX.PAT table contains attribute information for the vector polygons
representing the boundaries of the maps and digital data boundaries used in the
creation of the ESI.
Entity_Type_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum: 1
Range_Domain_Maximum: 125
Attribute:
Attribute_Label: TOPO-NAME
Attribute_Definition:
USGS Topographic map name, short description of location, or atlas name.
Attribute_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 24000

Enumerated_Domain_Value_Definition: Scale = 1:24,000

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 0.0000

Range_Domain_Maximum: 1.4890

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: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 11,17

Enumerated_Domain_Value_Definition: Page size= 11" by 17"

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Distribution_Information:

Distributor:

Contact_Information:

Contact_Person_Primary:

Contact_Person: John Kaperick

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) 526-6400

Contact_Facsimile_Telephone: (206) 526-6329

Resource_Description: ESI Atlas for Virginia

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, and will offer a replacement copy of the product when the product is determined unreadable by computer-input peripherals, or when the physical medium is delivered in damaged condition.

Custom_Order_Process:
> Contact NOAA for distribution options (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, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI_Viewer product are also included on the distribution CDs for ease of use of the ESI data. 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:* 200512
> *Metadata_Review_Date:* 200512
> *Metadata_Contact:*
>> *Contact_Information:*
>>> *Contact_Person_Primary:*
>>>> *Contact_Person:* Jill Petersen
>>>> *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:* Jill.Petersen@noaa.gov
> *Metadata_Standard_Name:* Content Standards for Digital Geospatial Metadata
> *Metadata_Standard_Version:* FGDC-STD-001-1998

Generated by mp version 2.8.21 on Thu Dec 08 12:13:13 2005

Virginia ESI: Wetlands (Wetland Polygons)

Metadata also available as - [Parseable text] - [SGML]

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:
                National Oceanic and Atmospheric Administration (NOAA), National Ocean
                Service, Office of Response and Restoration, Hazardous Materials Response
                Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point,
                Virginia.
            Publication_Date: 200512
            Title: Virginia ESI: Wetlands (Wetland Polygons)
            Edition: 2
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Virginia
            Publication_Information:
                Publication_Place: Seattle, Washington
                Publisher:
                    National Oceanic and Atmospheric Administration (NOAA), National Ocean
                    Service, Office of Response and Restoration, Hazardous Materials Response
                    Division, Seattle, Washington.
            Other_Citation_Details:
                Prepared by Research Planning, Inc., Columbia, South Carolina for the National
                Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office
                of Response and Restoration, Hazardous Materials Response Division, Seattle,
                Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
    Description:
        Abstract:
            This data set contains vector polygons representing the coastal wetlands for Virginia,
            classified according to the Environmental Sensitivity Index (ESI) classification system.
            This data set comprises a portion of the ESI data for Virginia. 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 ESI data layer, part of the larger Virginia ESI database, for additional coastal 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: 1974

Ending_Date: 1988

Currentness_Reference:

The data were compiled during 2004-2005. The currentness dates for the data range from 1974 to 1988 and are documented in the Lineage section.

Status:

Progress: Complete

Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -77.50000

East_Bounding_Coordinate: -75.12500

North_Bounding_Coordinate: 38.87500

South_Bounding_Coordinate: 36.50000

Keywords:

Theme:

Theme_Keyword_Thesaurus: None

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: Coastal wetlands

Place:

Place_Keyword_Thesaurus: None

Place_Keyword: Virginia

Access_Constraints: None

Use_Constraints:

DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Besides the above warning, 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: datafig.jpg
Browse_Graphic_File_Description:
> Depicts the relationships between spatial data layers and attribute data tables for the Virginia 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, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.

Native_Data_Set_Environment:
> The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.3) and SQL SERVER(r) (version 7.0). The hardware configuration is PC's with Windows Operating System (NT4.0/2000).
>
> 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: birds.e00, esi.e00, fish.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, reptpt.e00, socecon.e00, t_mammal.e00, wetlands.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

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. A final review is made by the GIS manager, where the data are written to CD-ROM and the metadata are written. 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 wetlands classified according to the Environmental Sensitivity Index (ESI) classification system. See also the ESI data layer, part of the larger Virginia ESI database, for additional coastal habitat information.

> *Positional_Accuracy:*
> > *Horizontal_Positional_Accuracy:*
> > > *Horizontal_Positional_Accuracy_Report:*
> > > > The WETLANDS data set was developed from pre-existing digital sources and

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

Lineage:

    Source_Information:

        Source_Citation:

            Citation_Information:

                Originator: COMPREHENSIVE COASTAL INVENTORY, VIMS, COLLEGE OF WILLIAM AND MARY

                Publication_Date: 1974-1988

                Title: TIDAL MARSH INVENTORY (TMIALL27)

                Geospatial_Data_Presentation_Form: DIGITAL VECTOR DATA

                Other_Citation_Details: GLOUCESTER POINT, VA, VIRGINIA INSTITUTE OF MARINE SCIENCE

        Source_Scale_Denominator: 24000

        Type_of_Source_Media: DISk

        Source_Time_Period_of_Content:

            Time_Period_Information:

                Range_of_Dates/Times:

                    Beginning_Date: 1974

                    Ending_Date: 1988

            Source_Currentness_Reference: DATE OF INVENTORY

        Source_Citation_Abbreviation: NONE

        Source_Contribution: WETLANDS INFORMATION

    Process_Step:

        Process_Description:

        The WETLANDS data layer was created by clipping the Virginia Institute of Marine Science (VIMS) College of William and Mary Tidal Marsh Inventory data set with the ESI Hydrography (HYDRO) layer for this atlas. The existing 12-category wetland classification scheme for the Tidal Marsh Inventory was collapsed to the ESI scale classification.

        Process_Date: 200505

        Process_Contact:

            Contact_Information:

                Contact_Organization_Primary:

                    Contact_Organization: NOAA, Office of Response and Restoration

                    Contact_Person: Jill Petersen

                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: Jill.Petersen@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: 18725
    SDTS_Terms_Description:
        SDTS_Point_and_Vector_Object_Type: Area point
        Point_and_Vector_Object_Count: 18725
    SDTS_Terms_Description:
        SDTS_Point_and_Vector_Object_Type: Complete chain
        Point_and_Vector_Object_Count: 20259
    SDTS_Terms_Description:
        SDTS_Point_and_Vector_Object_Type: Link
        Point_and_Vector_Object_Count: 1624956
    SDTS_Terms_Description:
        SDTS_Point_and_Vector_Object_Type: Node, planar graph
        Point_and_Vector_Object_Count: 19989

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 1927
            Ellipsoid_Name: Clark 1866
            Semi-major_Axis: 6378206.400000
            Denominator_of_Flattening_Ratio: 294.978698

Entity_and_Attribute_Information:
    Detailed_Description:
        Entity_Type:
            Entity_Type_Label: ESI.PAT
            Entity_Type_Definition:
                The ESI.PAT table contains attribute information for the vector polygons
                representing polygonal features with ESI classification.
            Entity_Type_Definition_Source: Research Planning, Inc.
        Attribute:
            Attribute_Label: ESI
            Attribute_Definition: The item ESI contains values representing the ESI polygon type.
            Attribute_Definition_Source: Research Planning, Inc.
            Attribute_Domain_Values:
                Enumerated_Domain:
                    Enumerated_Domain_Value: 10A
                    Enumerated_Domain_Value_Definition: Salt- and Brackish-Water Marshes
                    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
                Enumerated_Domain:
                    Enumerated_Domain_Value: 10B
                    Enumerated_Domain_Value_Definition: Freshwater Marshes

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
 Enumerated_Domain_Value: 10D
 Enumerated_Domain_Value_Definition: Scrub-shrub Wetlands
 Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
 Enumerated_Domain_Value: U
 Enumerated_Domain_Value_Definition: Unranked
 Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Distribution_Information:
 Distributor:
  Contact_Information:
   Contact_Person_Primary:
    Contact_Person: John Kaperick
    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) 526-6400
   Contact_Facsimile_Telephone: (206) 526-6329
 Resource_Description: ESI Atlas for Virginia
 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, and will offer a replacement copy of the product when the product is determined unreadable by computer-input peripherals, or when the physical medium is delivered in damaged condition.
 Custom_Order_Process:
  Contact NOAA for distribution options (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, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI_Viewer product are also included on the distribution CDs for ease of use of the ESI data. 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: 200512
 Metadata_Review_Date: 200512
 Metadata_Contact:
  Contact_Information:
   Contact_Person_Primary:
    Contact_Person: Jill Petersen
    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: Jill.Petersen@noaa.gov
Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998

Generated by mp version 2.8.21 on Thu Dec 08 12:06:06 2005

Virginia ESI: MGT (Management Area Polygons)

Metadata also available as - [Parseable text] - [SGML]

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:
                National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
            Publication_Date: 200512
            Title: Virginia ESI: MGT (Management Area Polygons)
            Edition: 2
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Virginia
            Publication_Information:
                Publication_Place: Seattle, Washington
                Publisher:
                    National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.
            Other_Citation_Details:
                Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
    Description:
        Abstract:
            This data set contains boundaries for management areas, national parks, state and local parks, and wildlife refuges in Virginia. Vector polygons in this data set represent the management areas. Location-specific type and source information is 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 Environmental Sensitivity Index (ESI) data for Virginia. 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 Virginia 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: 2001
Ending_Date: 2003
Currentness_Reference:
The MGT data were compiled during 2004-2005. The currentness dates for the data range from 2001 to 2003 and are documented in the Lineage section.

Status:
Progress: Complete
Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:
Bounding_Coordinates:
West_Bounding_Coordinate: -77.50000
East_Bounding_Coordinate: -75.12500
North_Bounding_Coordinate: 38.87500
South_Bounding_Coordinate: 36.50000

Keywords:
Theme:
Theme_Keyword_Thesaurus: None
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 areas
Theme_Keyword: Human use resources
Place:
Place_Keyword_Thesaurus: None
Place_Keyword: Virginia

Access_Constraints: None

Use_Constraints:
DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Besides the above warning, 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: datafig.jpg

Browse_Graphic_File_Description:

Depicts the relationships between spatial data layers and attribute data tables for the Virginia 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, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.3) and SQL SERVER(r) (version 7.0). The hardware configuration is PC's with Windows Operating System (NT4.0/2000).

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: birds.e00, esi.e00, fish.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, reptpt.e00, socecon.e00, t_mammal.e00, wetlands.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

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. A final review is made by the GIS manager, where the data are written to CD-ROM and the metadata are written. After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks.

Completeness_Report:

These data represent a synthesis of digital boundaries for management areas. These data do not necessarily represent all management areas in Virginia. See also the SOCECON (Socioeconomic

Resource Points and Lines) data layer, part of the larger Virginia ESI database, for additional human-use information.

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 1:24,000. See the Lineage and Process_Description sections for more information on the original data source and how these data were integrated or manipulated to create the final data set.

Lineage:

    Source_Information:

        Source_Citation:

            Citation_Information:

                Originator: VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION

                Publication_Date: 2001

                Title: STATE FORESTS

                Geospatial_Data_Presentation_Form: DIGITAL VECTOR DATA

                Other_Citation_Details:

                    VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION, RICHMOND, VA

            Type_of_Source_Media: ONLINE

            Source_Time_Period_of_Content:

                Time_Period_Information:

                    Single_Date/Time:

                        Calendar_Date: 2001

                Source_Currentness_Reference: DATE OF PUBLICATION

            Source_Citation_Abbreviation: NONE

            Source_Contribution: MGT INFORMATION

    Source_Information:

        Source_Citation:

            Citation_Information:

                Originator: VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION

                Publication_Date: 2001

                Title: NATIONAL PARK BOUNDARIES

                Geospatial_Data_Presentation_Form: DIGITAL VECTOR DATA

                Other_Citation_Details: VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION

            Type_of_Source_Media: ONLINE

            Source_Time_Period_of_Content:

                Time_Period_Information:

                    Single_Date/Time:

                        Calendar_Date: 2001

                Source_Currentness_Reference: DATE OF PUBLICATION

            Source_Citation_Abbreviation: NONE

            Source_Contribution: MGT INFORMATION

Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION
            Publication_Date: 2001
            Title: STATE PARKS AND STATE DEDICATED NATURAL AREA PRESERVES
            Geospatial_Data_Presentation_Form: DIGITAL VECTOR DATA
            Other_Citation_Details:
                VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION, RICHMOND, VA
    Type_of_Source_Media: ONLINE
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 2001
        Source_Currentness_Reference: DATE OF PUBLICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: MGT INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION
            Publication_Date: 2001
            Title: NATIONAL WILDLIFE REFUGES
            Geospatial_Data_Presentation_Form: DIGITAL VECTOR DATA
            Other_Citation_Details:
                VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION, RICHMOND, VA
    Type_of_Source_Media: ONLINE
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 2001
        Source_Currentness_Reference: DATE OF PUBLICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: MGT INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: VIRGINIA DEPARTMENT OF GAME AND INLAND FISHERIES
            Publication_Date: 2003
            Title: WILDLIFE MANAGEMENT AREA BOUNDARIES
            Geospatial_Data_Presentation_Form: DIGITAL VECTOR DATA
            Other_Citation_Details: UNPUBLISHED
    Source_Scale_Denominator: 24,000
    Type_of_Source_Media: ONLINE
    Source_Time_Period_of_Content:

Time_Period_Information:
　Single_Date/Time:
　　Calendar_Date: 2003
　Source_Currentness_Reference: DATE OF PUBLICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: MGT INFORMATION
Process_Step:
　Process_Description:

Five digital coverages were used to depict management areas for this data layer: (1) Department of Game and Inland Fisheries Wildlife Management Areas (WMAs), (2) Department of Conservation and Recreation (DCR) National Parks, (3) DCR State Parks, (4) DCR National Wildlife Refuges (NWRs), and (5) DCR State Forests.

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 a human-use data layer: (1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles and digitized; (2) hardcopy maps are digitized at their source scale; and (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 compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. 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.

Process_Date: 200505
Process_Contact:
　Contact_Information:
　　Contact_Organization_Primary:
　　　Contact_Organization: NOAA, Office of Response and Restoration
　　　Contact_Person: Jill Petersen
　　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: Jill.Petersen@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: 309
　　SDTS_Terms_Description:
　　　SDTS_Point_and_Vector_Object_Type: Area point

> *Point_and_Vector_Object_Count:* 309
> *SDTS_Terms_Description:*
> > *SDTS_Point_and_Vector_Object_Type:* Complete chain
> > *Point_and_Vector_Object_Count:* 429
> *SDTS_Terms_Description:*
> > *SDTS_Point_and_Vector_Object_Type:* Link
> > *Point_and_Vector_Object_Count:* 78931
> *SDTS_Terms_Description:*
> > *SDTS_Point_and_Vector_Object_Type:* Node, planar graph
> > *Point_and_Vector_Object_Count:* 413

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 1927
> > > *Ellipsoid_Name:* Clark 1866
> > > *Semi-major_Axis:* 6378206.400000
> > > *Denominator_of_Flattening_Ratio:* 294.978698

Entity_and_Attribute_Information:
> *Overview_Description:*
> > *Entity_and_Attribute_Overview:*
> > > In addition to the geographic data layers, 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 Virginia, the number is 55). ID is a unique combination of the atlas number (55), an element specific number (MGT = 11), and a unique record number. SOC_DAT and the other relational data tables are described below 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.
> *Detailed_Description:*
> > *Entity_Type:*
> > > *Entity_Type_Label:* MGT.PAT
> > > *Entity_Type_Definition:*
> > > > The MGT.PAT table contains attribute information for the vector polygons representing national parks, state and local parks, wildlife refuges, and other management areas. 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:* Research Planning, Inc.
> > *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: Research Planning, Inc.
Attribute_Domain_Values:
> *Enumerated_Domain:*
>> *Enumerated_Domain_Value:* MA
>> *Enumerated_Domain_Value_Definition:* Management Area
>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute_Domain_Values:
> *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:* Research Planning, Inc.

Attribute_Domain_Values:
> *Enumerated_Domain:*
>> *Enumerated_Domain_Value:* NP
>> *Enumerated_Domain_Value_Definition:* National Park
>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute_Domain_Values:
> *Enumerated_Domain:*
>> *Enumerated_Domain_Value:* P
>> *Enumerated_Domain_Value_Definition:* Regional or State Park
>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute_Domain_Values:
> *Enumerated_Domain:*
>> *Enumerated_Domain_Value:* WR
>> *Enumerated_Domain_Value_Definition:* Wildlife Refuge
>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

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 (55), 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:* 551100002
>>> *Range_Domain_Maximum:* 551100312

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: 55000098
Range_Domain_Maximum: 55000165

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: Research Planning, Inc.
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 polygons and do not contain information.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum: 55000001
Range_Domain_Maximum: 55000165
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 (55), element number (SOCECON=10; MGT=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: 551000001
Range_Domain_Maximum: 551000312

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: Research Planning, Inc.
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.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:
Range_Domain:

Range_Domain_Minimum: 55000001
Range_Domain_Maximum: 55000165

Attribute:

Attribute_Label: TYPE
Attribute_Definition: Identifies the feature type
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: AIRPORT
Enumerated_Domain_Value_Definition: Airport
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: AQUACULTURE
Enumerated_Domain_Value_Definition: Aquaculture Site
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: BEACH
Enumerated_Domain_Value_Definition: Beach
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: BOAT RAMP
Enumerated_Domain_Value_Definition: Boat Ramp
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: COAST GUARD
Enumerated_Domain_Value_Definition: Coast Guard Station
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: HELIPORT
Enumerated_Domain_Value_Definition: Heliport
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: LOCK AND DAM
Enumerated_Domain_Value_Definition: Lock and Dam
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: MANAGEMENT AREA
Enumerated_Domain_Value_Definition: Management Area
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: MARINA
Enumerated_Domain_Value_Definition: Marina
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

> *Attribute_Domain_Values:*
>> *Enumerated_Domain:*
>>> *Enumerated_Domain_Value:* NATIONAL PARK
>>> *Enumerated_Domain_Value_Definition:* National Park
>>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
>
> *Attribute_Domain_Values:*
>> *Enumerated_Domain:*
>>> *Enumerated_Domain_Value:* REGIONAL OR STATE PARK
>>> *Enumerated_Domain_Value_Definition:* Regional or State Park
>>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
>
> *Attribute_Domain_Values:*
>> *Enumerated_Domain:*
>>> *Enumerated_Domain_Value:* WATER INTAKE
>>> *Enumerated_Domain_Value_Definition:* Water Intake
>>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
>
> *Attribute_Domain_Values:*
>> *Enumerated_Domain:*
>>> *Enumerated_Domain_Value:* WILDLIFE REFUGE
>>> *Enumerated_Domain_Value_Definition:* Wildlife Refuge
>>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:
> *Attribute_Label:* NAME
> *Attribute_Definition:* The feature name
> *Attribute_Definition_Source:* Research Planning, Inc.
> *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:* Research Planning, Inc.
> *Attribute_Domain_Values:*
>> *Unrepresentable_Domain:* Acceptable values change from atlas to atlas.

Attribute:
> *Attribute_Label:* PHONE
> *Attribute_Definition:* Contact telephone number
> *Attribute_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
>> *Unrepresentable_Domain:* Acceptable values change from atlas to atlas

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:* Research Planning, Inc.
> *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: Research Planning, Inc.

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.

Entity_Type_Definition_Source: Research Planning, Inc.

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; and SOURCE_ID in the ESI and HYDRO data layers.

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute:

Attribute_Label: TITLE

Attribute_Definition: Title of source material or data.

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: PUBLICATION

Attribute_Definition: Additional citation information.

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Distribution_Information:

Distributor:

Contact_Information:

Contact_Person_Primary:

Contact_Person: John Kaperick

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) 526-6400

Contact_Facsimile_Telephone: (206) 526-6329

Resource_Description: ESI Atlas for Virginia

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, and
will offer a replacement copy of the product when the product is determined unreadable by
computer-input peripherals, or when the physical medium is delivered in damaged condition.

Custom_Order_Process:

Contact NOAA for distribution options (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, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI_Viewer product are also included on the distribution CDs for ease of use of the ESI data. 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: 200512
    Metadata_Review_Date: 200512
    Metadata_Contact:
        Contact_Information:
            Contact_Person_Primary:
                Contact_Person: Jill Petersen
                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: Jill.Petersen@noaa.gov
    Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
    Metadata_Standard_Version: FGDC-STD-001-1998

Generated by mp version 2.8.21 on Thu Dec 08 11:52:39 2005

Virginia ESI: SOCECON (Socioeconomic Resource Points and Lines)

Metadata also available as - [Parseable text] - [SGML]

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:
                National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
            Publication_Date: 200512
            Title: Virginia ESI: SOCECON (Socioeconomic Resource Points and Lines)
            Edition: 2
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Virginia
            Publication_Information:
                Publication_Place: Seattle, Washington
                Publisher:
                National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.
            Other_Citation_Details:
                Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
    Description:
        Abstract:
            This data set contains data for airports, aquaculture sites, beaches, boat ramps, coast guard stations, heliports, dams, marinas, water intakes, bridges, and state boundaries for Virginia. Vector points and lines in this data set represent the human-use site locations and

political boundaries. Location-specific type and source information is 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 Environmental Sensitivity Index (ESI) data for Virginia. 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 (Management Area Polygons) data layer, part of the larger Virginia 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: 2000
Ending_Date: 2004
Currentness_Reference:
The SOCECON data were compiled during 2004 - 2005. The currentness dates for the data range from 2000 to 2004 and are documented in the Lineage section.

Status:
Progress: Complete
Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:
Bounding_Coordinates:
West_Bounding_Coordinate: -77.50000
East_Bounding_Coordinate: -75.12500
North_Bounding_Coordinate: 38.87500
South_Bounding_Coordinate: 36.50000

Keywords:
Theme:
Theme_Keyword_Thesaurus: None
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: Socioeconomic resources
Theme_Keyword: Human use resources
Place:
Place_Keyword_Thesaurus: None
Place_Keyword: Virginia

Access_Constraints: None
Use_Constraints:
DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Besides the above warning, 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: datafig.jpg

    Browse_Graphic_File_Description:

        Depicts the relationships between spatial data layers and attribute data tables for the Virginia 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, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.

Native_Data_Set_Environment:

    The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.3) and SQL SERVER(r) (version 7.0). The hardware configuration is PC's with Windows Operating System (NT4.0/2000).

    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: birds.e00, esi.e00, fish.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, reptpt.e00, socecon.e00, t_mammal.e00, wetlands.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

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. A final review is made by the GIS manager, where the data are written to CD-ROM and the metadata are written.

After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks.

Completeness_Report:

These data represent a synthesis of expert knowledge, available hardcopy reports, and digital data on socioeconomic resources. These data do not necessarily represent all human-use sites in Virginia. See also the MGT (Management Area Polygons) data layer, part of the larger Virginia ESI database, for additional human-use information.

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 1:24,000. See the Lineage and Process_Description sections for more information on the original data source and how these data were integrated or manipulated to create the final data set.

Lineage:

  Source_Information:

   Source_Citation:

    Citation_Information:

     Originator: DELORME

     Publication_Date: 2000

     Title: VIRGINIA ATLAS AND GAZETTEER

     Geospatial_Data_Presentation_Form: HARDCOPY MAP

     Other_Citation_Details: DELORME, P.O. BOX 298, YARMOUTH, MAINE, 80 PP.

   Source_Scale_Denominator: 150,000

   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: NONE

   Source_Contribution: SOCECON INFORMATION

  Source_Information:

   Source_Citation:

    Citation_Information:

     Originator: GALLEGOS, J. (U.S. FISH AND WILDLIFE SERVICE [USFWS], VA BEACH)

     Publication_Date: 2004

     Title: BACK BAY NATIONAL WILDLIFE REFUGE SPECIES DISTRIBUTION

     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: 2004

Source_Currentness_Reference: DATE OF COMMUNICATION

Source_Citation_Abbreviation: NONE

Source_Contribution: SOCECON INFORMATION

Source_Information:

Source_Citation:

Citation_Information:

Originator:

LENEE HARNER, VIRGINIA DEPARTMENT OF GAME AND INLAND FISHERIES (VDGIF)

Publication_Date: 2003

Title: dgif_boat_ramp03_1783

Geospatial_Data_Presentation_Form: DIGITAL VECTOR DATA

Other_Citation_Details: UNPUBLISHED

Type_of_Source_Media: ONLINE

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 2002

Source_Currentness_Reference: DATE OF PUBLICATION

Source_Citation_Abbreviation: NONE

Source_Contribution: SOCECON INFORMATION

Source_Information:

Source_Citation:

Citation_Information:

Originator: OESTERLING, M., VIRGINIA INSTITUTE OF MARINE SCIENCE (VIMS)

Publication_Date: 2004

Title: DISTRIBUTION AND ABUNDANCE OF SHELLFISH IN VIRGINIA

Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE

Other_Citation_Details: N/A

Type_of_Source_Media: PERSONAL COMMUNICATION

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 2004

Source_Currentness_Reference: DATE OF COMMUNICATION

Source_Citation_Abbreviation: NONE

Source_Contribution: SOCECON INFORMATION

Source_Information:

Source_Citation:

Citation_Information:

Originator: RESEARCH PLANNING, INC.

Publication_Date: 2004

Title: RPI-LOW ALTITUDE OVERFLIGHTS

Geospatial_Data_Presentation_Form: HARDCOPY MAP

Other_Citation_Details: 2004

Source_Scale_Denominator: 24000

Type_of_Source_Media: PAPER

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:
  Calendar_Date: 2004
Source_Currentness_Reference: DATE OF SURVEY
Source_Citation_Abbreviation: NONE
Source_Contribution: SOCECON INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: T. PENN, USFWS, CHINCOTEAGUE ISLAND
      Publication_Date: 2004
      Title: DISTRIBUTION OF CHINCOTEAGUE NATIONAL WILDLIFE
      REFUGE SPECIES
      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: 2004
    Source_Currentness_Reference: DATE OF COMMUNICATION
  Source_Citation_Abbreviation: NONE
  Source_Contribution: SOCECON INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: UNIVERSITY OF VIRGINIA LIBRARY
      Publication_Date: 2004
      Title: THE VIRGINIA GAZETTEER
      Geospatial_Data_Presentation_Form: DIGITAL TABLE
      Other_Citation_Details: GEOSPATIAL AND STATISTICAL DATA
      CENTER
  Type_of_Source_Media: ONLINE
  Source_Time_Period_of_Content:
    Time_Period_Information:
      Single_Date/Time:
        Calendar_Date: 2004
    Source_Currentness_Reference: DATE OF SURVEY
  Source_Citation_Abbreviation: NONE
  Source_Contribution: SOCECON INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: UNIVERSITY OF VIRGINIA LIBRARY
      Publication_Date: 2004
      Title: THE VIRGINIA GAZETTEER
      Geospatial_Data_Presentation_Form: DIGITAL TABLE
      Other_Citation_Details: GEOSPATIAL AND STATISTICAL DATA
      CENTER
  Type_of_Source_Media: ONLINE
  Source_Time_Period_of_Content:
    Time_Period_Information:

> *Single_Date/Time:*
>> *Calendar_Date:* 2004
> *Source_Currentness_Reference:* DATE OF SURVEY
Source_Citation_Abbreviation: NONE
Source_Contribution: SOCECON INFORMATION
Source_Information:
> *Source_Citation:*
>> *Citation_Information:*
>>> *Originator:* VIRGINIA INSTITUTE OF MARINE SCIENCE (VIMS)
>>> *Publication_Date:* 2002
>>> *Title:* AQUASITES032802
>>> *Geospatial_Data_Presentation_Form:* DIGITAL VECTOR DATA
>>> *Other_Citation_Details:* VIMS, GLOUCESTER POINT, VA
> *Type_of_Source_Media:* ONLINE
> *Source_Time_Period_of_Content:*
>> *Time_Period_Information:*
>>> *Single_Date/Time:*
>>>> *Calendar_Date:* 2002
> *Source_Currentness_Reference:* DATE OF SURVEY
> *Source_Citation_Abbreviation:* NONE
> *Source_Contribution:* SOCECON INFORMATION
Process_Step:
> *Process_Description:*
>> Five main sources of data were used to depict human-use resources for this data layer: (1) Virginia Institute of Marine Science (VIMS) 2002 Aquaculture Sites point data, (2) personal interviews with resource experts from the U.S. Fish and Wildlife Service (USFWS), (3) Virginia Department of Game and Inland Fisheries' (VDGIF) 2003 owned public boating access sites, (4) University of Virginia Geospatial and Statistical Data Center's Virginia Gazetteer, and (5) digital raster graphics (DRGs) and aerial photographs.
>>
>> 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 a human-use data layer: (1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles and digitized; (2) hardcopy maps are digitized at their source scale; and (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 compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. 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:* 200505
> *Process_Contact:*
>> *Contact_Information:*
>>> *Contact_Organization_Primary:*
>>>> *Contact_Organization:* NOAA, Office of Response and Restoration
>>>> *Contact_Person:* Jill Petersen

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: Jill.Petersen@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: 423
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Complete chain
            Point_and_Vector_Object_Count: 156
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Link
            Point_and_Vector_Object_Count: 4069
        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 1927
            Ellipsoid_Name: Clark 1866
            Semi-major_Axis: 6378206.400000
            Denominator_of_Flattening_Ratio: 294.978698

Entity_and_Attribute_Information:
    Overview_Description:
        Entity_and_Attribute_Overview:
            In addition to the geographic data layers, 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 Virginia, the number is 55). ID is a unique combination of the atlas number (55), an

element specific number (SOCECON = 10), and a unique record number. SOC_DAT and the other relational data tables are described below 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.

Detailed_Description:

    Entity_Type:

        Entity_Type_Label: SOCECON.PAT

        Entity_Type_Definition:

            The SOCECON.PAT table contains attribute information for the vector points representing airports, aquaculture sites, beaches, boat ramps, coast guard stations, heliports, dams, marinas, 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: Research Planning, Inc.

    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: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

                Enumerated_Domain_Value: AQ

                Enumerated_Domain_Value_Definition: Aquaculture Site

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

                Enumerated_Domain_Value: B

                Enumerated_Domain_Value_Definition: Beach

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

                Enumerated_Domain_Value: A

                Enumerated_Domain_Value_Definition: Airport

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

                Enumerated_Domain_Value: BR

                Enumerated_Domain_Value_Definition: Boat Ramp

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

                Enumerated_Domain_Value: CG

                Enumerated_Domain_Value_Definition: Coast Guard Station

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

                Enumerated_Domain_Value: HP

                Enumerated_Domain_Value_Definition: Heliport

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
> *Enumerated_Domain:*
>> *Enumerated_Domain_Value:* LD
>> *Enumerated_Domain_Value_Definition:* Lock and Dam
>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute_Domain_Values:
> *Enumerated_Domain:*
>> *Enumerated_Domain_Value:* M
>> *Enumerated_Domain_Value_Definition:* Marina
>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute_Domain_Values:
> *Enumerated_Domain:*
>> *Enumerated_Domain_Value:* WI
>> *Enumerated_Domain_Value_Definition:* Water Intake
>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

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 (55), element number (10), and record number.
> *Attribute_Definition_Source:* NOAA
> *Attribute_Domain_Values:*
>> *Range_Domain:*
>>> *Range_Domain_Minimum:* 551000001
>>> *Range_Domain_Maximum:* 551000423

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:* 55000001
>>> *Range_Domain_Maximum:* 55000162

Detailed_Description:
> *Entity_Type:*
>> *Entity_Type_Label:* SOCECON.AAT
>> *Entity_Type_Definition:*
>>> The SOCECON.AAT table contains attribute information for the vector lines representing bridges and state boundaries. 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:* Research Planning, Inc.

> *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:* Research Planning, Inc.
>> *Attribute_Domain_Values:*

Enumerated_Domain:

      Enumerated_Domain_Value: R

      Enumerated_Domain_Value_Definition: Road, Transportation, or Bridge

      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

      Enumerated_Domain_Value: SB

      Enumerated_Domain_Value_Definition: State Border

      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

  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 polygons and do not contain information.

    Attribute_Definition_Source: NOAA

    Attribute_Domain_Values:

      Range_Domain:

        Range_Domain_Minimum: 55000001

        Range_Domain_Maximum: 55000165

  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 (55), element number (SOCECON=10; MGT=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: 551000001

        Range_Domain_Maximum: 551000312

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: Research Planning, Inc.

  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.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:
    Range_Domain:
        Range_Domain_Minimum: 55000001
        Range_Domain_Maximum: 55000165
Attribute:
Attribute_Label: TYPE
Attribute_Definition: Identifies the feature type
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: AIRPORT
        Enumerated_Domain_Value_Definition: Airport
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: AQUACULTURE
        Enumerated_Domain_Value_Definition: Aquaculture Site
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: BEACH
        Enumerated_Domain_Value_Definition: Beach
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: BOAT RAMP
        Enumerated_Domain_Value_Definition: Boat Ramp
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: COAST GUARD
        Enumerated_Domain_Value_Definition: Coast Guard Station
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: HELIPORT
        Enumerated_Domain_Value_Definition: Heliport
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: LOCK AND DAM
        Enumerated_Domain_Value_Definition: Lock and Dam
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: MANAGEMENT AREA

Enumerated_Domain_Value_Definition: Management Area
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: MARINA
Enumerated_Domain_Value_Definition: Marina
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: NATIONAL PARK
Enumerated_Domain_Value_Definition: National Park
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: REGIONAL OR STATE PARK
Enumerated_Domain_Value_Definition: Regional or State Park
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: WATER INTAKE
Enumerated_Domain_Value_Definition: Water Intake
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: WILDLIFE REFUGE
Enumerated_Domain_Value_Definition: Wildlife Refuge
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: NAME
Attribute_Definition: The feature name
Attribute_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
Attribute_Domain_Values:
Unrepresentable_Domain: Acceptable values change from atlas to atlas.
Attribute:
Attribute_Label: PHONE
Attribute_Definition: Contact telephone number
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Unrepresentable_Domain: Acceptable values change from atlas to atlas
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: Research Planning, Inc.

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: Research Planning, Inc.
  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.
    Entity_Type_Definition_Source: Research Planning, Inc.
  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; and SOURCE_ID in the ESI and HYDRO data
      layers.
    Attribute_Definition_Source: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.

Attribute:

Attribute_Label: TITLE

Attribute_Definition: Title of source material or data.

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: PUBLICATION

Attribute_Definition: Additional citation information.

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Distribution_Information:

Distributor:

Contact_Information:

Contact_Person_Primary:

Contact_Person: John Kaperick

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) 526-6400

Contact_Facsimile_Telephone: (206) 526-6329

Resource_Description: ESI Atlas for Virginia

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, and will offer a replacement copy of the product when the product is determined unreadable by computer-input peripherals, or when the physical medium is delivered in damaged condition.

Custom_Order_Process:
Contact NOAA for distribution options (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, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI_Viewer product are also included on the distribution CDs for ease of use of the ESI data. 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: 200512
    Metadata_Review_Date: 200512
    Metadata_Contact:
        Contact_Information:
            Contact_Person_Primary:
                Contact_Person: Jill Petersen
                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: Jill.Petersen@noaa.gov
    Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
    Metadata_Standard_Version: FGDC-STD-001-1998

Generated by mp version 2.8.21 on Thu Dec 08 11:55:04 2005

Virginia ESI: BIRDS (Bird Polygons)

Metadata also available as - [Parseable text] - [SGML]

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:
                National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
            Publication_Date: 200512
            Title: Virginia ESI: BIRDS (Bird Polygons)
            Edition: 2
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Virginia
            Publication_Information:
                Publication_Place: Seattle, Washington
                Publisher:
                National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.
            Other_Citation_Details:
                Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
    Description:
        Abstract:
            This data set contains sensitive biological resource data for wading birds, shorebirds, waterfowl, raptors, diving birds, pelagic birds, passerine birds, and gulls and terns in Virginia. Vector polygons in this data set represent bird nesting, wintering, migratory staging, and other spatial/temporal 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 Environmental Sensitivity Index (ESI) data for Virginia. 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 (Nest Points) data layer, part of the larger Virginia 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:* 1991
>>> *Ending_Date:* 2004
>> *Currentness_Reference:*
>> The biological data were compiled during 2004-2005. The currentness dates for the data range from 1991 to 2004 and are documented in the Lineage section.

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

Spatial_Domain:
> *Bounding_Coordinates:*
>> *West_Bounding_Coordinate:* -77.50000
>> *East_Bounding_Coordinate:* -75.12500
>> *North_Bounding_Coordinate:* 38.87500
>> *South_Bounding_Coordinate:* 36.50000

Keywords:
> *Theme:*
>> *Theme_Keyword_Thesaurus:* None
>> *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:* Birds
> *Place:*
>> *Place_Keyword_Thesaurus:* None
>> *Place_Keyword:* Virginia

Access_Constraints: None
Use_Constraints:
> DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Besides the above warning, 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:* datafig.jpg
>
> *Browse_Graphic_File_Description:*
>
>> Depicts the relationships between spatial data layers and attribute data tables for the Virginia 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, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.

Native_Data_Set_Environment:

> The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.3) and SQL SERVER(r) (version 7.0). The hardware configuration is PC's with Windows Operating System (NT4.0/2000).
>
> The Spatial_Data_Organization Information section refers only to the source files in the ARC export format. The following files are included in that data set: birds.e00, esi.e00, fish.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, reptpt.e00, socecon.e00, t_mammal.e00, wetlands.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

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. A final review is made by the GIS manager, where the data are written to CD-ROM and the metadata are written.
>>
>> 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 and 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 (Nest Points) data layer, part of the larger Virginia ESI database, for additional bird information. These data do not necessarily represent all bird occurrences in Virginia. 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; 4, Red-necked grebe, Podiceps grisegena; 5, Horned grebe, Podiceps auritus; 6, Eared grebe, Podiceps nigricollis; 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; 23, Lesser scaup, Aythya affinis; 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; 42, Bonaparte's gull, Larus philadelphia; 45, Common tern, Sterna hirundo; 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; 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; 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; 107, Peregrine falcon, Falco peregrinus; 118, Brown pelican, Pelecanus occidentalis; 120, Yellow-crowned night-heron, Nyctanassa violacea; 124, Redhead, Aythya americana; 125, Clapper rail, Rallus longirostris; 133, Black skimmer, Rynchops niger; 134, Gull-billed tern, Sterna nilotica; 135, Sandwich tern, Sterna sandvicensis; 136, Caspian tern, Sterna caspia; 137, Royal tern, Sterna maxima; 138, Forster's tern, Sterna forsteri; 142, Black-necked stilt, Himantopus mexicanus; 148, Ruddy duck, Oxyura jamaicensis; 150, Black rail, Laterallus jamaicensis; 152, American oystercatcher, Haematopus palliatus; 153, Piping plover, Charadrius melodus; 154, Wilson's plover, Charadrius wilsonia; 155, Willet, Catoptrophorus semipalmatus; 156, Semipalmated sandpiper, Calidris pusilla; 162, Gadwall, Anas strepera; 167, Northern gannet, Morus bassanus; 169, American wigeon, Anas americana; 178, Least bittern, Ixobrychus exilis; 179, Pied-billed grebe, Podilymbus podiceps; 180,

Ring-necked duck, Aythya collaris; 181, Northern harrier, Circus cyaneus; 182, American kestrel, Falco sparverius; 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, Anas discors; 191, Wood duck, Aix sponsa; 192, Common moorhen, Gallinula chloropus; 195, American woodcock, Scolopax minor; 197, Black scoter, Melanitta nigra; 213, Stilt sandpiper, Calidris himantopus; 217, Mute swan, Cygnus olor; 218, Red-shouldered hawk, Buteo lineatus; 219, Sharp-shinned hawk, Accipiter striatus; 220, Merlin, Falco columbarius; 224, Sedge wren, Cistothorus platensis; 225, Marsh wren, Cistothorus palustris; 229, Swamp sparrow, Melospiza georgiana; 230, Red-tailed hawk, Buteo jamaicensis; 231, Broad-winged hawk, Buteo platypterus; 238, White-rumped sandpiper, Calidris fuscicollis; 271, Rails, n/a; 278, Saltmarsh sharp-tailed sparrow, Ammodramus caudacutus; 299, Scaup, Aythya spp.; 301, Mergansers, n/a; 302, Scoters, Melanitta spp.; 393, Lesser black-backed gull, Larus fuscus; 462, Loons, Gavia spp.; 535, Striated heron, Butorides striatus; 736, Henslow's sparrow, Ammodramus henslowii; 1001, Gulls, n/a; 1002, Shorebirds, n/a; 1004, Wading birds, n/a; 1005, Raptors, n/a; 1008, Terns, n/a; 1013, Dabbling ducks, n/a; 1015, Egrets, n/a; 1016, Herons, n/a; 1019, Sea ducks, n/a; 1027, Swans, Cygnus spp.; 1032, Bitterns, 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. Most of the spatial components of the biological data layers are 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 1:24,000. 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. See the Lineage and Process_Description sections for more information on the original data source and how these data were integrated or manipulated to create the final data set. 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.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator:

BOETTCHER, R. (VIRGINIA DEPARTMENT OF GAME AND INLAND FISHERIES [VDGIF], PAINTER)

Publication_Date: 2004

Title: DISTRIBUTION OF WILDLIFE ALONG THE EASTERN SHORE

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: 2004

Source_Currentness_Reference: DATE OF COMMUNICATION

Source_Citation_Abbreviation: NONE

Source_Contribution: BIRDS INFORMATION

Source_Information:
    Source_Citation:
        Citation_Information:
            Originator:
                COLLEGE OF WILLIAM & MARY CENTER FOR CONSERVATION BIOLOGY (CCB), VIRGINIA DEPARTMENT OF GAME AND INLAND FISHERIES (VDGIF), THE NATURE CONSERVANCY (TNC)
            Publication_Date: 2003
            Title: ANNUAL AMERICAN OYSTERCATCHER BREEDING SURVEY
            Geospatial_Data_Presentation_Form: DIGITAL TABLE
            Other_Citation_Details: UNPUBLISHED
    Type_of_Source_Media: EMAIL
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 2003
        Source_Currentness_Reference: DATE OF SURVEY
    Source_Citation_Abbreviation: NONE
    Source_Contribution: BIRDS INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: COSTANZO, G. & BIDROWSKI, T. (VDGIF)
            Publication_Date: 2004
            Title: WATERFOWL DISTRIBUTION AND SEASONALITY
            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: 2004
        Source_Currentness_Reference: DATE OF COMMUNICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: BIRDS INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator:
                DENMON, P. (U.S. FISH AND WILDLIFE SERVICE [USFWS], CAPE CHARLES)
            Publication_Date: 2004
            Title: SPECIES DISTRIBUTION AT FISHERMANS ISLAND NWR
            Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
            Other_Citation_Details: UNPUBLISHED
    Type_of_Source_Media: PERSONAL COMMUNICATION
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        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 2004

     Source_Currentness_Reference: DATE OF COMMUNICATION
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    Source_Contribution: BIRDS INFORMATION
  Source_Information:
    Source_Citation:
     Citation_Information:
      Originator: EASTERN VIRGINIA RIVERS NWR
      Publication_Date: 2004
      Title: WILDLIFE AT PLUM TREE ISLAND NWR
      Geospatial_Data_Presentation_Form: HARDCOPY TEXT
      Other_Citation_Details: UNPUBLISHED
    Type_of_Source_Media: PAPER
    Source_Time_Period_of_Content:
     Time_Period_Information:
      Single_Date/Time:
       Calendar_Date: 2004
     Source_Currentness_Reference: DATE OF COMMUNICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: BIRDS INFORMATION
  Source_Information:
    Source_Citation:
     Citation_Information:
      Originator:
       FIELD, D. (VIRGINIA DEPARTMENT OF CONSERVATION AND
       RECREATION [DCR], WACHAPREAGUE)
      Publication_Date: 2004
      Title: NATURAL HERITAGE PROGRAM DATA
      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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      Single_Date/Time:
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     Source_Currentness_Reference: DATE OF COMMUNICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: BIRDS INFORMATION
  Source_Information:
    Source_Citation:
     Citation_Information:
      Originator: FORSELL, D.J.
      Publication_Date: 2004
      Title:
       DRAFT SPECIAL REPORT ON THE DIST. & ABUNDANCE OF
       WINTERING SEADUCKS & WATERBIRDS
      Geospatial_Data_Presentation_Form: HARDCOPY MAP
      Other_Citation_Details: U.S. FWS, CHESAPEAKE BAY FIELD OFFICE,
     ANNAPOLIS, MD. 10 PP.
    Type_of_Source_Media: EMAIL
    Source_Time_Period_of_Content:
     Time_Period_Information:

Range_of_Dates/Times:
    Beginning_Date: 2001
    Ending_Date: 2003
Source_Currentness_Reference: DATE OF SURVEY
Source_Citation_Abbreviation: NONE
Source_Contribution: BIRDS INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: GALLEGOS, J. (USFWS, VA BEACH)
      Publication_Date: 2004
      Title: BACK BAY NATIONAL WILDLIFE REFUGE SPECIES DISTRIBUTION
      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: 2004
    Source_Currentness_Reference: DATE OF COMMUNICATION
  Source_Citation_Abbreviation: NONE
  Source_Contribution: BIRDS INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: MCCAULEY, J. (USFWS, WARSAW, VA)
      Publication_Date: 2004
      Title:
        BIRD AND INVERT SEASONALITY AND DISTRIBUTION IN EASTERN VA RIVERS NWR COMPLEX
      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: 2004
    Source_Currentness_Reference: DATE OF COMMUNICATION
  Source_Citation_Abbreviation: NONE
  Source_Contribution: BIRDS INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: Manomet Center
      Publication_Date: 2004
      Title:
        BARRIER ISLANDS WESTERN HEMISPHERE SHOREBIRD RESERVE NETWORK (WHSRN) SITE DESCRIPTION
      Geospatial_Data_Presentation_Form: HARDCOPY TEXT
      Other_Citation_Details:

<http://www.manomet.org/WHSRN/viewsite.php?id=23>

Type_of_Source_Media: ONLINE
Source_Time_Period_of_Content:
    Time_Period_Information:
        Single_Date/Time:
            Calendar_Date: 2004
    Source_Currentness_Reference: DATE OF PUBLICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: BIRDS INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: T. PENN, USFWS, CHINCOTEAGUE ISLAND
            Publication_Date: 2004
            Title: DISTRIBUTION OF CHINCOTEAGUE NATIONAL WILDLIFE REFUGE SPECIES
            Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
            Other_Citation_Details: UNPUBLISHED
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Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: TRUITT, B.
            Publication_Date: 2004
            Title: SHOREBIRD SEASONALITY
            Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
            Other_Citation_Details: UNPUBLISHED
    Type_of_Source_Media: EMAIL
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            Single_Date/Time:
                Calendar_Date: 2004
        Source_Currentness_Reference: DATE OF COMMUNICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: BIRDS INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: TRUITT, B., R. BOETTCHER, A. WILKE
            Publication_Date: 2004
            Title:
                2003 WINTER AMERICAN OYSTERCATCHER ROOST SURVEY: SEASIDE-EASTERN SHORE-NOV.12-18
            Geospatial_Data_Presentation_Form: DIGITAL TABLE

Other_Citation_Details: UNPUBLISHED
Type_of_Source_Media: EMAIL
Source_Time_Period_of_Content:
    Time_Period_Information:
        Single_Date/Time:
            Calendar_Date: 2003
    Source_Currentness_Reference: DATE OF SURVEY
Source_Citation_Abbreviation: NONE
Source_Contribution: BIRDS INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: USFWS, ANNAPOLIS, MD
            Publication_Date: 1991
            Title: CHESAPEAKE BAY BALD EAGLE FACT SHEET
            Geospatial_Data_Presentation_Form: HARDCOPY TEXT
            Other_Citation_Details: USFWS, APRIL 1991
    Type_of_Source_Media: PAPER
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 1991
        Source_Currentness_Reference: DATE OF PUBLICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: BIRDS INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: USFWS, CAPE CHARLES, VA
            Publication_Date: 1992
            Title:
                BIRDS: EASTERN SHORE OF VIRGINIA AND FISHERMAN
                ISLAND NATIONAL WILDLIFE REFUGES
            Geospatial_Data_Presentation_Form: HARDCOPY TEXT
            Other_Citation_Details:
                DEPARTMENT OF THE INTERIOR, U.S. FISH AND WILDLIFE
                SERVICE, BROCHURE
    Type_of_Source_Media: PAPER
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 1992
        Source_Currentness_Reference: DATE OF PUBLICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: BIRDS INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: USFWS, CHINCOTEAGUE ISLAND, VA
            Publication_Date: 1999
            Title: USFWS CHINCOTEAGUE NATIONAL WILDLIFE REFUGE BIRDS

Geospatial_Data_Presentation_Form: HARDCOPY TEXT

Other_Citation_Details: USFWS, CHINCOTEAGUE ISLAND, VA, 10 PP.

Type_of_Source_Media: PAPER

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1999

Source_Currentness_Reference: DATE OF PUBLICATION

Source_Citation_Abbreviation: NONE

Source_Contribution: BIRDS INFORMATION

Source_Information:

Source_Citation:

Citation_Information:

Originator: USFWS, MIGRATORY BIRD MANAGEMENT

Publication_Date: 2004

Title: MID-WINTER WATERFOWL SURVEY: 2001-2003

Geospatial_Data_Presentation_Form: DIGITAL VECTOR DATA

Other_Citation_Details:
<http://birddata.fws.gov/databases/mwi/mwidb.html>

Type_of_Source_Media: ONLINE

Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 2001

Ending_Date: 2003

Source_Currentness_Reference: DATE OF SURVEY

Source_Citation_Abbreviation: NONE

Source_Contribution: BIRDS INFORMATION

Source_Information:

Source_Citation:

Citation_Information:

Originator: USFWS, VIRGINIA BEACH, VA

Publication_Date: 2003

Title: BIRDS: BACK BAY NATIONAL WILDLIFE REFUGE

Geospatial_Data_Presentation_Form: HARDCOPY TEXT

Other_Citation_Details:

DEPARTMENT OF THE INTERIOR, U.S. FISH AND WILDLIFE
SERVICE, BROCHURE

Type_of_Source_Media: PAPER

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 2003

Source_Currentness_Reference: DATE OF PUBLICATION

Source_Citation_Abbreviation: NONE

Source_Contribution: BIRDS INFORMATION

Source_Information:

Source_Citation:

Citation_Information:

Originator: VA DEPT. OF GAME & INLAND FISHERIES

Publication_Date: 2003

Title: VIRGINIA PLOVER SURVEY 2001-2003
Geospatial_Data_Presentation_Form: DIGITAL TABLE
Other_Citation_Details: UNPUBLISHED
Type_of_Source_Media: EMAIL
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date: 2001
Ending_Date: 2003
Source_Currentness_Reference: DATE OF SURVEY
Source_Citation_Abbreviation: NONE
Source_Contribution: BIRDS INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: VA NATURAL HERITAGE PROGRAM
Publication_Date: 2004
Title: WRECK ISLAND BIRD COLONIES 2003
Geospatial_Data_Presentation_Form: HARDCOPY MAP
Other_Citation_Details: UNPUBLISHED
Source_Scale_Denominator: 41,292
Type_of_Source_Media: PAPER
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 2003
Source_Currentness_Reference: DATE OF SURVEY
Source_Citation_Abbreviation: NONE
Source_Contribution: BIRDS INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: VDGIF-FISH & WILDLIFE INFO SERVICES
Publication_Date: 2000
Title: EAGLE CONCENTRATION ZONES - JAMES RIVER,
RAPPAHANNOCK RIVER
Geospatial_Data_Presentation_Form: HARDCOPY MAP
Other_Citation_Details: VDGIF - FISH & WILDLIFE INFORMATION
SERVICES
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: NONE
Source_Contribution: BIRDS INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: WILKE, A. (COLLEGE OF WILLIAM AND MARY CCB)

Publication_Date: 2003
Title:
BREEDING SURVEYS, BANDING, & PRODUCTIVITY OF
AMOY'S ON THE BARRIER ISLANDS OF VA
Geospatial_Data_Presentation_Form: DIGITAL MAP
Other_Citation_Details: UNPUBLISHED
Type_of_Source_Media: EMAIL
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 2003
Source_Currentness_Reference: DATE OF SURVEY
Source_Citation_Abbreviation: NONE
Source_Contribution: BIRDS INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: WILKE, A. (COLLEGE OF WILLIAM AND MARY CCB)
Publication_Date: 2004
Title: AMERICAN OYSTERCATCHER SEASONALITY
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: 2004
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: BIRDS INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: WITT, J. (WOODBRIDGE, VA)
Publication_Date: 2004
Title:
SPECIES DISTRIBUTION AND SEASONALITY AT THE
POTOMAC RIVER NWR COMPLEX
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: 2004
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: BIRDS INFORMATION
Process_Step:
Process_Description:
Three main sources of data were used to depict bird distribution and seasonality for

this data layer: (1) personal interviews with resource experts from U.S. Fish and Wildlife Service (USFWS), Virginia Department of Game and Inland Fisheries (VDGIF), College of William and Mary Center for Conservation Biology (CCB), and The Nature Conservancy (TNC); (2) numerous published and unpublished documents and maps (dates range from 1991-2004); and (3) survey/location data in digital format (dates range from 2000-2004).

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 a biology data layer: (1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:24,000 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 compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. 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: 200505
Process_Contact:
    Contact_Information:
        Contact_Organization_Primary:
            Contact_Organization: NOAA, Office of Response and Restoration
            Contact_Person: Jill Petersen
        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: Jill.Petersen@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: 8869
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Area point
            Point_and_Vector_Object_Count: 8869
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Complete chain
            Point_and_Vector_Object_Count: 23942
        SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 1601837
SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 18096

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 1927
Ellipsoid_Name: Clark 1866
Semi-major_Axis: 6378206.400000
Denominator_of_Flattening_Ratio: 294.978698

Entity_and_Attribute_Information:
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 Virginia atlas, the number is 55), 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 below 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 described below 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 below, 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 below.

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, wintering, migratory staging, and other spatial/temporal concentration areas. 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:* Research Planning, Inc.
> *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 (55), 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:* 550100002
>>>> *Range_Domain_Maximum:* 550129294
> *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 polygons and do not contain information.
>> *Attribute_Definition_Source:* NOAA
>> *Attribute_Domain_Values:*
>>> *Range_Domain:*
>>>> *Range_Domain_Minimum:* 55000001
>>>> *Range_Domain_Maximum:* 55000721
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. 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: Research Planning, Inc.

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: 55000001

Range_Domain_Maximum: 55000847

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 (55), 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: 550100002

Range_Domain_Maximum: 553600012

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: Research Planning, Inc.

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: 055000001

Range_Domain_Maximum: 055000847

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: Research Planning, Inc.

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 site or a term that describes relative abundance of birds at a particular site. The field may contain counts of individuals (e.g., XX ADULTS), and in some cases, the counts are generalized into ranges (e.g., XX-XXX BIRDS). In cases where no quantitative count data were available, the field may contain descriptive terms, such as "HIGH", "LOW-MODERATE", ">100", or "<10 NESTS". If no concentration information was available from any source, the field is populated with "-". Counts and descriptive terms were derived from multiple surveys and conversations with resource experts (see the Lineage section) and may range in date.

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: BIRD
Enumerated_Domain_Value_Definition: Birds
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: FISH
Enumerated_Domain_Value_Definition: Fish
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: HABITAT
Enumerated_Domain_Value_Definition: Habitats and Plants
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: INVERT
Enumerated_Domain_Value_Definition: Invertebrates
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: M_MAMMAL
Enumerated_Domain_Value_Definition: Marine Mammals
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: REPTILE
Enumerated_Domain_Value_Definition: Reptiles and Amphibians
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: T_MAMMAL
Enumerated_Domain_Value_Definition: Terrestrial Mammals
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.
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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: BIRD
            Enumerated_Domain_Value_Definition: Birds
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: FISH
            Enumerated_Domain_Value_Definition: Fish
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: HABITAT
            Enumerated_Domain_Value_Definition: Habitats and Plants
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: INVERT
            Enumerated_Domain_Value_Definition: Invertebrates
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: M_MAMMAL
            Enumerated_Domain_Value_Definition: Marine Mammals
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: REPTILE
            Enumerated_Domain_Value_Definition: Reptiles and Amphibians
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: T_MAMMAL
            Enumerated_Domain_Value_Definition: Terrestrial Mammals
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
    Attribute_Label: SUBELEMENT
    Attribute_Definition: Element subgroup delineating a logical grouping of species.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: bivalve
            Enumerated_Domain_Value_Definition: Bivalve
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: crab

     Enumerated_Domain_Value_Definition: Crab
     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
     Enumerated_Domain_Value: diadromous
     Enumerated_Domain_Value_Definition: Diadromous fish
     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
     Enumerated_Domain_Value: diving
     Enumerated_Domain_Value_Definition: Diving bird
     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
     Enumerated_Domain_Value: dolphin
     Enumerated_Domain_Value_Definition: Dolphin
     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
     Enumerated_Domain_Value: e_nursery
     Enumerated_Domain_Value_Definition: Estuarine nursery fish
     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
     Enumerated_Domain_Value: e_resident
     Enumerated_Domain_Value_Definition: Estuarine resident
     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
     Enumerated_Domain_Value: freshwater
     Enumerated_Domain_Value_Definition: Freshwater fish
     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
     Enumerated_Domain_Value: gastropod
     Enumerated_Domain_Value_Definition: Gastropod
     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
     Enumerated_Domain_Value: gull_tern
     Enumerated_Domain_Value_Definition: Gull or tern
     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
     Enumerated_Domain_Value: insect
     Enumerated_Domain_Value_Definition: Insect
     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
     Enumerated_Domain_Value: m_benthic
     Enumerated_Domain_Value_Definition: Marine benthic fish

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: m_pelagic
  Enumerated_Domain_Value_Definition: Marine pelagic fish
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: passerine
  Enumerated_Domain_Value_Definition: Passerine bird
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: pelagic
  Enumerated_Domain_Value_Definition: Pelagic bird
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: pinniped
  Enumerated_Domain_Value_Definition: Pinniped
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: plant
  Enumerated_Domain_Value_Definition: Plant
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: raptor
  Enumerated_Domain_Value_Definition: Raptor
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: sav
  Enumerated_Domain_Value_Definition: Submerged aquatic vegetation
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: shorebird
  Enumerated_Domain_Value_Definition: Shorebird
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: sm_mammal
  Enumerated_Domain_Value_Definition: Small mammal
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: turtle
  Enumerated_Domain_Value_Definition: Turtle
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: upland
        Enumerated_Domain_Value_Definition: Upland habitat
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: wading
        Enumerated_Domain_Value_Definition: Wading bird
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: waterfowl
        Enumerated_Domain_Value_Definition: Waterfowl
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: wetland
        Enumerated_Domain_Value_Definition: Wetland
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: whale
        Enumerated_Domain_Value_Definition: Whale
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
    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: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: 0
            Enumerated_Domain_Value_Definition: Date unspecified
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
    Attribute:
        Attribute_Label: ELEMENT
        Attribute_Definition: Major categories of biological data.
        Attribute_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: BIRD
                Enumerated_Domain_Value_Definition: Birds
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: FISH
                Enumerated_Domain_Value_Definition: Fish
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: HABITAT
                Enumerated_Domain_Value_Definition: Habitats and Plants
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: INVERT
                Enumerated_Domain_Value_Definition: Invertebrates
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: M_MAMMAL
                Enumerated_Domain_Value_Definition: Marine Mammals
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:

Enumerated_Domain_Value: REPTILE
Enumerated_Domain_Value_Definition: Reptiles and Amphibians
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: T_MAMMAL
Enumerated_Domain_Value_Definition: Terrestrial Mammals
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum: 1
Range_Domain_Maximum: N
Attribute:
Attribute_Label: JAN
Attribute_Definition: January
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: X
Enumerated_Domain_Value_Definition: Present in January
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: FEB
Attribute_Definition: February
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: X
Enumerated_Domain_Value_Definition: Present in February
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: MAR
Attribute_Definition: March
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:
> *Enumerated_Domain_Value:* X
> *Enumerated_Domain_Value_Definition:* Present in March
> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:
Attribute_Label: APR
Attribute_Definition: April
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
> *Enumerated_Domain:*
> > *Enumerated_Domain_Value:* X
> > *Enumerated_Domain_Value_Definition:* Present in April
> > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:
Attribute_Label: MAY
Attribute_Definition: May
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
> *Enumerated_Domain:*
> > *Enumerated_Domain_Value:* X
> > *Enumerated_Domain_Value_Definition:* Present in May
> > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:
Attribute_Label: JUN
Attribute_Definition: June
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
> *Enumerated_Domain:*
> > *Enumerated_Domain_Value:* X
> > *Enumerated_Domain_Value_Definition:* Present in June
> > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:
Attribute_Label: JUL
Attribute_Definition: July
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
> *Enumerated_Domain:*
> > *Enumerated_Domain_Value:* X
> > *Enumerated_Domain_Value_Definition:* Present in July
> > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:
Attribute_Label: AUG
Attribute_Definition: August
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
> *Enumerated_Domain:*
> > *Enumerated_Domain_Value:* X
> > *Enumerated_Domain_Value_Definition:* Present in August
> > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:
Attribute_Label: SEP

Attribute_Definition: September
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: X
        Enumerated_Domain_Value_Definition: Present in September
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
Attribute_Label: OCT
Attribute_Definition: October
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: X
        Enumerated_Domain_Value_Definition: Present in October
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
Attribute_Label: NOV
Attribute_Definition: November
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: X
        Enumerated_Domain_Value_Definition: Present in November
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
Attribute_Label: DEC
Attribute_Definition: December
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: X
        Enumerated_Domain_Value_Definition: Present in December
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.
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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

    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: Research Planning, Inc.

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: Research Planning, Inc.

    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 elements.

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: Y

            Enumerated_Domain_Value_Definition: Life-history stage or activity present

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    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: Research Planning, Inc.
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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: Y
        Enumerated_Domain_Value_Definition: Life-history stage or activity present
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: Y
        Enumerated_Domain_Value_Definition: Life-history stage or activity present
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.
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: Research Planning, Inc.

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: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: Y
            Enumerated_Domain_Value_Definition: Life-history stage or activity present
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.

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: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: Y
            Enumerated_Domain_Value_Definition: Life-history stage or activity present
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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; and SOURCE_ID in the ESI and HYDRO data layers.

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute:

Attribute_Label: TITLE

Attribute_Definition: Title of source material or data.

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.
    Attribute_Domain_Values:
        Unrepresentable_Domain: Acceptable values change from atlas to atlas.
Attribute:
    Attribute_Label: PUBLICATION
    Attribute_Definition: Additional citation information.
    Attribute_Definition_Source: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.
    Attribute_Domain_Values:
        Unrepresentable_Domain: Acceptable values change from atlas to atlas.
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: Research Planning, Inc.
    Attribute:
        Attribute_Label: ELEMENT
        Attribute_Definition: Major categories of biological data.
        Attribute_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: BIRD
                Enumerated_Domain_Value_Definition: Birds
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: FISH
                Enumerated_Domain_Value_Definition: Fish
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:

Enumerated_Domain:
    Enumerated_Domain_Value: HABITAT
    Enumerated_Domain_Value_Definition: Habitats and Plants
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: INVERT
        Enumerated_Domain_Value_Definition: Invertebrates
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: M_MAMMAL
        Enumerated_Domain_Value_Definition: Marine Mammals
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: REPTILE
        Enumerated_Domain_Value_Definition: Reptiles and Amphibians
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: T_MAMMAL
        Enumerated_Domain_Value_Definition: Terrestrial Mammals
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Distribution_Information:
    Distributor:
        Contact_Information:
            Contact_Person_Primary:
                Contact_Person: John Kaperick
                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) 526-6400
            Contact_Facsimile_Telephone: (206) 526-6329
    Resource_Description: ESI Atlas for Virginia
    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, and will offer a replacement copy of the product when the product is determined unreadable by computer-input peripherals, or when the physical medium is delivered in damaged condition.
    Custom_Order_Process:
        Contact NOAA for distribution options (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, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI_Viewer product are also included on the distribution CDs for ease of use of the ESI data. 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: 200512
    Metadata_Review_Date: 200512
    Metadata_Contact:
        Contact_Information:
            Contact_Person_Primary:
                Contact_Person: Jill Petersen
                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: Jill.Petersen@noaa.gov

Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998

Generated by mp version 2.8.21 on Wed Dec 07 15:50:26 2005

Virginia ESI: NESTS (Nest Points)

Metadata also available as - [Parseable text] - [SGML]

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:
                National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
            Publication_Date: 200512
            Title: Virginia ESI: NESTS (Nest Points)
            Edition: 2
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Virginia
            Publication_Information:
                Publication_Place: Seattle, Washington
                Publisher:
                National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.
            Other_Citation_Details:
                Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
    Description:
        Abstract:
            This data set contains sensitive biological resource data for wading birds, shorebirds, raptors, diving birds, passerine birds, and gulls and terns in Virginia. Vector points in this data set represent bird nesting locations. 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 Environmental Sensitivity Index (ESI) data for Virginia. 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 (Bird Polygons) data layer, part of the larger Virginia 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: 1977

Ending_Date: 2004

Currentness_Reference:

The biological data were compiled during 2004-2005. The currentness dates for the data range from 1977 to 2004 and are documented in the Lineage section.

Status:

Progress: Complete

Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -77.50000

East_Bounding_Coordinate: -75.12500

North_Bounding_Coordinate: 38.87500

South_Bounding_Coordinate: 36.50000

Keywords:

Theme:

Theme_Keyword_Thesaurus: None

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

Place:

Place_Keyword_Thesaurus: None

Place_Keyword: Virginia

Access_Constraints: None

Use_Constraints:

DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Besides the above warning, 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: datafig.jpg

    Browse_Graphic_File_Description:

        Depicts the relationships between spatial data layers and attribute data tables for the Virginia 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, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.

Native_Data_Set_Environment:

    The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.3) and SQL SERVER(r) (version 7.0). The hardware configuration is PC's with Windows Operating System (NT4.0/2000).

    The Spatial_Data_Organization Information section refers only to the source files in the ARC export format. The following files are included in that data set: birds.e00, esi.e00, fish.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, reptpt.e00, socecon.e00, t_mammal.e00, wetlands.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

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. A final review is made by the GIS manager, where the data are written to CD-ROM and the metadata are written.

        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 bird nesting locations. See also the BIRDS (Bird Polygons) data layer, part of the larger Virginia ESI database, for additional bird information. These data do not necessarily represent all nest occurrences in Virginia. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 8, Double-crested cormorant, Phalacrocorax auritus; 38, Herring gull, Larus argentatus; 45, Common tern, Sterna hirundo; 54, Great blue heron, Ardea herodias; 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; 98, Laughing gull, Larus atricilla; 107, Peregrine falcon, Falco peregrinus; 115, White ibis, Eudocimus albus; 118, Brown pelican, Pelecanus occidentalis; 120, Yellow-crowned night-heron, Nyctanassa violacea; 133, Black skimmer, Rynchops niger; 134, Gull-billed tern, Sterna nilotica; 135, Sandwich tern, Sterna sandvicensis; 136, Caspian tern, Sterna caspia; 137, Royal tern, Sterna maxima; 138, Forster's tern, Sterna forsteri; 142, Black-necked stilt, Himantopus mexicanus; 152, American oystercatcher, Haematopus palliatus; 735, Brown-headed cowbird, Molothrus ater.

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. Most of the spatial components of the biological data layers are 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 1:24,000. 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. See the Lineage and Process_Description sections for more information on the original data source and how these data were integrated or manipulated to create the final data set. 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.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator:

BOETTCHER, R. (VIRGINIA DEPARTMENT OF GAME AND INLAND FISHERIES [VDGIF], PAINTER)

Publication_Date: 2004

Title: DISTRIBUTION OF WILDLIFE ALONG THE EASTERN SHORE

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: 2004
    Source_Currentness_Reference: DATE OF COMMUNICATION
   Source_Citation_Abbreviation: NONE
   Source_Contribution: NESTS INFORMATION
Source_Information:
  Source_Citation:
   Citation_Information:
    Originator:
     DENMON, P. (U.S. FISH AND WILDLIFE SERVICE [USFWS],
     CAPE CHARLES)
    Publication_Date: 2004
    Title: SPECIES DISTRIBUTION AT FISHERMANS ISLAND NWR
    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: 2004
    Source_Currentness_Reference: DATE OF COMMUNICATION
   Source_Citation_Abbreviation: NONE
   Source_Contribution: NESTS INFORMATION
Source_Information:
  Source_Citation:
   Citation_Information:
    Originator:
     FIELD, D. (VIRGINIA DEPARTMENT OF CONSERVATION AND
     RECREATION [DCR], WACHAPREAGUE)
    Publication_Date: 2004
    Title: NATURAL HERITAGE PROGRAM DATA
    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: 2004
    Source_Currentness_Reference: DATE OF COMMUNICATION
   Source_Citation_Abbreviation: NONE
   Source_Contribution: NESTS INFORMATION
Source_Information:
  Source_Citation:
   Citation_Information:
    Originator: T. PENN, USFWS, CHINCOTEAGUE ISLAND
    Publication_Date: 2004
    Title: DISTRIBUTION OF CHINCOTEAGUE NATIONAL WILDLIFE

REFUGE SPECIES
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: 2004
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: NESTS INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: THE NATURE CONSERVANCY
Publication_Date: 1998
Title: 1998 SEASIDE LAGOON SURVEY RESULTS
Geospatial_Data_Presentation_Form: DIGITAL VECTOR DATA
Other_Citation_Details:
THE NATURE CONSERVANCY, CHARLOTTESVILLE, VA
(CONTACT: JOHN PORTER, BARRY TRUITT)
Type_of_Source_Media: EMAIL
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 1998
Source_Currentness_Reference: DATE OF SURVEY
Source_Citation_Abbreviation: NONE
Source_Contribution: NESTS INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator:
THE NATURE CONSERVANCY (TNC), COLLEGE OF WILLIAM
& MARY CENTER FOR CONSERVATION BIOLOGY (CCB),
VIRGINIA DEPARTMENT OF GAME AND INLAND FISHERIES
(VDGIF)
Publication_Date: 2003
Title: AMERICAN OYSTERCATCHER WINTER ROOST SURVEYS
Geospatial_Data_Presentation_Form: DIGITAL TABLE
Other_Citation_Details: UNPUBLISHED
Type_of_Source_Media: EMAIL
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 2003
Source_Currentness_Reference: DATE OF SURVEY
Source_Citation_Abbreviation: NONE
Source_Contribution: NESTS INFORMATION
Source_Information:
Source_Citation:

Citation_Information:
        Originator: TRUITT, B.
        Publication_Date: 2004
        Title: SHOREBIRD SEASONALITY
        Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
        Other_Citation_Details: UNPUBLISHED
Type_of_Source_Media: EMAIL
Source_Time_Period_of_Content:
    Time_Period_Information:
        Single_Date/Time:
            Calendar_Date: 2004
    Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: NESTS INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: TRUITT, B., R. BOETTCHER, A. WILKE
            Publication_Date: 2004
            Title:
                2003 WINTER AMERICAN OYSTERCATCHER ROOST SURVEY:
                SEASIDE-EASTERN SHORE-NOV.12-18
            Geospatial_Data_Presentation_Form: DIGITAL TABLE
            Other_Citation_Details: UNPUBLISHED
    Type_of_Source_Media: EMAIL
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 2003
        Source_Currentness_Reference: DATE OF SURVEY
    Source_Citation_Abbreviation: NONE
    Source_Contribution: NESTS INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: USFWS, ANNAPOLIS, MD
            Publication_Date: 1991
            Title: CHESAPEAKE BAY BALD EAGLE FACT SHEET
            Geospatial_Data_Presentation_Form: HARDCOPY TEXT
            Other_Citation_Details: USFWS, APRIL 1991
    Type_of_Source_Media: PAPER
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 1991
        Source_Currentness_Reference: DATE OF PUBLICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: NESTS INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:

Originator: USFWS, CAPE CHARLES, VA
Publication_Date: 1992
Title:
    BIRDS: EASTERN SHORE OF VIRGINIA AND FISHERMAN
    ISLAND NATIONAL WILDLIFE REFUGES
Geospatial_Data_Presentation_Form: HARDCOPY TEXT
Other_Citation_Details:
    DEPARTMENT OF THE INTERIOR, U.S. FISH AND WILDLIFE
    SERVICE, BROCHURE
Type_of_Source_Media: PAPER
Source_Time_Period_of_Content:
    Time_Period_Information:
        Single_Date/Time:
            Calendar_Date: 1992
    Source_Currentness_Reference: DATE OF PUBLICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: NESTS INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: USFWS, CHINCOTEAGUE ISLAND, VA
            Publication_Date: 1999
            Title: USFWS CHINCOTEAGUE NATIONAL WILDLIFE REFUGE BIRDS
            Geospatial_Data_Presentation_Form: HARDCOPY TEXT
            Other_Citation_Details: USFWS, CHINCOTEAGUE ISLAND, VA, 10 PP.
    Type_of_Source_Media: PAPER
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 1999
        Source_Currentness_Reference: DATE OF PUBLICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: NESTS INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: USFWS, VIRGINIA BEACH, VA
            Publication_Date: 2003
            Title: BIRDS: BACK BAY NATIONAL WILDLIFE REFUGE
            Geospatial_Data_Presentation_Form: HARDCOPY TEXT
            Other_Citation_Details:
                DEPARTMENT OF THE INTERIOR, U.S. FISH AND WILDLIFE
                SERVICE, BROCHURE
    Type_of_Source_Media: PAPER
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 2003
        Source_Currentness_Reference: DATE OF PUBLICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: NESTS INFORMATION

Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: USFWS, VIRGINIA BEACH, VA
            Publication_Date: 2004
            Title: BACK BAY NWR OSPREY NEST LOCATIONS
            Geospatial_Data_Presentation_Form: HARDCOPY TEXT
            Other_Citation_Details: UNPUBLISHED
    Type_of_Source_Media: PAPER
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 2004
        Source_Currentness_Reference: DATE OF PUBLICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: NESTS INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: VA DEPT. OF GAME & INLAND FISHERIES
            Publication_Date: 2003
            Title: COASTAL PEREGRINE FALCON COORDINATES
            Geospatial_Data_Presentation_Form: DIGITAL TABLE
            Other_Citation_Details: UNPUBLISHED
    Type_of_Source_Media: EMAIL
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Range_of_Dates/Times:
                Beginning_Date: 1977
                Ending_Date: 2003
        Source_Currentness_Reference: DATE OF SURVEY
    Source_Citation_Abbreviation: NONE
    Source_Contribution: NESTS INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: VA DEPT. OF GAME & INLAND FISHERIES
            Publication_Date: 2003
            Title: BALD EAGLE NESTS ACTIVE IN 2003
            Geospatial_Data_Presentation_Form: HARDCOPY MAP
            Other_Citation_Details: UNPUBLISHED
    Source_Scale_Denominator: 24,000
    Type_of_Source_Media: PAPER
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 2003
        Source_Currentness_Reference: DATE OF SURVEY
    Source_Citation_Abbreviation: NONE
    Source_Contribution: NESTS INFORMATION
Source_Information:

Source_Citation:
> *Citation_Information:*
>> *Originator:* VA NATURAL HERITAGE PROGRAM
>> *Publication_Date:* 2004
>> *Title:* WRECK ISLAND BIRD COLONIES 2003
>> *Geospatial_Data_Presentation_Form:* HARDCOPY MAP
>> *Other_Citation_Details:* UNPUBLISHED

Source_Scale_Denominator: 41,292
Type_of_Source_Media: PAPER
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> *Time_Period_Information:*
>> *Single_Date/Time:*
>>> *Calendar_Date:* 2003
> *Source_Currentness_Reference:* DATE OF SURVEY
Source_Citation_Abbreviation: NONE
Source_Contribution: NESTS INFORMATION

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> *Source_Citation:*
>> *Citation_Information:*
>>> *Originator:* WATTS, B.D. & B.J. PAXTON
>>> *Publication_Date:* 2004
>>> *Title:*
>>>> DIGITAL ATLAS OF COLONIAL WATERBIRDS IN COASTAL
>>>> VIRGINIA: 2003 BREEDING SEASON
>>> *Geospatial_Data_Presentation_Form:* DIGITAL VECTOR DATA
>>> *Other_Citation_Details:*
>>>> CCBTR-04-05. CENTER FOR CONSERVATION BIOLOGY,
>>>> COLLEGE OF WILLIAM AND MARY, WILLIAMSBURG, VA.

> *Type_of_Source_Media:* CD-ROM
> *Source_Time_Period_of_Content:*
>> *Time_Period_Information:*
>>> *Single_Date/Time:*
>>>> *Calendar_Date:* 2003
>> *Source_Currentness_Reference:* DATE OF SURVEY
> *Source_Citation_Abbreviation:* NONE
> *Source_Contribution:* NESTS INFORMATION

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> *Source_Citation:*
>> *Citation_Information:*
>>> *Originator:* WILKE, A. (COLLEGE OF WILLIAM AND MARY CCB)
>>> *Publication_Date:* 2003
>>> *Title:*
>>>> BREEDING SURVEYS, BANDING, & PRODUCTIVITY OF
>>>> AMOY'S ON THE BARRIER ISLANDS OF VA
>>> *Geospatial_Data_Presentation_Form:* DIGITAL MAP
>>> *Other_Citation_Details:* UNPUBLISHED

> *Type_of_Source_Media:* EMAIL
> *Source_Time_Period_of_Content:*
>> *Time_Period_Information:*
>>> *Single_Date/Time:*
>>>> *Calendar_Date:* 2003

Source_Currentness_Reference: DATE OF SURVEY
Source_Citation_Abbreviation: NONE
Source_Contribution: NESTS INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: WILKE, A. (COLLEGE OF WILLIAM AND MARY CCB)
            Publication_Date: 2004
            Title: AMERICAN OYSTERCATCHER SEASONALITY
            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: 2004
    Source_Currentness_Reference: DATE OF COMMUNICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: NESTS INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: WITT, J. (WOODBRIDGE, VA)
            Publication_Date: 2004
            Title:
                SPECIES DISTRIBUTION AND SEASONALITY AT THE
                POTOMAC RIVER NWR COMPLEX
            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: 2004
    Source_Currentness_Reference: DATE OF COMMUNICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: NESTS INFORMATION
Process_Step:
    Process_Description:

        Three main sources of data were used to depict bird distribution and seasonality for this data layer: (1) personal interviews with resource experts from U.S. Fish and Wildlife Service (USFWS), Virginia Department of Game and Inland Fisheries (VDGIF), College of William and Mary Center for Conservation Biology (CCB), and The Nature Conservancy (TNC); (2) published and unpublished documents and maps (dates range from 1992-2004); and (3) survey/location data in digital format (publication dates range from 1998-2004).

        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 a biology data layer: (1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S.

Geological Survey 1:24,000 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 compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. 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.

Process_Date: 200505
Process_Contact:
  Contact_Information:
    Contact_Organization_Primary:
      Contact_Organization: NOAA, Office of Response and Restoration
      Contact_Person: Jill Petersen
    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: Jill.Petersen@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: 632

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 1927
      Ellipsoid_Name: Clark 1866
      Semi-major_Axis: 6378206.400000
      Denominator_of_Flattening_Ratio: 294.978698

Entity_and_Attribute_Information:
  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, 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 Virginia atlas, the number is 55), 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 below 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 described below 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 below, 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 below.

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 bird nesting locations. 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: Research Planning, Inc.
    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 (55), element number (5), and record number.

Attribute_Definition_Source: NOAA
Attribute_Domain_Values:
> *Range_Domain:*
>> *Range_Domain_Minimum:* 550500001
>> *Range_Domain_Maximum:* 550500633

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:* 55000004
>>> *Range_Domain_Maximum:* 55000432

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. 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:* Research Planning, Inc.
> *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:* 55000001
>>>> *Range_Domain_Maximum:* 55000847

> *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 (55), element number (5), 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:* 550100002

Range_Domain_Maximum: 553600012

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: Research Planning, Inc.

    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: 055000001

                Range_Domain_Maximum: 055000847

    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: Research Planning, Inc.

        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 site (e.g., XX ADULTS or XX NESTS). In cases where no quantitative data were available, the field may contain a descriptive term such as "HIGH". If no concentration information was available from any source, the field is populated with "-". Counts were derived from multiple surveys and conversations with resource experts and may range in date from 1998-2004.

        Attribute_Definition_Source: Research Planning, Inc.

        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: Research Planning, Inc.

        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: Research Planning, Inc.
  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: Research Planning, Inc.
  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: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: BIRD
      Enumerated_Domain_Value_Definition: Birds
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: FISH
      Enumerated_Domain_Value_Definition: Fish
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: HABITAT
      Enumerated_Domain_Value_Definition: Habitats and Plants
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: INVERT
      Enumerated_Domain_Value_Definition: Invertebrates
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: M_MAMMAL
      Enumerated_Domain_Value_Definition: Marine Mammals

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: REPTILE
Enumerated_Domain_Value_Definition: Reptiles and Amphibians
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: T_MAMMAL
Enumerated_Domain_Value_Definition: Terrestrial Mammals
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: BIRD
            Enumerated_Domain_Value_Definition: Birds
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: FISH
            Enumerated_Domain_Value_Definition: Fish
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: HABITAT
            Enumerated_Domain_Value_Definition: Habitats and Plants
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: INVERT
            Enumerated_Domain_Value_Definition: Invertebrates
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: M_MAMMAL
            Enumerated_Domain_Value_Definition: Marine Mammals
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:

Enumerated_Domain:
  Enumerated_Domain_Value: REPTILE
  Enumerated_Domain_Value_Definition: Reptiles and Amphibians
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: T_MAMMAL
  Enumerated_Domain_Value_Definition: Terrestrial Mammals
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
 Attribute_Label: SUBELEMENT
 Attribute_Definition: Element subgroup delineating a logical grouping of species.
 Attribute_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: bivalve
   Enumerated_Domain_Value_Definition: Bivalve
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: crab
   Enumerated_Domain_Value_Definition: Crab
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: diadromous
   Enumerated_Domain_Value_Definition: Diadromous fish
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: diving
   Enumerated_Domain_Value_Definition: Diving bird
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: dolphin
   Enumerated_Domain_Value_Definition: Dolphin
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: e_nursery
   Enumerated_Domain_Value_Definition: Estuarine nursery fish
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: e_resident
   Enumerated_Domain_Value_Definition: Estuarine resident
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: freshwater

Enumerated_Domain_Value_Definition: Freshwater fish
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: gastropod
    Enumerated_Domain_Value_Definition: Gastropod
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: gull_tern
    Enumerated_Domain_Value_Definition: Gull or tern
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: insect
    Enumerated_Domain_Value_Definition: Insect
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: m_benthic
    Enumerated_Domain_Value_Definition: Marine benthic fish
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: m_pelagic
    Enumerated_Domain_Value_Definition: Marine pelagic fish
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: passerine
    Enumerated_Domain_Value_Definition: Passerine bird
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: pelagic
    Enumerated_Domain_Value_Definition: Pelagic bird
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: pinniped
    Enumerated_Domain_Value_Definition: Pinniped
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: plant
    Enumerated_Domain_Value_Definition: Plant
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: raptor
    Enumerated_Domain_Value_Definition: Raptor

      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
     Enumerated_Domain:
      Enumerated_Domain_Value: sav
      Enumerated_Domain_Value_Definition: Submerged aquatic vegetation
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
     Enumerated_Domain:
      Enumerated_Domain_Value: shorebird
      Enumerated_Domain_Value_Definition: Shorebird
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
     Enumerated_Domain:
      Enumerated_Domain_Value: sm_mammal
      Enumerated_Domain_Value_Definition: Small mammal
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
     Enumerated_Domain:
      Enumerated_Domain_Value: turtle
      Enumerated_Domain_Value_Definition: Turtle
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
     Enumerated_Domain:
      Enumerated_Domain_Value: upland
      Enumerated_Domain_Value_Definition: Upland habitat
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
     Enumerated_Domain:
      Enumerated_Domain_Value: wading
      Enumerated_Domain_Value_Definition: Wading bird
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
     Enumerated_Domain:
      Enumerated_Domain_Value: waterfowl
      Enumerated_Domain_Value_Definition: Waterfowl
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
     Enumerated_Domain:
      Enumerated_Domain_Value: wetland
      Enumerated_Domain_Value_Definition: Wetland
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
     Enumerated_Domain:
      Enumerated_Domain_Value: whale
      Enumerated_Domain_Value_Definition: Whale
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  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: Research Planning, Inc.
  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: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: 0
      Enumerated_Domain_Value_Definition: Date unspecified
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
  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: Research Planning, Inc.
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: Research Planning, Inc.
  Attribute:
    Attribute_Label: ELEMENT
    Attribute_Definition: Major categories of biological data.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
      Enumerated_Domain:
        Enumerated_Domain_Value: BIRD
        Enumerated_Domain_Value_Definition: Birds
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:

Enumerated_Domain:
      Enumerated_Domain_Value: FISH
      Enumerated_Domain_Value_Definition: Fish
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: HABITAT
      Enumerated_Domain_Value_Definition: Habitats and Plants
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: INVERT
      Enumerated_Domain_Value_Definition: Invertebrates
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: M_MAMMAL
      Enumerated_Domain_Value_Definition: Marine Mammals
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: REPTILE
      Enumerated_Domain_Value_Definition: Reptiles and Amphibians
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: T_MAMMAL
      Enumerated_Domain_Value_Definition: Terrestrial Mammals
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
  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: Research Planning, Inc.
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum: 1
      Range_Domain_Maximum: N
Attribute:
  Attribute_Label: JAN

Attribute_Definition: January
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: X
        Enumerated_Domain_Value_Definition: Present in January
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
    Attribute_Label: FEB
    Attribute_Definition: February
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: X
            Enumerated_Domain_Value_Definition: Present in February
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
    Attribute_Label: MAR
    Attribute_Definition: March
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: X
            Enumerated_Domain_Value_Definition: Present in March
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
    Attribute_Label: APR
    Attribute_Definition: April
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: X
            Enumerated_Domain_Value_Definition: Present in April
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
    Attribute_Label: MAY
    Attribute_Definition: May
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: X
            Enumerated_Domain_Value_Definition: Present in May
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
    Attribute_Label: JUN
    Attribute_Definition: June
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: X
            Enumerated_Domain_Value_Definition: Present in June

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
> *Attribute_Label:* JUL
> *Attribute_Definition:* July
> *Attribute_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
>> *Enumerated_Domain:*
>>> *Enumerated_Domain_Value:* X
>>> *Enumerated_Domain_Value_Definition:* Present in July
>>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:
> *Attribute_Label:* AUG
> *Attribute_Definition:* August
> *Attribute_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
>> *Enumerated_Domain:*
>>> *Enumerated_Domain_Value:* X
>>> *Enumerated_Domain_Value_Definition:* Present in August
>>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:
> *Attribute_Label:* SEP
> *Attribute_Definition:* September
> *Attribute_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
>> *Enumerated_Domain:*
>>> *Enumerated_Domain_Value:* X
>>> *Enumerated_Domain_Value_Definition:* Present in September
>>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:
> *Attribute_Label:* OCT
> *Attribute_Definition:* October
> *Attribute_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
>> *Enumerated_Domain:*
>>> *Enumerated_Domain_Value:* X
>>> *Enumerated_Domain_Value_Definition:* Present in October
>>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:
> *Attribute_Label:* NOV
> *Attribute_Definition:* November
> *Attribute_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
>> *Enumerated_Domain:*
>>> *Enumerated_Domain_Value:* X
>>> *Enumerated_Domain_Value_Definition:* Present in November
>>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:
> *Attribute_Label:* DEC
> *Attribute_Definition:* December
> *Attribute_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*

    Enumerated_Domain:
      Enumerated_Domain_Value: X
      Enumerated_Domain_Value_Definition: Present in December
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  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: Research Planning, Inc.
    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: Research Planning, Inc.
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: Research Planning, Inc.
  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: Research Planning, Inc.
    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: Research Planning, Inc.
  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: Research Planning, Inc.
    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 elements.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Y

Enumerated_Domain_Value_Definition: Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Y

Enumerated_Domain_Value_Definition: Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Y
Enumerated_Domain_Value_Definition: Life-history stage or activity present
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Y
Enumerated_Domain_Value_Definition: Life-history stage or activity present
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Y
Enumerated_Domain_Value_Definition: Life-history stage or activity present
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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; and SOURCE_ID in the ESI and HYDRO data layers.

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute:

Attribute_Label: TITLE

Attribute_Definition: Title of source material or data.

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

    Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: PUBLICATION

Attribute_Definition: Additional citation information.

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

    Unrepresentable_Domain: Acceptable values change from atlas to atlas.

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: Research Planning, Inc.

Attribute:
Attribute_Label: ELEMENT
Attribute_Definition: Major categories of biological data.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
   Enumerated_Domain:
      Enumerated_Domain_Value: BIRD
      Enumerated_Domain_Value_Definition: Birds
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
   Enumerated_Domain:
      Enumerated_Domain_Value: FISH
      Enumerated_Domain_Value_Definition: Fish
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
   Enumerated_Domain:
      Enumerated_Domain_Value: HABITAT
      Enumerated_Domain_Value_Definition: Habitats and Plants
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
   Enumerated_Domain:
      Enumerated_Domain_Value: INVERT
      Enumerated_Domain_Value_Definition: Invertebrates
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
   Enumerated_Domain:
      Enumerated_Domain_Value: M_MAMMAL
      Enumerated_Domain_Value_Definition: Marine Mammals
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
   Enumerated_Domain:
      Enumerated_Domain_Value: REPTILE
      Enumerated_Domain_Value_Definition: Reptiles and Amphibians
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
   Enumerated_Domain:
      Enumerated_Domain_Value: T_MAMMAL
      Enumerated_Domain_Value_Definition: Terrestrial Mammals
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.

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: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.

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: Research Planning, Inc.
    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: Research Planning, Inc.

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: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
    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: Research Planning, Inc.

Distribution_Information:
    Distributor:
        Contact_Information:
            Contact_Person_Primary:
                Contact_Person: John Kaperick
                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) 526-6400
            Contact_Facsimile_Telephone: (206) 526-6329
    Resource_Description: ESI Atlas for Virginia
    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, and
        will offer a replacement copy of the product when the product is determined unreadable by
        computer-input peripherals, or when the physical medium is delivered in damaged condition.
    Custom_Order_Process:
        Contact NOAA for distribution options (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, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI
        project and ESI_Viewer product are also included on the distribution CDs for ease of use of the
        ESI data. 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: 200512
  Metadata_Review_Date: 200512
  Metadata_Contact:
    Contact_Information:
      Contact_Person_Primary:
        Contact_Person: Jill Petersen
        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: Jill.Petersen@noaa.gov
  Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
  Metadata_Standard_Version: FGDC-STD-001-1998

Generated by mp version 2.8.21 on Wed Dec 07 16:06:15 2005

Virginia ESI: FISH (Fish Polygons)

Metadata also available as - [Parseable text] - [SGML]

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:*
>>>> National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
>>>
>>> *Publication_Date:* 200512
>>> *Title:* Virginia ESI: FISH (Fish Polygons)
>>> *Edition:* 2
>>> *Geospatial_Data_Presentation_Form:* Vector digital data
>>> *Series_Information:*
>>>> *Series_Name:* None
>>>> *Issue_Identification:* Virginia
>>>
>>> *Publication_Information:*
>>>> *Publication_Place:* Seattle, Washington
>>>> *Publisher:*
>>>>> National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.
>>>
>>> *Other_Citation_Details:*
>>>> Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
>
> *Description:*
>> *Abstract:*
>>> This data set contains sensitive biological resource data for marine, estuarine, anadromous, and brackishwater fish species in Virginia. Vector polygons in this data set represent fish distribution, concentration areas, and spawning 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 Environmental Sensitivity Index (ESI) data for Virginia. 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: 1979

Ending_Date: 2004

Currentness_Reference:

The biological data were compiled during 2004 - 2005. The currentness dates for the data range from 1979 to 2004 and are documented in the Lineage section.

Status:

Progress: Complete

Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -77.50000

East_Bounding_Coordinate: -75.12500

North_Bounding_Coordinate: 38.87500

South_Bounding_Coordinate: 36.50000

Keywords:

Theme:

Theme_Keyword_Thesaurus: None

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

Place:

Place_Keyword_Thesaurus: None

Place_Keyword: Virginia

Access_Constraints: None

Use_Constraints:

DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Besides the above warning, 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: datafig.jpg

   Browse_Graphic_File_Description:

      Depicts the relationships between spatial data layers and attribute data tables for the Virginia 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, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.3) and SQL SERVER(r) (version 7.0). The hardware configuration is PC's with Windows Operating System (NT4.0/2000).

The Spatial_Data_Organization Information section refers only to the source files in the ARC export format. The following files are included in that data set: birds.e00, esi.e00, fish.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, reptpt.e00, socecon.e00, t_mammal.e00, wetlands.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

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. A final review is made by the GIS manager, where the data are written to CD-ROM and the metadata are written.

      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, hardcopy reports, and hardcopy maps for fish distribution, concentration areas, and spawning areas. These data do not necessarily represent all fish occurrences in Virginia. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 65, Bluefish, Pomatomus saltatrix; 81, Spiny dogfish, Squalus acanthias; 85, Alewife, Alosa pseudoharengus; 86, Blueback herring, Alosa aestivalis; 87, American shad, Alosa sapidissima; 88, Winter flounder, Pleuronectes americanus; 90, White hake, Urophycis tenuis; 93, Striped killifish, Fundulus majalis; 94, Atlantic silverside, Menidia menidia; 95, Mummichog, Fundulus heteroclitus; 97, Tautog, Tautoga onitis; 98, American eel, Anguilla rostrata; 101, Shortnose sturgeon, Acipenser brevirostrum; 102, Atlantic sturgeon, Acipenser oxyrinchus; 103, Threadfin shad, Dorosoma petenense; 104, Striped bass, Morone saxatilis; 105, Hickory shad, Alosa mediocris; 107, Spotted seatrout, Cynoscion nebulosus; 108, Summer flounder, Paralichthys dentatus; 109, Red drum, Sciaenops ocellatus; 110, Black sea bass, Centropristis striata; 113, Bay anchovy, Anchoa mitchilli; 115, Atlantic menhaden, Brevoortia tyrannus; 119, Silver perch, Bairdiella chrysoura; 121, Spot, Leiostomus xanthurus; 122, Black drum, Pogonias cromis; 123, Atlantic croaker, Micropogonias undulatus; 124, Southern kingfish (whiting), Menticirrhus americanus; 127, Spanish mackerel, Scomberomorus maculatus; 138, Weakfish, Cynoscion regalis; 142, Crevalle jack, Caranx hippos; 145, White perch, Morone americana; 146, Atlantic herring, Clupea harengus; 147, Atlantic mackerel, Scomber scombrus; 148, Silver hake, Merluccius bilinearis; 150, Scup (porgy), Stenotomus chrysops; 151, Northern puffer, Sphoeroides maculatus; 152, Yellow perch, Perca flavescens; 153, Northern kingfish, Menticirrhus saxatilis; 154, Pollock, Pollachius virens; 155, Red hake, Urophycis chuss; 158, Butterfish, Peprilus triacanthus; 159, Banded killifish, Fundulus diaphanus; 162, Common carp, Cyprinus carpio; 163, Gizzard shad, Dorosoma cepedianum; 179, Largemouth bass, Micropterus salmoides; 181, Black crappie, Pomoxis nigromaculatus; 182, Bluegill, Lepomis macrochirus; 191, Shorthead redhorse, Moxostoma macrolepidotum; 200, Blue catfish, Ictalurus furcatus; 201, Channel catfish, Ictalurus punctatus; 211, Brown bullhead, Ameiurus nebulosus; 212, Pumpkinseed, Lepomis gibbosus; 218, Bowfin, Amia calva; 271, Inland silverside, Menidia beryllina; 283, Killifish, Fundulus spp.; 290, Striped anchovy, Anchoa hepsetus; 292, Chain pickerel, Esox niger; 294, Spotted hake, Urophycis regia; 310, Atlantic spadefish, Chaetodipterus faber; 312, Harvestfish, Peprilus alepidotus; 335, Silversides, n/a; 366, Hogchoker, Trinectes maculatus; 464, Longnose gar, Lepisosteus osseus; 466, Minnows, n/a; 482, Northern pipefish, Syngnathus fuscus; 483, Northern searobin, Prionotus carolinus; 506, White catfish, Ameiurus catus; 616, Quillback, Carpiodes cyprinus; 648, Chubsucker, Erimyzon sp.; 966, Clearnose skate, Raja eglanteria; 967, Sandbar shark, Carcharhinus plumbeus; 984, Bluespotted sunfish, Enneacanthus gloriosus; 985, Redbreast sunfish, Lepomis auritus; 986, Tessellated darter, Etheostoma olmstedi; 1029, Gobies, 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. Most of the spatial components of the biological data layers are 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 1:24,000. 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. See the Lineage and Process_Description sections for more information on the original data source and how these data were integrated or manipulated to create the final data set. 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.

Lineage:

    Source_Information:

        Source_Citation:

            Citation_Information:

                Originator: BONZEK, C., VIRGINIA INSTITUTE OF MARINE SCIENCE (VIMS)

                Publication_Date: 2004

                Title: FISH DISTRIBUTIONS FOR CHESAPEAKE BAY

                Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE

                Other_Citation_Details: N/A

        Type_of_Source_Media: PERSONAL COMMUNICATION

        Source_Time_Period_of_Content:

            Time_Period_Information:

                Single_Date/Time:

                    Calendar_Date: 2004

            Source_Currentness_Reference: DATE OF COMMUNICATION

        Source_Citation_Abbreviation: NONE

        Source_Contribution: FISH INFORMATION

    Source_Information:

        Source_Citation:

            Citation_Information:

                Originator: CHESMMAP TRAWL PROGRAM GROUP

                Publication_Date: 2004

                Title:

                    CHESAPEAKE BAY MULTISPECIES MODELLING AND ASSESSMENT PROGRAM (CHESMMAP), 2002 AND 2003

                Geospatial_Data_Presentation_Form: HARDCOPY TEXT

                Other_Citation_Details: N/A

        Type_of_Source_Media: PAPER

        Source_Time_Period_of_Content:

            Time_Period_Information:

                Range_of_Dates/Times:

                    Beginning_Date: 2002

                    Ending_Date: 2003

            Source_Currentness_Reference: DATE OF SURVEY

        Source_Citation_Abbreviation: NONE

        Source_Contribution: FISH INFORMATION

    Source_Information:

        Source_Citation:

            Citation_Information:

                Originator: GALLEGOS, J. [U.S. FISH AND WILDLIFE SERVICE (USFWS), VA BEACH]

                Publication_Date: 2004

                Title: BACK BAY NATIONAL WILDLIFE REFUGE SPECIES

DISTRIBUTION
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: 2004
    Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: FISH INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: GEER, P.
            Publication_Date: 1999
            Title: JUVENILE FISH AND BLUE CRAB STOCK ASSESSMENT
            PROGRAM
            Geospatial_Data_Presentation_Form: HARDCOPY TEXT
            Other_Citation_Details: COLLEGE OF WILLIAM AND MARY,
            GLOUCESTER POINT, VA
    Type_of_Source_Media: PAPER
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 1998
        Source_Currentness_Reference: DATE OF SURVEY
    Source_Citation_Abbreviation: NONE
    Source_Contribution: FISH INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: GRUBBS, D.
            Publication_Date: 2001
            Title:
                NURSERY DELINEAT, HABITAT UTILIZ, MVMTS, AND
                MIGRAT OF JUV CARCHARHINUS PLUMBEUS
            Geospatial_Data_Presentation_Form: HARDCOPY TEXT
            Other_Citation_Details: COLLEGE OF WILLIAM AND MARY,
            GLOUCESTER POINT, VA.
    Type_of_Source_Media: PAPER
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Range_of_Dates/Times:
                Beginning_Date: 1995
                Ending_Date: 2000
        Source_Currentness_Reference: DATE OF SURVEY
    Source_Citation_Abbreviation: NONE
    Source_Contribution: FISH INFORMATION
Source_Information:
    Source_Citation:

Citation_Information:
    Originator: HEWITT, M., (VIMS)
    Publication_Date: 2004
    Title: DISTRIBUTION AND ABUNDANCE FOR JUVENILE FINFISH
    Geospatial_Data_Presentation_Form: HARDCOPY TEXT
    Other_Citation_Details: N/A
Type_of_Source_Media: PAPER
Source_Time_Period_of_Content:
    Time_Period_Information:
        Single_Date/Time:
            Calendar_Date: 2004
    Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: FISH INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: HOFFMAN, J., VIMS
            Publication_Date: 2004
            Title: DISTRIBUTION OF ANADROMOUS FISH IN VIRGINIA
            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: 2004
        Source_Currentness_Reference: DATE OF COMMUNICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: FISH INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: HOUDE, E. UNIVERSITY OF MARYLAND
            Publication_Date: 2004
            Title: DISTRIBUTION OF ANADROMOUS FISHES IN THE POTOMAC
            RIVER
            Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
            Other_Citation_Details: N/A
    Type_of_Source_Media: EMAIL
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 2004
        Source_Currentness_Reference: DATE OF COMMUNICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: FISH INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: LIPPSON, A.J., ET AL.

Publication_Date: 1979
Title: ENVIRONMENTAL ATLAS OF THE POTOMAC ESTUARY
Geospatial_Data_Presentation_Form: HARDCOPY TEXT
Other_Citation_Details:
ENVIRONMENTAL CENTER, MARTIN MARIETTA
CORPORATION, POWER PLANT SITING PROGRAM, MD DEPT
OF NATURAL RESOURCES
Type_of_Source_Media: PAPER
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 1979
Source_Currentness_Reference: DATE OF PUBLICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: FISH INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: MURDY, E.O., R.S. BIRDSONG, J.A. MUSICK
Publication_Date: 1997
Title: FISHES OF CHESAPEAKE BAY
Geospatial_Data_Presentation_Form: HARDCOPY TEXT
Other_Citation_Details: SMITHSONIAN INSTITUTION PRESS,
WASHINGTON, DC
Type_of_Source_Media: PAPER
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 1997
Source_Currentness_Reference: DATE OF PUBLICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: FISH INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: MUSICK, J., VIMS
Publication_Date: 2004
Title: DISTRIBUTION OF FISH AND MARINE MAMMALS OF
VIRGINIA
Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
Other_Citation_Details: N/A
Type_of_Source_Media: PERSONAL COMMUNICATION
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 2004
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: FISH INFORMATION
Source_Information:
Source_Citation:

Citation_Information:
    Originator: MUSICK, J., B. NORCROSS, AND D. HATA
    Publication_Date: 1999
    Title:
        FISH AND FISHERIES OF THE SEASIDE OF THE EASTERN
        SHORE OF VIRGINIA
    Geospatial_Data_Presentation_Form: HARDCOPY TEXT
    Other_Citation_Details:
        VIRGINIA INSTITUTE OF MARINE SCIENCE, COLLEGE OF
        WILLIAM AND MARY, VA MARINE RESOURCE REPORT #99-5
Type_of_Source_Media: PAPER
Source_Time_Period_of_Content:
    Time_Period_Information:
        Single_Date/Time:
            Calendar_Date: 1999
    Source_Currentness_Reference: DATE OF PUBLICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: FISH INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: OLNEY, J., VA INST. MAR. SCI. (VIMS)
            Publication_Date: 2004
            Title: DISTRIBUTION AND ABUNDANCE DATA FOR ANADROMOUS
            SPECIES
            Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
            Other_Citation_Details: N/A
    Type_of_Source_Media: PERSONAL COMMUNICATION
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 2004
        Source_Currentness_Reference: DATE OF COMMUNICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: FISH INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: STONE, S.L., ET AL.
            Publication_Date: 1994
            Title:
                DISTRIBUTION AND ABUNDANCE OF FISHES AND
                INVERTEBRATES IN MID-ATLANTIC ESTUARIES
            Geospatial_Data_Presentation_Form: HARDCOPY TEXT
            Other_Citation_Details:
                NOAA/NOS STRATEGIC ENVIRONMENTAL ASSESSMENTS
                DIVISION, SILVER SPRING, MD
    Type_of_Source_Media: PAPER
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Range_of_Dates/Times:

Beginning_Date: 1985
Ending_Date: 1994
Source_Currentness_Reference: DATE OF SURVEY
Source_Citation_Abbreviation: NONE
Source_Contribution: FISH INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: VIMS, DEPT OF FISHERIES SCIENCE
Publication_Date: 2003
Title:
ESTIMATION OF RELATIVE ABUNDANCE OF
RECREATIONALLY IMPORTANT JUVENILE FINFISH
Geospatial_Data_Presentation_Form: HARDCOPY TEXT
Other_Citation_Details: VA MARINE RESOURCES COMMISSION,
GLOUCESTER POINT, VA
Type_of_Source_Media: PAPER
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date: 2002
Ending_Date: 2003
Source_Currentness_Reference: DATE OF SURVEY
Source_Citation_Abbreviation: NONE
Source_Contribution: FISH INFORMATION
Process_Step:
Process_Description:
Two main sources of data were used to depict fish distribution and seasonality for
this data layer: (1) personal interviews with resource experts from the Virginia
Institute of Marine Science (VIMS), the University of Maryland, and the National
Wildlife Refuges (NWRs); and (2) hardcopy reports (e.g., Environmental Atlas of
the Potomac Estuary, ChesMMAP Trawl Program reports).

Resource experts and hardcopy reports provided concentration and seasonality
information.

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 a biology data layer: (1) information gathered
during initial interviews and from hardcopy sources are compiled onto U.S.
Geological Survey 1:24,000 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 compiled
ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following
the delivery of draft maps to the participating resource experts, a second set of
interviews is conducted to review the maps. 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: 200505
Process_Contact:

Contact_Information:
    Contact_Organization_Primary:
        Contact_Organization: NOAA, Office of Response and Restoration
        Contact_Person: Jill Petersen
    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: Jill.Petersen@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: 2787
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Area point
            Point_and_Vector_Object_Count: 2787
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Complete chain
            Point_and_Vector_Object_Count: 7418
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Link
            Point_and_Vector_Object_Count: 1938177
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Node, planar graph
            Point_and_Vector_Object_Count: 7146

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 1927
            Ellipsoid_Name: Clark 1866
            Semi-major_Axis: 6378206.400000
            Denominator_of_Flattening_Ratio: 294.978698

Entity_and_Attribute_Information:
    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 Virginia atlas, the number is 55), 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 below 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 described below 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 below, 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 below.

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, and spawning areas. 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: Research Planning, Inc.
　　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 (55), 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: 550200002

Range_Domain_Maximum: 550200746

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 polygons and do not contain information.

Attribute_Definition_Source: NOAA

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 55000722

Range_Domain_Maximum: 55000765

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. 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: Research Planning, Inc.

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: 55000001

Range_Domain_Maximum: 55000847

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 (55), 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: 550100002
Range_Domain_Maximum: 553600012

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: Research Planning, Inc.
    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: 055000001
                Range_Domain_Maximum: 055000847
    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: Research Planning, Inc.
        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. No quantitative data was available for fish, so the
            concentration field contains "-".
        Attribute_Definition_Source: Research Planning, Inc.
        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: Research Planning, Inc.
        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: Research Planning, Inc.

    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: Research Planning, Inc.

    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: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: BIRD

            Enumerated_Domain_Value_Definition: Birds

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: FISH

            Enumerated_Domain_Value_Definition: Fish

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: HABITAT

            Enumerated_Domain_Value_Definition: Habitats and Plants

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: INVERT

            Enumerated_Domain_Value_Definition: Invertebrates

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: M_MAMMAL

            Enumerated_Domain_Value_Definition: Marine Mammals

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

           Enumerated_Domain_Value: REPTILE

               Enumerated_Domain_Value_Definition: Reptiles and Amphibians

               Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

           Enumerated_Domain_Value: T_MAMMAL

               Enumerated_Domain_Value_Definition: Terrestrial Mammals

               Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

    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: Research Planning, Inc.

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: Research Planning, Inc.

    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: Research Planning, Inc.

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: Research Planning, Inc.

    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: Research Planning, Inc.
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: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: BIRD
            Enumerated_Domain_Value_Definition: Birds
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: FISH
            Enumerated_Domain_Value_Definition: Fish
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: HABITAT
            Enumerated_Domain_Value_Definition: Habitats and Plants
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: INVERT
            Enumerated_Domain_Value_Definition: Invertebrates
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: M_MAMMAL
            Enumerated_Domain_Value_Definition: Marine Mammals
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: REPTILE
            Enumerated_Domain_Value_Definition: Reptiles and Amphibians

> > > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
> > *Attribute_Domain_Values:*
> > > *Enumerated_Domain:*
> > > > *Enumerated_Domain_Value:* T_MAMMAL
> > > > *Enumerated_Domain_Value_Definition:* Terrestrial Mammals
> > > > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:
> *Attribute_Label:* SUBELEMENT
> *Attribute_Definition:* Element subgroup delineating a logical grouping of species.
> *Attribute_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
> > *Enumerated_Domain:*
> > > *Enumerated_Domain_Value:* bivalve
> > > *Enumerated_Domain_Value_Definition:* Bivalve
> > > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
> > *Enumerated_Domain:*
> > > *Enumerated_Domain_Value:* crab
> > > *Enumerated_Domain_Value_Definition:* Crab
> > > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
> > *Enumerated_Domain:*
> > > *Enumerated_Domain_Value:* diadromous
> > > *Enumerated_Domain_Value_Definition:* Diadromous fish
> > > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
> > *Enumerated_Domain:*
> > > *Enumerated_Domain_Value:* diving
> > > *Enumerated_Domain_Value_Definition:* Diving bird
> > > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
> > *Enumerated_Domain:*
> > > *Enumerated_Domain_Value:* dolphin
> > > *Enumerated_Domain_Value_Definition:* Dolphin
> > > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
> > *Enumerated_Domain:*
> > > *Enumerated_Domain_Value:* e_nursery
> > > *Enumerated_Domain_Value_Definition:* Estuarine nursery fish
> > > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
> > *Enumerated_Domain:*
> > > *Enumerated_Domain_Value:* e_resident
> > > *Enumerated_Domain_Value_Definition:* Estuarine resident
> > > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
> > *Enumerated_Domain:*
> > > *Enumerated_Domain_Value:* freshwater
> > > *Enumerated_Domain_Value_Definition:* Freshwater fish
> > > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*

Enumerated_Domain:
　　Enumerated_Domain_Value: gastropod
　　Enumerated_Domain_Value_Definition: Gastropod
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: gull_tern
　　Enumerated_Domain_Value_Definition: Gull or tern
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: insect
　　Enumerated_Domain_Value_Definition: Insect
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: m_benthic
　　Enumerated_Domain_Value_Definition: Marine benthic fish
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: m_pelagic
　　Enumerated_Domain_Value_Definition: Marine pelagic fish
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: passerine
　　Enumerated_Domain_Value_Definition: Passerine bird
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: pelagic
　　Enumerated_Domain_Value_Definition: Pelagic bird
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: pinniped
　　Enumerated_Domain_Value_Definition: Pinniped
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: plant
　　Enumerated_Domain_Value_Definition: Plant
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: raptor
　　Enumerated_Domain_Value_Definition: Raptor
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:

Enumerated_Domain_Value: sav
Enumerated_Domain_Value_Definition: Submerged aquatic vegetation
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: shorebird
  Enumerated_Domain_Value_Definition: Shorebird
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: sm_mammal
  Enumerated_Domain_Value_Definition: Small mammal
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: turtle
  Enumerated_Domain_Value_Definition: Turtle
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: upland
  Enumerated_Domain_Value_Definition: Upland habitat
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: wading
  Enumerated_Domain_Value_Definition: Wading bird
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: waterfowl
  Enumerated_Domain_Value_Definition: Waterfowl
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: wetland
  Enumerated_Domain_Value_Definition: Wetland
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: whale
  Enumerated_Domain_Value_Definition: Whale
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.

    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: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: 0

            Enumerated_Domain_Value_Definition: Date unspecified

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

    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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute:

    Attribute_Label: ELEMENT

    Attribute_Definition: Major categories of biological data.

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: BIRD

            Enumerated_Domain_Value_Definition: Birds

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: FISH

            Enumerated_Domain_Value_Definition: Fish

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: HABITAT
  Enumerated_Domain_Value_Definition: Habitats and Plants
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: INVERT
  Enumerated_Domain_Value_Definition: Invertebrates
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: M_MAMMAL
  Enumerated_Domain_Value_Definition: Marine Mammals
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: REPTILE
  Enumerated_Domain_Value_Definition: Reptiles and Amphibians
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: T_MAMMAL
  Enumerated_Domain_Value_Definition: Terrestrial Mammals
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.
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: Research Planning, Inc.
Attribute_Domain_Values:
 Range_Domain:
  Range_Domain_Minimum: 1
  Range_Domain_Maximum: N

Attribute:
Attribute_Label: JAN
Attribute_Definition: January
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:
      Enumerated_Domain_Value: X
      Enumerated_Domain_Value_Definition: Present in January
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
Attribute_Label: FEB
Attribute_Definition: February
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: X
      Enumerated_Domain_Value_Definition: Present in February
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
Attribute_Label: MAR
Attribute_Definition: March
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: X
      Enumerated_Domain_Value_Definition: Present in March
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
Attribute_Label: APR
Attribute_Definition: April
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: X
      Enumerated_Domain_Value_Definition: Present in April
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
Attribute_Label: MAY
Attribute_Definition: May
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: X
      Enumerated_Domain_Value_Definition: Present in May
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
Attribute_Label: JUN
Attribute_Definition: June
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: X
      Enumerated_Domain_Value_Definition: Present in June
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
Attribute_Label: JUL

   Attribute_Definition: July
   Attribute_Definition_Source: Research Planning, Inc.
   Attribute_Domain_Values:
    Enumerated_Domain:
     Enumerated_Domain_Value: X
     Enumerated_Domain_Value_Definition: Present in July
     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
  Attribute_Label: AUG
  Attribute_Definition: August
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
   Enumerated_Domain:
    Enumerated_Domain_Value: X
    Enumerated_Domain_Value_Definition: Present in August
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
  Attribute_Label: SEP
  Attribute_Definition: September
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
   Enumerated_Domain:
    Enumerated_Domain_Value: X
    Enumerated_Domain_Value_Definition: Present in September
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
  Attribute_Label: OCT
  Attribute_Definition: October
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
   Enumerated_Domain:
    Enumerated_Domain_Value: X
    Enumerated_Domain_Value_Definition: Present in October
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
  Attribute_Label: NOV
  Attribute_Definition: November
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
   Enumerated_Domain:
    Enumerated_Domain_Value: X
    Enumerated_Domain_Value_Definition: Present in November
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
  Attribute_Label: DEC
  Attribute_Definition: December
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
   Enumerated_Domain:
    Enumerated_Domain_Value: X
    Enumerated_Domain_Value_Definition: Present in December

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: Y
        Enumerated_Domain_Value_Definition: Life-history stage or activity present
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: Y
            Enumerated_Domain_Value_Definition: Life-history stage or activity present
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Y

Enumerated_Domain_Value_Definition: Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Y

Enumerated_Domain_Value_Definition: Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Y

Enumerated_Domain_Value_Definition: Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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; and SOURCE_ID in the ESI and HYDRO data layers.

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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:* Research Planning, Inc.
> *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:* Research Planning, Inc.

Attribute:
> *Attribute_Label:* TITLE
> *Attribute_Definition:* Title of source material or data.
> *Attribute_Definition_Source:* Research Planning, Inc.
> *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:* Research Planning, Inc.
> *Attribute_Domain_Values:*
>> *Unrepresentable_Domain:* Acceptable values change from atlas to atlas.

Attribute:
> *Attribute_Label:* PUBLICATION
> *Attribute_Definition:* Additional citation information.
> *Attribute_Definition_Source:* Research Planning, Inc.
> *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:* Research Planning, Inc.
> *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:* Research Planning, Inc.
> *Attribute_Domain_Values:*
>> *Unrepresentable_Domain:* Acceptable values change from atlas to atlas.

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: Research Planning, Inc.

Attribute:

Attribute_Label: ELEMENT

Attribute_Definition: Major categories of biological data.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

 Enumerated_Domain:

  Enumerated_Domain_Value: BIRD

  Enumerated_Domain_Value_Definition: Birds

  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

 Enumerated_Domain:

  Enumerated_Domain_Value: FISH

  Enumerated_Domain_Value_Definition: Fish

  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

 Enumerated_Domain:

  Enumerated_Domain_Value: HABITAT

  Enumerated_Domain_Value_Definition: Habitats and Plants

  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

 Enumerated_Domain:

  Enumerated_Domain_Value: INVERT

  Enumerated_Domain_Value_Definition: Invertebrates

  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

 Enumerated_Domain:

  Enumerated_Domain_Value: M_MAMMAL

  Enumerated_Domain_Value_Definition: Marine Mammals

  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

 Enumerated_Domain:

  Enumerated_Domain_Value: REPTILE

  Enumerated_Domain_Value_Definition: Reptiles and Amphibians

  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

 Enumerated_Domain:

  Enumerated_Domain_Value: T_MAMMAL

  Enumerated_Domain_Value_Definition: Terrestrial Mammals

  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.
   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: Research Planning, Inc.
   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: Research Planning, Inc.
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: Research Planning, Inc.
   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: Research Planning, Inc.
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: Research Planning, Inc.
   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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Distribution_Information:

Distributor:

Contact_Information:

Contact_Person_Primary:

Contact_Person: John Kaperick

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) 526-6400

Contact_Facsimile_Telephone: (206) 526-6329

Resource_Description: ESI Atlas for Virginia

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, and will offer a replacement copy of the product when the product is determined unreadable by computer-input peripherals, or when the physical medium is delivered in damaged condition.

Custom_Order_Process:

Contact NOAA for distribution options (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, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI_Viewer product are also included on the distribution CDs for ease of use of the ESI data. 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: 200512
    Metadata_Review_Date: 200512
    Metadata_Contact:
        Contact_Information:
            Contact_Person_Primary:
                Contact_Person: Jill Petersen
                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: Jill.Petersen@noaa.gov
    Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
    Metadata_Standard_Version: FGDC-STD-001-1998

Generated by mp version 2.8.21 on Wed Dec 07 16:29:10 2005

Virginia ESI: INVERT (Invertebrate Polygons)

Metadata also available as - [Parseable text] - [SGML]

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:
                National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
            Publication_Date: 200512
            Title: Virginia ESI: INVERT (Invertebrate Polygons)
            Edition: 2
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Virginia
            Publication_Information:
                Publication_Place: Seattle, Washington
                Publisher:
                    National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.
            Other_Citation_Details:
                Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
    Description:
        Abstract:
            This data set contains sensitive biological resource data for marine, estuarine, and rare invertebrate species in Virginia. 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 Environmental Sensitivity Index (ESI) data for Virginia. 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: 1994
Ending_Date: 2004
Currentness_Reference:
The biological data were compiled during 2004-2005. The currentness dates for the data range from 1994 to 2004 and are documented in the Lineage section.

Status:
Progress: Complete
Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:
Bounding_Coordinates:
West_Bounding_Coordinate: -77.50000
East_Bounding_Coordinate: -75.12500
North_Bounding_Coordinate: 38.87500
South_Bounding_Coordinate: 36.50000

Keywords:
Theme:
Theme_Keyword_Thesaurus: None
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
Place:
Place_Keyword_Thesaurus: None
Place_Keyword: Virginia

Access_Constraints: None

Use_Constraints:
DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Besides the above warning, 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: datafig.jpg

Browse_Graphic_File_Description:

Depicts the relationships between spatial data layers and attribute data tables for the Virginia 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, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.3) and SQL SERVER(r) (version 7.0). The hardware configuration is PC's with Windows Operating System (NT4.0/2000).

The Spatial_Data_Organization Information section refers only to the source files in the ARC export format. The following files are included in that data set: birds.e00, esi.e00, fish.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, reptpt.e00, socecon.e00, t_mammal.e00, wetlands.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

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. A final review is made by the GIS manager, where the data are written to CD-ROM and the metadata are written.

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 and hardcopy reports on invertebrate distribution. These data do not necessarily represent all invertebrate occurrences in Virginia. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 42, Northern quahog (hard clam), Mercenaria mercenaria; 43, Eastern oyster, Crassostrea virginica; 44, Horseshoe crab, Limulus polyphemus; 46, Channeled whelk, Busycon canaliculatum; 47, Knobbed whelk, Busycon carica; 49, Blue crab, Callinectes sapidus; 82, Brackishwater clam, Rangia cuneata; 285, Northeastern beach tiger beetle, Cicindela dorsalis dorsalis; 505, Monarch butterfly, Danaus plexippus; 506, Carolina marsh clam, Polymesoda caroliniana; 507, Little white tiger beetle, Cicindela lepida.

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. Most of the spatial components of the biological data layers are 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 1:24,000. 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. See the Lineage and Process_Description sections for more information on the original data source and how these data were integrated or manipulated to create the final data set. 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.

Lineage:
Source_Information:
Source_Citation:
Citation_Information:
Originator: AUSTIN, H., VIRGINIA INSTITUTE OF MARINE SCIENCE (VIMS)
Publication_Date: 2004
Title: FISH AND HORSESHOE CRAB DATA
Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
Other_Citation_Details: N/A
Type_of_Source_Media: PERSONAL COMMUNICATION
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 2004
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: INVERT INFORMATION
Source_Information:
Source_Citation:
Citation_Information:

Originator: BRINDZA, L.J.
Publication_Date: 2002
Title: MONARCH BUTTERFLY MIGRATION PROJECT: A SUMMARY
FROM 1998-2001
Geospatial_Data_Presentation_Form: HARDCOPY TEXT
Other_Citation_Details:
IN FIELD RESEARCH REPORT 1995-2002: COASTAL VIRGINIA
WILDLIFE OBSERVATORY, EASTVILLE VA, PP. 92-96.
Type_of_Source_Media: PAPER
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date: 1998
Ending_Date: 2001
Source_Currentness_Reference: DATE OF SURVEY
Source_Citation_Abbreviation: NONE
Source_Contribution: INVERT INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: CHESMMAAP TRAWL PROGRAM GROUP
Publication_Date: 2004
Title:
CHESAPEAKE BAY MULTISPECIES MODELLING AND
ASSESSMENT PROGRAM, 2002 AND 2003
Geospatial_Data_Presentation_Form: HARDCOPY TEXT
Other_Citation_Details: N/A
Type_of_Source_Media: PAPER
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date: 2002
Ending_Date: 2003
Source_Currentness_Reference: DATE OF SURVEY
Source_Citation_Abbreviation: NONE
Source_Contribution: INVERT INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator:
FIELD, D. (VA DEPARTMENT OF CONSERVATION AND
RECREATION [DCR], WACHAPREAGUE)
Publication_Date: 2004
Title: NATURAL HERITAGE PROGRAM DATA
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: 2004

Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: INVERT INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
           Originator: GALLEGOS, J. (U.S. FISH AND WILDLIFE SERVICE [USFWS], VA BEACH)
           Publication_Date: 2004
           Title: BACK BAY NATIONAL WILDLIFE REFUGE SPECIES DISTRIBUTION
           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: 2004
        Source_Currentness_Reference: DATE OF COMMUNICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: INVERT INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
           Originator: HARAMIS, M., U.S. GEOLOGICAL SURVEY (USGS)
           Publication_Date: 2004
           Title: DISTRIBUTION OF HORSESHOE CRAB IN CHESAPEAKE BAY
           Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
           Other_Citation_Details: N/A
    Type_of_Source_Media: EMAIL
    Source_Time_Period_of_Content:
        Time_Period_Information:
           Single_Date/Time:
               Calendar_Date: 2004
        Source_Currentness_Reference: DATE OF COMMUNICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: INVERT INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
           Originator: HATA D., VIRGINIA TECH
           Publication_Date: 2004
           Title: DISTRIBUTION AND ABUNDANCE OF HORSESHOE CRABS
           Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
           Other_Citation_Details: N/A
    Type_of_Source_Media: EMAIL
    Source_Time_Period_of_Content:
        Time_Period_Information:
           Single_Date/Time:
               Calendar_Date: 2004
        Source_Currentness_Reference: DATE OF COMMUNICATION

Source_Citation_Abbreviation: NONE
Source_Contribution: INVERT INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: MCCAULEY, J. (USFWS, WARSAW, VA)
            Publication_Date: 2004
            Title:
                BIRD AND INVERT SEASONALITY AND DISTRIBUTION IN
                EASTERN VA RIVERS NWR COMPLEX
            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: 2004
        Source_Currentness_Reference: DATE OF COMMUNICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: INVERT INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: MONTANE, M., VIMS
            Publication_Date: 2004
            Title: ABUNDANCE AND DISTRIBUTION OF FINFISH AND BLUE
                CRAB OF VIRGINIA
            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: 2004
        Source_Currentness_Reference: DATE OF COMMUNICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: INVERT INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: OESTERLING, M., VIMS
            Publication_Date: 2004
            Title: DISTRIBUTION AND ABUNDANCE OF SHELLFISH IN VIRGINIA
            Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
            Other_Citation_Details: N/A
    Type_of_Source_Media: PERSONAL COMMUNICATION
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 2004
        Source_Currentness_Reference: DATE OF COMMUNICATION

            Source_Citation_Abbreviation: NONE
            Source_Contribution: INVERT INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: STONE, S.L. ET AL.
            Publication_Date: 1994
            Title:
                DISTRIBUTION AND ABUNDANCE OF FISHES AND
                INVERTEBRATES IN MID-ATLANTIC ESTUARIES
            Geospatial_Data_Presentation_Form: HARDCOPY TEXT
            Other_Citation_Details:
                NOAA/NOS STRATEGIC ENVIRONMENTAL ASSESSMENTS
                DIVISION, SILVER SPRING, MD
    Type_of_Source_Media: PAPER
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Range_of_Dates/Times:
                Beginning_Date: 1985
                Ending_Date: 1994
        Source_Currentness_Reference: DATE OF SURVEY
    Source_Citation_Abbreviation: NONE
    Source_Contribution: INVERT INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: T. PENN, USFWS, CHINCOTEAGUE ISLAND
            Publication_Date: 2004
            Title: DISTRIBUTION OF CHINCOTEAGUE NATIONAL WILDLIFE
            REFUGE SPECIES
            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: 2004
        Source_Currentness_Reference: DATE OF COMMUNICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: INVERT INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: VIMS, DEPT OF FISHERIES SCIENCE
            Publication_Date: 2003
            Title:
                ESTIMATION OF RELATIVE ABUNDANCE OF
                RECREATIONALLY IMPORTANT JUVENILE FINFISH
            Geospatial_Data_Presentation_Form: HARDCOPY TEXT
            Other_Citation_Details: VA MARINE RESOURCES COMMISSION,
            GLOUCESTER POINT, VA

Type_of_Source_Media: PAPER
Source_Time_Period_of_Content:
    Time_Period_Information:
        Range_of_Dates/Times:
            Beginning_Date: 2002
            Ending_Date: 2003
    Source_Currentness_Reference: DATE OF SURVEY
Source_Citation_Abbreviation: NONE
Source_Contribution: INVERT INFORMATION
Process_Step:
    Process_Description:

Two main sources of data were used to depict invertebrate distribution for this data layer: (1) personal interviews with resource experts from the Virginia Institute of Marine Science (VIMS), U.S. Fish and Wildlife Service (USFWS), U.S. Geological Survey (USGS), Virginia Polytechnic Institute and State University (VA Tech), and Virginia Department of Conservation and Recreation Division of Natural Heritage (VA DCR DNH); and (2) numerous published reports.

Resource experts and hardcopy reports provided concentration and seasonality information.

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 a biology data layer: (1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:24,000 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 compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. 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.

Process_Date: 200505
Process_Contact:
    Contact_Information:
        Contact_Organization_Primary:
            Contact_Organization: NOAA, Office of Response and Restoration
            Contact_Person: Jill Petersen
        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: Jill.Petersen@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: 2547
　　　　SDTS_Terms_Description:
　　　　　　SDTS_Point_and_Vector_Object_Type: Area point
　　　　　　Point_and_Vector_Object_Count: 2547
　　　　SDTS_Terms_Description:
　　　　　　SDTS_Point_and_Vector_Object_Type: Complete chain
　　　　　　Point_and_Vector_Object_Count: 6615
　　　　SDTS_Terms_Description:
　　　　　　SDTS_Point_and_Vector_Object_Type: Link
　　　　　　Point_and_Vector_Object_Count: 1683233
　　　　SDTS_Terms_Description:
　　　　　　SDTS_Point_and_Vector_Object_Type: Node, planar graph
　　　　　　Point_and_Vector_Object_Count: 6345

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 1927
　　　　　　Ellipsoid_Name: Clark 1866
　　　　　　Semi-major_Axis: 6378206.400000
　　　　　　Denominator_of_Flattening_Ratio: 294.978698

Entity_and_Attribute_Information:
　　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, 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 Virginia atlas, the number is 55), 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 below 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 described below 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 below, 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 below.

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. 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: Research Planning, Inc.
    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 (55), 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: 550700002
                Range_Domain_Maximum: 550702507
    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 polygons and do not contain information.

Attribute_Definition_Source: NOAA

Attribute_Domain_Values:

    Range_Domain:

        Range_Domain_Minimum: 55000774

        Range_Domain_Maximum: 55000818

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. 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: Research Planning, Inc.

    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: 55000001

                Range_Domain_Maximum: 55000847

    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 (55), 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: 550100002

                Range_Domain_Maximum: 553600012

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: Research Planning, Inc.

    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: 055000001

Range_Domain_Maximum: 055000847

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: Research Planning, Inc.

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 or the approximate density (e.g., 1000s) of a species at a particular
location. In cases where no quantitative data were available, descriptive terms such
as "LOW-MED" and "HIGH" were used to describe the relative abundance of a
species at a specific location. In cases where no concentration information was
available from any source, the field was populated with "-".

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.
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: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: BIRD
        Enumerated_Domain_Value_Definition: Birds
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: FISH
        Enumerated_Domain_Value_Definition: Fish
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: HABITAT
        Enumerated_Domain_Value_Definition: Habitats and Plants
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: INVERT
        Enumerated_Domain_Value_Definition: Invertebrates
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: M_MAMMAL
        Enumerated_Domain_Value_Definition: Marine Mammals
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: REPTILE
        Enumerated_Domain_Value_Definition: Reptiles and Amphibians
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: T_MAMMAL
        Enumerated_Domain_Value_Definition: Terrestrial Mammals
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
    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: Research Planning, Inc.
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: Research Planning, Inc.
    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: Research Planning, Inc.
        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: Research Planning, Inc.
        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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: BIRD

Enumerated_Domain_Value_Definition: Birds

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: FISH

Enumerated_Domain_Value_Definition: Fish

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: HABITAT

Enumerated_Domain_Value_Definition: Habitats and Plants

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: INVERT

Enumerated_Domain_Value_Definition: Invertebrates

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: M_MAMMAL

Enumerated_Domain_Value_Definition: Marine Mammals

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: REPTILE

Enumerated_Domain_Value_Definition: Reptiles and Amphibians

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: T_MAMMAL

Enumerated_Domain_Value_Definition: Terrestrial Mammals

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: SUBELEMENT

Attribute_Definition: Element subgroup delineating a logical grouping of species.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:
　　Enumerated_Domain_Value: bivalve
　　Enumerated_Domain_Value_Definition: Bivalve
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: crab
　　Enumerated_Domain_Value_Definition: Crab
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: diadromous
　　Enumerated_Domain_Value_Definition: Diadromous fish
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: diving
　　Enumerated_Domain_Value_Definition: Diving bird
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: dolphin
　　Enumerated_Domain_Value_Definition: Dolphin
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: e_nursery
　　Enumerated_Domain_Value_Definition: Estuarine nursery fish
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: e_resident
　　Enumerated_Domain_Value_Definition: Estuarine resident
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: freshwater
　　Enumerated_Domain_Value_Definition: Freshwater fish
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: gastropod
　　Enumerated_Domain_Value_Definition: Gastropod
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: gull_tern
　　Enumerated_Domain_Value_Definition: Gull or tern
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:

Enumerated_Domain_Value: insect

Enumerated_Domain_Value_Definition: Insect

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: m_benthic

Enumerated_Domain_Value_Definition: Marine benthic fish

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: m_pelagic

Enumerated_Domain_Value_Definition: Marine pelagic fish

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: passerine

Enumerated_Domain_Value_Definition: Passerine bird

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: pelagic

Enumerated_Domain_Value_Definition: Pelagic bird

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: pinniped

Enumerated_Domain_Value_Definition: Pinniped

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: plant

Enumerated_Domain_Value_Definition: Plant

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: raptor

Enumerated_Domain_Value_Definition: Raptor

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: sav

Enumerated_Domain_Value_Definition: Submerged aquatic vegetation

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: shorebird

Enumerated_Domain_Value_Definition: Shorebird

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: sm_mammal

Enumerated_Domain_Value_Definition: Small mammal
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: turtle
  Enumerated_Domain_Value_Definition: Turtle
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: upland
  Enumerated_Domain_Value_Definition: Upland habitat
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: wading
  Enumerated_Domain_Value_Definition: Wading bird
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: waterfowl
  Enumerated_Domain_Value_Definition: Waterfowl
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: wetland
  Enumerated_Domain_Value_Definition: Wetland
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: whale
  Enumerated_Domain_Value_Definition: Whale
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:
> *Enumerated_Domain_Value:* 0
> *Enumerated_Domain_Value_Definition:* Date unspecified
> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

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: Research Planning, Inc.
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:* Research Planning, Inc.

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:* Research Planning, Inc.

Attribute:
Attribute_Label: ELEMENT
Attribute_Definition: Major categories of biological data.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
> *Enumerated_Domain:*
>> *Enumerated_Domain_Value:* BIRD
>> *Enumerated_Domain_Value_Definition:* Birds
>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute_Domain_Values:
> *Enumerated_Domain:*
>> *Enumerated_Domain_Value:* FISH
>> *Enumerated_Domain_Value_Definition:* Fish
>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute_Domain_Values:
> *Enumerated_Domain:*
>> *Enumerated_Domain_Value:* HABITAT
>> *Enumerated_Domain_Value_Definition:* Habitats and Plants
>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute_Domain_Values:
> *Enumerated_Domain:*
>> *Enumerated_Domain_Value:* INVERT
>> *Enumerated_Domain_Value_Definition:* Invertebrates
>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: M_MAMMAL
    Enumerated_Domain_Value_Definition: Marine Mammals
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: REPTILE
    Enumerated_Domain_Value_Definition: Reptiles and Amphibians
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: T_MAMMAL
    Enumerated_Domain_Value_Definition: Terrestrial Mammals
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.
  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: Research Planning, Inc.
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum: 1
      Range_Domain_Maximum: N

Attribute:
  Attribute_Label: JAN
  Attribute_Definition: January
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: X
      Enumerated_Domain_Value_Definition: Present in January
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
  Attribute_Label: FEB
  Attribute_Definition: February
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: X

        Enumerated_Domain_Value_Definition: Present in February
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
    Attribute_Label: MAR
    Attribute_Definition: March
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: X
            Enumerated_Domain_Value_Definition: Present in March
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
    Attribute_Label: APR
    Attribute_Definition: April
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: X
            Enumerated_Domain_Value_Definition: Present in April
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
    Attribute_Label: MAY
    Attribute_Definition: May
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: X
            Enumerated_Domain_Value_Definition: Present in May
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
    Attribute_Label: JUN
    Attribute_Definition: June
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: X
            Enumerated_Domain_Value_Definition: Present in June
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
    Attribute_Label: JUL
    Attribute_Definition: July
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: X
            Enumerated_Domain_Value_Definition: Present in July
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
    Attribute_Label: AUG
    Attribute_Definition: August
    Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: X
    Enumerated_Domain_Value_Definition: Present in August
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
  Attribute_Label: SEP
  Attribute_Definition: September
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: X
      Enumerated_Domain_Value_Definition: Present in September
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
  Attribute_Label: OCT
  Attribute_Definition: October
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: X
      Enumerated_Domain_Value_Definition: Present in October
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
  Attribute_Label: NOV
  Attribute_Definition: November
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: X
      Enumerated_Domain_Value_Definition: Present in November
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
  Attribute_Label: DEC
  Attribute_Definition: December
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: X
      Enumerated_Domain_Value_Definition: Present in December
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
  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: Research Planning, Inc.

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:* Research Planning, Inc.
> *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:* Research Planning, Inc.
>> *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:* Research Planning, Inc.
> *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:* Research Planning, Inc.
>> *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 elements.
>> *Attribute_Definition_Source:* Research Planning, Inc.
>> *Attribute_Domain_Values:*
>>> *Enumerated_Domain:*
>>>> *Enumerated_Domain_Value:* Y

Enumerated_Domain_Value_Definition: Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Y

Enumerated_Domain_Value_Definition: Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Y

Enumerated_Domain_Value_Definition: Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Y

Enumerated_Domain_Value_Definition: Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Y
Enumerated_Domain_Value_Definition: Life-history stage or activity present
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.

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: Research Planning, Inc.
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; and SOURCE_ID in the ESI and HYDRO data layers.
Attribute_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.

Attribute:

Attribute_Label: TITLE

Attribute_Definition: Title of source material or data.

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: PUBLICATION

Attribute_Definition: Additional citation information.

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

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: Research Planning, Inc.

Attribute:

Attribute_Label: ELEMENT

Attribute_Definition: Major categories of biological data.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: BIRD

Enumerated_Domain_Value_Definition: Birds

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

　Enumerated_Domain:

　　Enumerated_Domain_Value: FISH

　　Enumerated_Domain_Value_Definition: Fish

　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

　Enumerated_Domain:

　　Enumerated_Domain_Value: HABITAT

　　Enumerated_Domain_Value_Definition: Habitats and Plants

　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

　Enumerated_Domain:

　　Enumerated_Domain_Value: INVERT

　　Enumerated_Domain_Value_Definition: Invertebrates

　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

　Enumerated_Domain:

　　Enumerated_Domain_Value: M_MAMMAL

　　Enumerated_Domain_Value_Definition: Marine Mammals

　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

　Enumerated_Domain:

　　Enumerated_Domain_Value: REPTILE

　　Enumerated_Domain_Value_Definition: Reptiles and Amphibians

　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

　Enumerated_Domain:

　　Enumerated_Domain_Value: T_MAMMAL

　　Enumerated_Domain_Value_Definition: Terrestrial Mammals

　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.
  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: Research Planning, Inc.
  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: Research Planning, Inc.
  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: Research Planning, Inc.

  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: Research Planning, Inc.

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: Research Planning, Inc.

  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: Research Planning, Inc.

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: Research Planning, Inc.

  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: Research Planning, Inc.

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: Research Planning, Inc.

  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: Research Planning, Inc.

Distribution_Information:
    Distributor:
        Contact_Information:
            Contact_Person_Primary:
                Contact_Person: John Kaperick
                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) 526-6400
            Contact_Facsimile_Telephone: (206) 526-6329
    Resource_Description: ESI Atlas for Virginia
    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, and will offer a replacement copy of the product when the product is determined unreadable by computer-input peripherals, or when the physical medium is delivered in damaged condition.
    Custom_Order_Process:
        Contact NOAA for distribution options (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, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI_Viewer product are also included on the distribution CDs for ease of use of the ESI data. 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: 200512
    Metadata_Review_Date: 200512
    Metadata_Contact:
        Contact_Information:
            Contact_Person_Primary:
                Contact_Person: Jill Petersen
                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: Jill.Petersen@noaa.gov
Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998

Generated by mp version 2.8.21 on Wed Dec 07 16:31:50 2005

Virginia ESI: REPTILES (Reptile Polygons)

Metadata also available as - [Parseable text] - [SGML]

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:*
>>>   National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
>>>   *Publication_Date:* 200512
>>>   *Title:* Virginia ESI: REPTILES (Reptile Polygons)
>>>   *Edition:* 2
>>>   *Geospatial_Data_Presentation_Form:* Vector digital data
>>>   *Series_Information:*
>>>>   *Series_Name:* None
>>>>   *Issue_Identification:* Virginia
>>>   *Publication_Information:*
>>>>   *Publication_Place:* Seattle, Washington
>>>>   *Publisher:*
>>>>   National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.
>>>   *Other_Citation_Details:*
>>>   Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
>   *Description:*
>>   *Abstract:*
>>>   This data set contains sensitive biological resource data for sea turtles and estuarine turtles in Virginia. Vector polygons in this data set represent turtle distribution and nesting 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 Environmental Sensitivity

Index (ESI) data for Virginia. 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 REPTPT (Reptile Points) data layer, part of the larger Virginia ESI database, for additional reptile 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:

Single_Date/Time:

Calendar_Date: 2004

Currentness_Reference:

The biological data were compiled during 2004-2005. The currentness date for the data is 2004 and is documented in the Lineage section.

Status:

Progress: Complete

Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -77.50000

East_Bounding_Coordinate: -75.12500

North_Bounding_Coordinate: 38.87500

South_Bounding_Coordinate: 36.50000

Keywords:

Theme:

Theme_Keyword_Thesaurus: None

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

Place:

Place_Keyword_Thesaurus: None

Place_Keyword: Virginia

Access_Constraints: None

Use_Constraints:

DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Besides the above warning, 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:* datafig.jpg
>
> *Browse_Graphic_File_Description:*
>
> > Depicts the relationships between spatial data layers and attribute data tables for the Virginia 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, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.

Native_Data_Set_Environment:

> The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.3) and SQL SERVER(r) (version 7.0). The hardware configuration is PC's with Windows Operating System (NT4.0/2000).
>
> The Spatial_Data_Organization Information section refers only to the source files in the ARC export format. The following files are included in that data set: birds.e00, esi.e00, fish.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, reptpt.e00, socecon.e00, t_mammal.e00, wetlands.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

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. A final review is made by the GIS manager, where the data are written to CD-ROM and the metadata are written.
> >
> > 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 and available hardcopy reports on turtle distribution. See also the REPTPT (Reptile Points) data layer, part of the larger Virginia ESI database, for additional reptile information. These data do not necessarily represent all reptile occurrences in Virginia. 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.
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. Most of the spatial components of the biological data layers are 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 1:24,000. 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. See the Lineage and Process_Description sections for more information on the original data source and how these data were integrated or manipulated to create the final data set. 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.
Lineage:
    Source_Information:
        Source_Citation:
            Citation_Information:
                Originator:
                    BOETTCHER, R. (VIRGINIA DEPARTMENT OF GAME AND INLAND FISHERIES [VDGIF], PAINTER)
                Publication_Date: 2004
                Title: DISTRIBUTION OF WILDLIFE ALONG THE EASTERN SHORE
                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: 2004
            Source_Currentness_Reference: DATE OF COMMUNICATION
        Source_Citation_Abbreviation: NONE
        Source_Contribution: REPTILES INFORMATION
    Source_Information:
        Source_Citation:
            Citation_Information:
                Originator:

DENMON, P. (U.S. FISH AND WILDLIFE SERVICE [USFWS], CAPE CHARLES)

Publication_Date: 2004

Title: SPECIES DISTRIBUTION AT FISHERMANS ISLAND NWR

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: 2004

Source_Currentness_Reference: DATE OF COMMUNICATION

Source_Citation_Abbreviation: NONE

Source_Contribution: REPTILES INFORMATION

Source_Information:

Source_Citation:

Citation_Information:

Originator: HARAMIS, G.M. (U.S. Geological Survey [USGS], LAUREL, MD)

Publication_Date: 2004

Title: DIAMONDBACK TERRAPIN DISTRIBUTION AND SEASONALITY

Geospatial_Data_Presentation_Form: HARDCOPY TEXT

Other_Citation_Details: UNPUBLISHED

Type_of_Source_Media: PAPER

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 2004

Source_Currentness_Reference: DATE OF COMMUNICATION

Source_Citation_Abbreviation: NONE

Source_Contribution: REPTILES INFORMATION

Source_Information:

Source_Citation:

Citation_Information:

Originator: MANSFIELD, K., VIRGINIA INSTITUTE OF MARINE SCIENCE (VIMS)

Publication_Date: 2004

Title: EXPERT KNOWLEDGE OF SEA TURTLES

Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE

Other_Citation_Details: N/A

Type_of_Source_Media: PERSONAL COMMUNICATION

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 2004

Source_Currentness_Reference: DATE OF COMMUNICATION

Source_Citation_Abbreviation: NONE

Source_Contribution: REPTILES INFORMATION

Source_Information:

Source_Citation:

Citation_Information:
    Originator: T. PENN, USFWS, CHINCOTEAGUE ISLAND
    Publication_Date: 2004
    Title: DISTRIBUTION OF CHINCOTEAGUE NATIONAL WILDLIFE
    REFUGE SPECIES
    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: 2004
    Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: REPTILES INFORMATION
Process_Step:
    Process_Description:
        Two main sources of data were used to depict reptile distribution for this data layer:
        (1) personal interviews with resource experts from the Virginia Institute of Marine
        Science (VIMS), Virginia Department of Game and Inland Fisheries (VDGIF), U.S.
        Fish and Wildlife Service (USFWS), and U.S. Geological Survey (USGS); and (2)
        numerous published and unpublished reports.

        Resource experts provided concentration and seasonality information.

        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 a biology data layer: (1) information
        gathered during initial interviews and from hardcopy sources are compiled onto U.S.
        Geological Survey 1:24,000 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 compiled
        ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following
        the delivery of draft maps to the participating resource experts, a second set of
        interviews is conducted to review the maps. 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.

    Process_Date: 200505
    Process_Contact:
        Contact_Information:
            Contact_Organization_Primary:
                Contact_Organization: NOAA, Office of Response and Restoration
                Contact_Person: Jill Petersen
            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: Jill.Petersen@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: 3393
    SDTS_Terms_Description:
      SDTS_Point_and_Vector_Object_Type: Area point
      Point_and_Vector_Object_Count: 3393
    SDTS_Terms_Description:
      SDTS_Point_and_Vector_Object_Type: Complete chain
      Point_and_Vector_Object_Count: 10234
    SDTS_Terms_Description:
      SDTS_Point_and_Vector_Object_Type: Link
      Point_and_Vector_Object_Count: 872479
    SDTS_Terms_Description:
      SDTS_Point_and_Vector_Object_Type: Node, planar graph
      Point_and_Vector_Object_Count: 8483

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 1927
      Ellipsoid_Name: Clark 1866
      Semi-major_Axis: 6378206.400000
      Denominator_of_Flattening_Ratio: 294.978698

Entity_and_Attribute_Information:
  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, 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 Virginia atlas, the number is 55), 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 below 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 described below 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 below, 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 below.

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 turtle distribution and nesting areas. 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: Research Planning, Inc.
  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 (55), 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:

Range_Domain_Minimum: 550600002
Range_Domain_Maximum: 550611429

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 polygons and do not contain information.

Attribute_Definition_Source: NOAA

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 55000827
Range_Domain_Maximum: 55000845

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. 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: Research Planning, Inc.

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: 55000001
Range_Domain_Maximum: 55000847

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 (55), 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:

Range_Domain_Minimum: 550100002
Range_Domain_Maximum: 553600012

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: Research Planning, Inc.

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: 055000001

Range_Domain_Maximum: 055000847

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: Research Planning, Inc.

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. No quantitative data were available for the REPTILE data set, so the field may contain a descriptive term such as "VERY HIGH". Descriptive terms were based on local resource expert opinion. If no concentration information was available from any source, the field is populated with "-".

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.
    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: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: BIRD
            Enumerated_Domain_Value_Definition: Birds
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: FISH
            Enumerated_Domain_Value_Definition: Fish
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: HABITAT
            Enumerated_Domain_Value_Definition: Habitats and Plants
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: INVERT
            Enumerated_Domain_Value_Definition: Invertebrates
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: M_MAMMAL
            Enumerated_Domain_Value_Definition: Marine Mammals
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: REPTILE
            Enumerated_Domain_Value_Definition: Reptiles and Amphibians
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: T_MAMMAL

Enumerated_Domain_Value_Definition: Terrestrial Mammals

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: BIRD
            Enumerated_Domain_Value_Definition: Birds
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: FISH
            Enumerated_Domain_Value_Definition: Fish
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: HABITAT
            Enumerated_Domain_Value_Definition: Habitats and Plants
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: INVERT
            Enumerated_Domain_Value_Definition: Invertebrates
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: M_MAMMAL
            Enumerated_Domain_Value_Definition: Marine Mammals
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: REPTILE
            Enumerated_Domain_Value_Definition: Reptiles and Amphibians
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: T_MAMMAL
            Enumerated_Domain_Value_Definition: Terrestrial Mammals
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
    Attribute_Label: SUBELEMENT
    Attribute_Definition: Element subgroup delineating a logical grouping of species.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: bivalve
            Enumerated_Domain_Value_Definition: Bivalve
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: crab
            Enumerated_Domain_Value_Definition: Crab
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: diadromous
            Enumerated_Domain_Value_Definition: Diadromous fish
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: diving
            Enumerated_Domain_Value_Definition: Diving bird
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: dolphin
            Enumerated_Domain_Value_Definition: Dolphin
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: e_nursery
            Enumerated_Domain_Value_Definition: Estuarine nursery fish
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: e_resident
            Enumerated_Domain_Value_Definition: Estuarine resident
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: freshwater
            Enumerated_Domain_Value_Definition: Freshwater fish
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: gastropod
            Enumerated_Domain_Value_Definition: Gastropod
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:

Enumerated_Domain_Value: gull_tern
Enumerated_Domain_Value_Definition: Gull or tern
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: insect
Enumerated_Domain_Value_Definition: Insect
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: m_benthic
Enumerated_Domain_Value_Definition: Marine benthic fish
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: m_pelagic
Enumerated_Domain_Value_Definition: Marine pelagic fish
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: passerine
Enumerated_Domain_Value_Definition: Passerine bird
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: pelagic
Enumerated_Domain_Value_Definition: Pelagic bird
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: pinniped
Enumerated_Domain_Value_Definition: Pinniped
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: plant
Enumerated_Domain_Value_Definition: Plant
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: raptor
Enumerated_Domain_Value_Definition: Raptor
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: sav
Enumerated_Domain_Value_Definition: Submerged aquatic vegetation
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: shorebird

          Enumerated_Domain_Value_Definition: Shorebird
          Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: sm_mammal
        Enumerated_Domain_Value_Definition: Small mammal
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: turtle
        Enumerated_Domain_Value_Definition: Turtle
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: upland
        Enumerated_Domain_Value_Definition: Upland habitat
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: wading
        Enumerated_Domain_Value_Definition: Wading bird
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: waterfowl
        Enumerated_Domain_Value_Definition: Waterfowl
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: wetland
        Enumerated_Domain_Value_Definition: Wetland
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: whale
        Enumerated_Domain_Value_Definition: Whale
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
    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: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: 0
        Enumerated_Domain_Value_Definition: Date unspecified
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
    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: Research Planning, Inc.
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: Research Planning, Inc.
    Attribute:
        Attribute_Label: ELEMENT
        Attribute_Definition: Major categories of biological data.
        Attribute_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: BIRD
                Enumerated_Domain_Value_Definition: Birds
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: FISH
                Enumerated_Domain_Value_Definition: Fish
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: HABITAT
                Enumerated_Domain_Value_Definition: Habitats and Plants
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: INVERT
  Enumerated_Domain_Value_Definition: Invertebrates
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: M_MAMMAL
  Enumerated_Domain_Value_Definition: Marine Mammals
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: REPTILE
  Enumerated_Domain_Value_Definition: Reptiles and Amphibians
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: T_MAMMAL
  Enumerated_Domain_Value_Definition: Terrestrial Mammals
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.
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: Research Planning, Inc.
Attribute_Domain_Values:
 Range_Domain:
  Range_Domain_Minimum: 1
  Range_Domain_Maximum: N

Attribute:
Attribute_Label: JAN
Attribute_Definition: January
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: X
  Enumerated_Domain_Value_Definition: Present in January
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
Attribute_Label: FEB

Attribute_Definition: February
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: X
  Enumerated_Domain_Value_Definition: Present in February
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
Attribute_Label: MAR
Attribute_Definition: March
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: X
  Enumerated_Domain_Value_Definition: Present in March
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
Attribute_Label: APR
Attribute_Definition: April
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: X
  Enumerated_Domain_Value_Definition: Present in April
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
Attribute_Label: MAY
Attribute_Definition: May
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: X
  Enumerated_Domain_Value_Definition: Present in May
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
Attribute_Label: JUN
Attribute_Definition: June
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: X
  Enumerated_Domain_Value_Definition: Present in June
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
Attribute_Label: JUL
Attribute_Definition: July
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: X
  Enumerated_Domain_Value_Definition: Present in July

> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:

> *Attribute_Label:* AUG
> *Attribute_Definition:* August
> *Attribute_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
>> *Enumerated_Domain:*
>>> *Enumerated_Domain_Value:* X
>>> *Enumerated_Domain_Value_Definition:* Present in August
>>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:

> *Attribute_Label:* SEP
> *Attribute_Definition:* September
> *Attribute_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
>> *Enumerated_Domain:*
>>> *Enumerated_Domain_Value:* X
>>> *Enumerated_Domain_Value_Definition:* Present in September
>>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:

> *Attribute_Label:* OCT
> *Attribute_Definition:* October
> *Attribute_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
>> *Enumerated_Domain:*
>>> *Enumerated_Domain_Value:* X
>>> *Enumerated_Domain_Value_Definition:* Present in October
>>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:

> *Attribute_Label:* NOV
> *Attribute_Definition:* November
> *Attribute_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
>> *Enumerated_Domain:*
>>> *Enumerated_Domain_Value:* X
>>> *Enumerated_Domain_Value_Definition:* Present in November
>>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:

> *Attribute_Label:* DEC
> *Attribute_Definition:* December
> *Attribute_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
>> *Enumerated_Domain:*
>>> *Enumerated_Domain_Value:* X
>>> *Enumerated_Domain_Value_Definition:* Present in December
>>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

    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: Research Planning, Inc.

        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: Research Planning, Inc.

    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: Research Planning, Inc.

        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 elements.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Y

Enumerated_Domain_Value_Definition: Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Y

Enumerated_Domain_Value_Definition: Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: Y

        Enumerated_Domain_Value_Definition: Life-history stage or activity present

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: Y

        Enumerated_Domain_Value_Definition: Life-history stage or activity present

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

> *Enumerated_Domain:*
>
> > *Enumerated_Domain_Value:* Y
> >
> > *Enumerated_Domain_Value_Definition:* Life-history stage or activity present
> >
> > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

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:* Research Planning, Inc.

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:* Research Planning, Inc.

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:* Research Planning, Inc.
>
> *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; and SOURCE_ID in the ESI and HYDRO data
> > > layers.
> >
> > *Attribute_Definition_Source:* Research Planning, Inc.
> >
> > *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:* Research Planning, Inc.
> >
> > *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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute:

Attribute_Label: TITLE

Attribute_Definition: Title of source material or data.

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: PUBLICATION

Attribute_Definition: Additional citation information.

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

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: Research Planning, Inc.

Attribute:

Attribute_Label: ELEMENT

Attribute_Definition: Major categories of biological data.

Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: BIRD
        Enumerated_Domain_Value_Definition: Birds
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: FISH
        Enumerated_Domain_Value_Definition: Fish
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: HABITAT
        Enumerated_Domain_Value_Definition: Habitats and Plants
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: INVERT
        Enumerated_Domain_Value_Definition: Invertebrates
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: M_MAMMAL
        Enumerated_Domain_Value_Definition: Marine Mammals
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: REPTILE
        Enumerated_Domain_Value_Definition: Reptiles and Amphibians
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: T_MAMMAL
        Enumerated_Domain_Value_Definition: Terrestrial Mammals
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
  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: Research Planning, Inc.
  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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.
 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: Research Planning, Inc.

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: Research Planning, Inc.
 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: Research Planning, Inc.

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: Research Planning, Inc.
 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: Research Planning, Inc.

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: Research Planning, Inc.
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: Research Planning, Inc.

Distribution_Information:
Distributor:
Contact_Information:
Contact_Person_Primary:
Contact_Person: John Kaperick
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) 526-6400
Contact_Facsimile_Telephone: (206) 526-6329
Resource_Description: ESI Atlas for Virginia
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, and will offer a replacement copy of the product when the product is determined unreadable by computer-input peripherals, or when the physical medium is delivered in damaged condition.
Custom_Order_Process:
Contact NOAA for distribution options (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, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI_Viewer product are also included on the distribution CDs for ease of use of the ESI data. 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: 200512
Metadata_Review_Date: 200512
Metadata_Contact:
Contact_Information:

Contact_Person_Primary:
 Contact_Person: Jill Petersen
 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: Jill.Petersen@noaa.gov
Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998

Generated by mp version 2.8.21 on Wed Dec 07 16:34:31 2005

Virginia ESI: REPTPT (Reptile Points)

Metadata also available as - [Parseable text] - [SGML]

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:
    National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
   Publication_Date: 200512
   Title: Virginia ESI: REPTPT (Reptile Points)
   Edition: 2
   Geospatial_Data_Presentation_Form: Vector digital data
   Series_Information:
    Series_Name: None
    Issue_Identification: Virginia
   Publication_Information:
    Publication_Place: Seattle, Washington
    Publisher:
     National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.
   Other_Citation_Details:
    Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
 Description:
  Abstract:
   This data set contains sensitive biological resource data for sea turtles in Virginia. Vector points in this data set represent nesting 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 Environmental Sensitivity Index (ESI) data for

Virginia. 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 REPTILES (Reptile Polygons) data layer, part of the larger Virginia ESI database, for additional reptile 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: 2002

Ending_Date: 2004

Currentness_Reference:

The biological data were compiled during 2004-2005. The currentness dates for the data range from 2002 to 2004 and are documented in the Lineage section.

Status:

Progress: Complete

Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -77.50000

East_Bounding_Coordinate: -75.12500

North_Bounding_Coordinate: 38.87500

South_Bounding_Coordinate: 36.50000

Keywords:

Theme:

Theme_Keyword_Thesaurus: None

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

Place:

Place_Keyword_Thesaurus: None

Place_Keyword: Virginia

Access_Constraints: None

Use_Constraints:

DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Besides the above warning, 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: datafig.jpg

    Browse_Graphic_File_Description:

        Depicts the relationships between spatial data layers and attribute data tables for the Virginia 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, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.3) and SQL SERVER(r) (version 7.0). The hardware configuration is PC's with Windows Operating System (NT4.0/2000).

The Spatial_Data_Organization Information section refers only to the source files in the ARC export format. The following files are included in that data set: birds.e00, esi.e00, fish.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, reptpt.e00, socecon.e00, t_mammal.e00, wetlands.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

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. A final review is made by the GIS manager, where the data are written to CD-ROM and the metadata are written. 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 and available hardcopy reports and digital data on turtle nesting sites. See also the REPTILES (Reptile Polygons) data layer, part of the larger Virginia ESI database, for additional reptile information. These data do not necessarily represent all reptile occurrences in Virginia. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 6, Loggerhead sea turtle, Caretta caretta.

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. Most of the spatial components of the biological data layers are 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 1:24,000. 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. See the Lineage and Process_Description sections for more information on the original data source and how these data were integrated or manipulated to create the final data set. 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.

Lineage:

    Source_Information:

        Source_Citation:

            Citation_Information:

                Originator:

                    BOETTCHER, R. (VIRGINIA DEPARTMENT OF GAME AND INLAND FISHERIES [VDGIF], PAINTER)

                Publication_Date: 2004

                Title: DISTRIBUTION OF WILDLIFE ALONG THE EASTERN SHORE

                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: 2004

            Source_Currentness_Reference: DATE OF COMMUNICATION

        Source_Citation_Abbreviation: NONE

        Source_Contribution: REPTILE INFORMATION

    Source_Information:

        Source_Citation:

            Citation_Information:

                Originator: BOETTCHER, R., VDGIF

                Publication_Date: 2004

Title: VIRGINIA SEA TURTLE NESTING SITES
Geospatial_Data_Presentation_Form: DIGITAL VECTOR DATA
Other_Citation_Details: N/A
Type_of_Source_Media: EMAIL
Source_Time_Period_of_Content:
    Time_Period_Information:
        Range_of_Dates/Times:
            Beginning_Date: 2002
            Ending_Date: 2003
    Source_Currentness_Reference: DATE OF SURVEY
Source_Citation_Abbreviation: NONE
Source_Contribution: REPTILE INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: MANSFIELD, K., VIRGINIA INSTITUTE OF MARINE SCIENCE (VIMS)
            Publication_Date: 2004
            Title: EXPERT KNOWLEDGE OF SEA TURTLES
            Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
            Other_Citation_Details: N/A
    Type_of_Source_Media: PERSONAL COMMUNICATION
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 2004
        Source_Currentness_Reference: DATE OF COMMUNICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: REPTILE INFORMATION
Process_Step:
    Process_Description:

Three main sources of data were used to depict the distribution of reptile nesting sites for this data layer: (1) digital data of nesting points from the Department of Game and Inland Fisheries (DGIF), (2) personal interviews with resource experts from DGIF, U.S. Fish and Wildlife Service (USFWS), and the Virginia Institute of Marine Science (VIMS), and (3) numerous published and unpublished reports.

Resource experts provided concentration and seasonality information.

The above digital and/or hardcopy sources were compiled by the project biologist to create the REPTPT (Reptile Points) data layer. Depending on the type of source data, three general approaches are used for compiling a biology data layer: (1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:24,000 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 compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews are conducted to review the maps. If necessary, edits to the REPTPT data layer are made based on the recommendations of the resource experts, and final

hardcopy maps and digital data are created.

Process_Date: 200505
Process_Contact:
    Contact_Information:
        Contact_Organization_Primary:
            Contact_Organization: NOAA, Office of Response and Restoration
            Contact_Person: Jill Petersen
        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: Jill.Petersen@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: Entity Point
            Point_and_Vector_Object_Count: 12

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 1927
            Ellipsoid_Name: Clark 1866
            Semi-major_Axis: 6378206.400000
            Denominator_of_Flattening_Ratio: 294.978698

Entity_and_Attribute_Information:
    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, REPTPT) 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 Virginia atlas, the number is 55), 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 below 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 described below 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 below, 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 below.

Detailed_Description:
    Entity_Type:
        Entity_Type_Label: REPTPT.PAT
        Entity_Type_Definition:
            The REPTPT.PAT table contains attribute information for the vector points in this data set representing nesting sites. 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: Research Planning, Inc.
    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 (55), element number (36; 30 because it is a point feature, plus 6, the element value for REPTILES), and record number.
        Attribute_Definition_Source: NOAA
        Attribute_Domain_Values:
            Range_Domain:

Range_Domain_Minimum: 553600001
Range_Domain_Maximum: 553600012

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: 55000835
Range_Domain_Maximum: 55000836

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. 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: Research Planning, Inc.

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: 55000001
Range_Domain_Maximum: 55000847

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 (55), element number
(36; 30 because it is a point feature, plus 6, the element value for REPTILES), 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: 550100002
Range_Domain_Maximum: 553600012

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: Research Planning, Inc.

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: 055000001

Range_Domain_Maximum: 055000847

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: Research Planning, Inc.

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. Each reptile point refers to one nest based on the digital survey data.

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.
　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: Research Planning, Inc.
　Attribute_Domain_Values:
　　　Enumerated_Domain:
　　　　　Enumerated_Domain_Value: BIRD
　　　　　Enumerated_Domain_Value_Definition: Birds
　　　　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
　Attribute_Domain_Values:
　　　Enumerated_Domain:
　　　　　Enumerated_Domain_Value: FISH
　　　　　Enumerated_Domain_Value_Definition: Fish
　　　　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
　Attribute_Domain_Values:
　　　Enumerated_Domain:
　　　　　Enumerated_Domain_Value: HABITAT
　　　　　Enumerated_Domain_Value_Definition: Habitats and Plants
　　　　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
　Attribute_Domain_Values:
　　　Enumerated_Domain:
　　　　　Enumerated_Domain_Value: INVERT
　　　　　Enumerated_Domain_Value_Definition: Invertebrates
　　　　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
　Attribute_Domain_Values:
　　　Enumerated_Domain:
　　　　　Enumerated_Domain_Value: M_MAMMAL
　　　　　Enumerated_Domain_Value_Definition: Marine Mammals
　　　　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
　Attribute_Domain_Values:
　　　Enumerated_Domain:
　　　　　Enumerated_Domain_Value: REPTILE
　　　　　Enumerated_Domain_Value_Definition: Reptiles and Amphibians
　　　　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
　Attribute_Domain_Values:
　　　Enumerated_Domain:
　　　　　Enumerated_Domain_Value: T_MAMMAL
　　　　　Enumerated_Domain_Value_Definition: Terrestrial Mammals

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.
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: Research Planning, Inc.
 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: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: BIRD
   Enumerated_Domain_Value_Definition: Birds
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: FISH
   Enumerated_Domain_Value_Definition: Fish
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: HABITAT
   Enumerated_Domain_Value_Definition: Habitats and Plants
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: INVERT
   Enumerated_Domain_Value_Definition: Invertebrates
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: M_MAMMAL
   Enumerated_Domain_Value_Definition: Marine Mammals
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: REPTILE
   Enumerated_Domain_Value_Definition: Reptiles and Amphibians
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: T_MAMMAL
   Enumerated_Domain_Value_Definition: Terrestrial Mammals
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:

Attribute_Label: SUBELEMENT
Attribute_Definition: Element subgroup delineating a logical grouping of species.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: bivalve
        Enumerated_Domain_Value_Definition: Bivalve
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: crab
        Enumerated_Domain_Value_Definition: Crab
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: diadromous
        Enumerated_Domain_Value_Definition: Diadromous fish
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: diving
        Enumerated_Domain_Value_Definition: Diving bird
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: dolphin
        Enumerated_Domain_Value_Definition: Dolphin
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: e_nursery
        Enumerated_Domain_Value_Definition: Estuarine nursery fish
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: e_resident
        Enumerated_Domain_Value_Definition: Estuarine resident
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: freshwater
        Enumerated_Domain_Value_Definition: Freshwater fish
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: gastropod
        Enumerated_Domain_Value_Definition: Gastropod
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: gull_tern

Enumerated_Domain_Value_Definition: Gull or tern
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: insect
Enumerated_Domain_Value_Definition: Insect
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: m_benthic
Enumerated_Domain_Value_Definition: Marine benthic fish
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: m_pelagic
Enumerated_Domain_Value_Definition: Marine pelagic fish
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: passerine
Enumerated_Domain_Value_Definition: Passerine bird
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: pelagic
Enumerated_Domain_Value_Definition: Pelagic bird
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: pinniped
Enumerated_Domain_Value_Definition: Pinniped
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: plant
Enumerated_Domain_Value_Definition: Plant
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: raptor
Enumerated_Domain_Value_Definition: Raptor
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: sav
Enumerated_Domain_Value_Definition: Submerged aquatic vegetation
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: shorebird
Enumerated_Domain_Value_Definition: Shorebird

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: sm_mammal
        Enumerated_Domain_Value_Definition: Small mammal
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: turtle
        Enumerated_Domain_Value_Definition: Turtle
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: upland
        Enumerated_Domain_Value_Definition: Upland habitat
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: wading
        Enumerated_Domain_Value_Definition: Wading bird
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: waterfowl
        Enumerated_Domain_Value_Definition: Waterfowl
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: wetland
        Enumerated_Domain_Value_Definition: Wetland
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: whale
        Enumerated_Domain_Value_Definition: Whale
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 0
Enumerated_Domain_Value_Definition: Date unspecified
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
Attribute:
Attribute_Label: ELEMENT
Attribute_Definition: Major categories of biological data.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: BIRD
Enumerated_Domain_Value_Definition: Birds
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: FISH
Enumerated_Domain_Value_Definition: Fish
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: HABITAT
Enumerated_Domain_Value_Definition: Habitats and Plants
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:
 Enumerated_Domain_Value: INVERT
 Enumerated_Domain_Value_Definition: Invertebrates
 Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: M_MAMMAL
  Enumerated_Domain_Value_Definition: Marine Mammals
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: REPTILE
  Enumerated_Domain_Value_Definition: Reptiles and Amphibians
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: T_MAMMAL
  Enumerated_Domain_Value_Definition: Terrestrial Mammals
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.
 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: Research Planning, Inc.
 Attribute_Domain_Values:
  Range_Domain:
   Range_Domain_Minimum: 1
   Range_Domain_Maximum: N

Attribute:
 Attribute_Label: JAN
 Attribute_Definition: January
 Attribute_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: X
   Enumerated_Domain_Value_Definition: Present in January
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
 Attribute_Label: FEB
 Attribute_Definition: February

Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: X
  Enumerated_Domain_Value_Definition: Present in February
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: MAR
Attribute_Definition: March
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: X
  Enumerated_Domain_Value_Definition: Present in March
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: APR
Attribute_Definition: April
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: X
  Enumerated_Domain_Value_Definition: Present in April
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: MAY
Attribute_Definition: May
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: X
  Enumerated_Domain_Value_Definition: Present in May
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: JUN
Attribute_Definition: June
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: X
  Enumerated_Domain_Value_Definition: Present in June
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: JUL
Attribute_Definition: July
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: X
  Enumerated_Domain_Value_Definition: Present in July
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
    Attribute_Label: AUG
    Attribute_Definition: August
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: X
            Enumerated_Domain_Value_Definition: Present in August
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
    Attribute_Label: SEP
    Attribute_Definition: September
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: X
            Enumerated_Domain_Value_Definition: Present in September
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
    Attribute_Label: OCT
    Attribute_Definition: October
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: X
            Enumerated_Domain_Value_Definition: Present in October
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
    Attribute_Label: NOV
    Attribute_Definition: November
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: X
            Enumerated_Domain_Value_Definition: Present in November
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
    Attribute_Label: DEC
    Attribute_Definition: December
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: X
            Enumerated_Domain_Value_Definition: Present in December
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

    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: Research Planning, Inc.

        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: Research Planning, Inc.

    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: Research Planning, Inc.

        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 elements.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

　　Enumerated_Domain:

　　　　Enumerated_Domain_Value: Y

　　　　Enumerated_Domain_Value_Definition: Life-history stage or activity present

　　　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

　　Enumerated_Domain:

　　　　Enumerated_Domain_Value: Y

　　　　Enumerated_Domain_Value_Definition: Life-history stage or activity present

　　　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: Y

        Enumerated_Domain_Value_Definition: Life-history stage or activity present

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: Y

            Enumerated_Domain_Value_Definition: Life-history stage or activity present

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    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: Research Planning, Inc.

    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: Research Planning, Inc.

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: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: Y
    Enumerated_Domain_Value_Definition: Life-history stage or activity present
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.

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: Research Planning, Inc.
  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; and SOURCE_ID in the ESI and HYDRO data
      layers.
    Attribute_Definition_Source: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.
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: Research Planning, Inc.
Attribute:
    Attribute_Label: TITLE
    Attribute_Definition: Title of source material or data.
    Attribute_Definition_Source: Research Planning, Inc.
    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: Research Planning, Inc.
    Attribute_Domain_Values:
        Unrepresentable_Domain: Acceptable values change from atlas to atlas.
Attribute:
    Attribute_Label: PUBLICATION
    Attribute_Definition: Additional citation information.
    Attribute_Definition_Source: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.
    Attribute_Domain_Values:
        Unrepresentable_Domain: Acceptable values change from atlas to atlas.
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: Research Planning, Inc.
Attribute:
    Attribute_Label: ELEMENT
    Attribute_Definition: Major categories of biological data.
    Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: BIRD
        Enumerated_Domain_Value_Definition: Birds
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: FISH
        Enumerated_Domain_Value_Definition: Fish
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: HABITAT
        Enumerated_Domain_Value_Definition: Habitats and Plants
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: INVERT
        Enumerated_Domain_Value_Definition: Invertebrates
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: M_MAMMAL
        Enumerated_Domain_Value_Definition: Marine Mammals
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: REPTILE
        Enumerated_Domain_Value_Definition: Reptiles and Amphibians
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: T_MAMMAL
        Enumerated_Domain_Value_Definition: Terrestrial Mammals
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.

Distribution_Information:
Distributor:
Contact_Information:
Contact_Person_Primary:
Contact_Person: John Kaperick
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) 526-6400
Contact_Facsimile_Telephone: (206) 526-6329
Resource_Description: ESI Atlas for Virginia
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, and
will offer a replacement copy of the product when the product is determined unreadable by
computer-input peripherals, or when the physical medium is delivered in damaged condition.
Custom_Order_Process:
Contact NOAA for distribution options (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, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI
project and ESI_Viewer product are also included on the distribution CDs for ease of use of the
ESI data. 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: 200512
Metadata_Review_Date: 200512
Metadata_Contact:
Contact_Information:
Contact_Person_Primary:

Contact_Person: Jill Petersen
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: Jill.Petersen@noaa.gov
Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998

Generated by mp version 2.8.21 on Wed Dec 07 16:36:20 2005

Virginia ESI: M_MAMMAL (Marine Mammal Polygons)

Metadata also available as - [Parseable text] - [SGML]

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:
                                National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
                        Publication_Date: 200512
                        Title: Virginia ESI: M_MAMMAL (Marine Mammal Polygons)
                        Edition: 2
                        Geospatial_Data_Presentation_Form: Vector digital data
                        Series_Information:
                                Series_Name: None
                                Issue_Identification: Virginia
                        Publication_Information:
                                Publication_Place: Seattle, Washington
                                Publisher:
                                        National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.
                        Other_Citation_Details:
                                Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
        Description:
                Abstract:
                        This data set contains sensitive biological resource data for dolphin, seals, whales, and porpoise in Virginia. Vector polygons in this data set represent marine mammal distribution, haul-out sites, and calving 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 Environmental Sensitivity Index (ESI) data for Virginia. 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: 1989
Ending_Date: 2004
Currentness_Reference:
The biological data were compiled during 2004 - 2005. The currentness dates for the data range from 1989 to 2004 and are documented in the Lineage section.

Status:
Progress: Complete
Maintenance_and_Update_Frequency: None Scheduled
Spatial_Domain:
Bounding_Coordinates:
West_Bounding_Coordinate: -77.50000
East_Bounding_Coordinate: -75.12500
North_Bounding_Coordinate: 38.87500
South_Bounding_Coordinate: 36.50000
Keywords:
Theme:
Theme_Keyword_Thesaurus: None
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
Place:
Place_Keyword_Thesaurus: None
Place_Keyword: Virginia
Access_Constraints: None
Use_Constraints:
DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Besides the above warning, 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:* datafig.jpg
>> *Browse_Graphic_File_Description:*
>>> Depicts the relationships between spatial data layers and attribute data tables for the Virginia 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, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.

Native_Data_Set_Environment:
>> The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.3) and SQL SERVER(r) (version 7.0). The hardware configuration is PC's with Windows Operating System (NT4.0/2000).

>> The Spatial_Data_Organization Information section refers only to the source files in the ARC export format. The following files are included in that data set: birds.e00, esi.e00, fish.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, reptpt.e00, socecon.e00, t_mammal.e00, wetlands.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

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. A final review is made by the GIS manager, where the data are written to CD-ROM and the metadata are written.

>> 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 and available digital and hardcopy reports on marine mammal distribution. These data do not necessarily represent all marine mammal occurrences in Virginia. 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; 13, Humpback whale, Megaptera novaeangliae; 17, Bottlenose dolphin, Tursiops truncatus; 60, Common dolphin, Delphinus delphis.

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. Most of the spatial components of the biological data layers are 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 1:24,000. 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. See the Lineage and Process_Description sections for more information on the original data source and how these data were integrated or manipulated to create the final data set. 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.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator:

BOETTCHER, R. (VIRGINIA DEPARTMENT OF GAME AND INLAND FISHERIES [VDGIF], PAINTER)

Publication_Date: 2004

Title: DISTRIBUTION OF WILDLIFE ALONG THE EASTERN SHORE

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: 2004

Source_Currentness_Reference: DATE OF COMMUNICATION

Source_Citation_Abbreviation: NONE

Source_Contribution: M_MAMMAL INFORMATION

Source_Information:

Source_Citation:
    Citation_Information:
        Originator:
            DENMON, P. (U.S. FISH AND WILDLIFE SERVICE [USFWS],
            CAPE CHARLES)
        Publication_Date: 2004
        Title: SPECIES DISTRIBUTION AT FISHERMANS ISLAND NWR
        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: 2004
    Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: M_MAMMAL INFORMATION
Source_Information:
Source_Citation:
    Citation_Information:
        Originator: MORGAN, L.W., J.A.MUSICK, C.W.POTTER
        Publication_Date: 2002
        Title:
            TEMPORAL AND GEOG. OCCUR. OF CETACEAN STRANDINGS
            AND MANATEE SIGHTINGS IN VA
        Geospatial_Data_Presentation_Form: HARDCOPY TEXT
        Other_Citation_Details: JOURNAL OF NORTH CAROLINA ACADEMY
        OF SCIENCE, VOL 118 (1)
Type_of_Source_Media: PAPER
Source_Time_Period_of_Content:
    Time_Period_Information:
        Range_of_Dates/Times:
            Beginning_Date: 1983
            Ending_Date: 1989
    Source_Currentness_Reference: DATE OF PUBLICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: M_MAMMAL INFORMATION
Source_Information:
Source_Citation:
    Citation_Information:
        Originator: MUSICK, J., VIRGINIA INSTITUTE OF MARINE SCIENCE
        [VIMS]
        Publication_Date: 2004
        Title: DISTRIBUTION OF FISH AND MARINE MAMMALS OF
        VIRGINIA
        Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
        Other_Citation_Details: N/A
Type_of_Source_Media: PERSONAL COMMUNICATION
Source_Time_Period_of_Content:
    Time_Period_Information:
        Single_Date/Time:

    Calendar_Date: 2004
   Source_Currentness_Reference: DATE OF COMMUNICATION
  Source_Citation_Abbreviation: NONE
  Source_Contribution: M_MAMMAL INFORMATION
Source_Information:
  Source_Citation:
   Citation_Information:
    Originator: SWINGLE, W.M. AND S. BARCO
    Publication_Date: 2004
    Title: VMSM STRANDING PROGRAM 2003 GRANT REPORT
    Geospatial_Data_Presentation_Form: HARDCOPY TEXT
    Other_Citation_Details: VA MARINE SCIENCE MUSEUM [VMSM],
    VIRGINIA BEACH, VA
  Type_of_Source_Media: CD-ROM
  Source_Time_Period_of_Content:
   Time_Period_Information:
    Single_Date/Time:
     Calendar_Date: 2003
   Source_Currentness_Reference: DATE OF SURVEY
  Source_Citation_Abbreviation: NONE
  Source_Contribution: M_MAMMAL INFORMATION
Source_Information:
  Source_Citation:
   Citation_Information:
    Originator: T. PENN, USFWS, CHINCOTEAGUE ISLAND
    Publication_Date: 2004
    Title: DISTRIBUTION OF CHINCOTEAGUE NATIONAL WILDLIFE
    REFUGE SPECIES
    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: 2004
   Source_Currentness_Reference: DATE OF COMMUNICATION
  Source_Citation_Abbreviation: NONE
  Source_Contribution: M_MAMMAL INFORMATION
Process_Step:
  Process_Description:
   Two main sources of data were used to depict distributions of marine mammals for
   this data layer: (1) personal interviews with resource experts from the Virginia
   Institute of Marine Science (VIMS), U.S. Fish and Wildlife Service (USFWS), and
   the Virginia Marine Science Museum (VMSM) and (2) numerous published and
   unpublished reports.

   Resource experts provided concentration and seasonality information.

   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 a biology data layer: (1) information

gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:24,000 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 compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. 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: 200505
Process_Contact:
    Contact_Information:
        Contact_Organization_Primary:
            Contact_Organization: NOAA, Office of Response and Restoration
            Contact_Person: Jill Petersen
        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: Jill.Petersen@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: 1620
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Area point
            Point_and_Vector_Object_Count: 1620
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Complete chain
            Point_and_Vector_Object_Count: 3946
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Link
            Point_and_Vector_Object_Count: 1042006
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Node, planar graph
            Point_and_Vector_Object_Count: 3918

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 1927
    Ellipsoid_Name: Clark 1866
    Semi-major_Axis: 6378206.400000
    Denominator_of_Flattening_Ratio: 294.978698

Entity_and_Attribute_Information:
    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 Virginia atlas, the number is 55), 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 below 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 described below 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 below, 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 below.

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, haul-out sites, and calving sites. 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:* Research Planning, Inc.

> *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 (55), 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:* 550400002

> > > > *Range_Domain_Maximum:* 550401437

> *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 polygons and do not contain information.

> > *Attribute_Definition_Source:* NOAA

> > *Attribute_Domain_Values:*

> > > *Range_Domain:*

> > > > *Range_Domain_Minimum:* 55000819

> > > > *Range_Domain_Maximum:* 55000826

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. 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:* Research Planning, Inc.

> *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: 55000001

Range_Domain_Maximum: 55000847

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 (55), 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: 550100002

Range_Domain_Maximum: 553600012

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: Research Planning, Inc.

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: 055000001

Range_Domain_Maximum: 055000847

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: Research Planning, Inc.

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. No quantitative count data were available for the M_MAMMAL data set, so the field may contain a descriptive term such as "HIGH". Descriptive terms were based on local resource expert opinion. If no concentration information was available from any source, the field is populated with "-".

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: BIRD

Enumerated_Domain_Value_Definition: Birds

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: FISH

Enumerated_Domain_Value_Definition: Fish

              Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
     Attribute_Domain_Values:
       Enumerated_Domain:
           Enumerated_Domain_Value: HABITAT
           Enumerated_Domain_Value_Definition: Habitats and Plants
           Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
     Attribute_Domain_Values:
       Enumerated_Domain:
           Enumerated_Domain_Value: INVERT
           Enumerated_Domain_Value_Definition: Invertebrates
           Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
     Attribute_Domain_Values:
       Enumerated_Domain:
           Enumerated_Domain_Value: M_MAMMAL
           Enumerated_Domain_Value_Definition: Marine Mammals
           Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
     Attribute_Domain_Values:
       Enumerated_Domain:
           Enumerated_Domain_Value: REPTILE
           Enumerated_Domain_Value_Definition: Reptiles and Amphibians
           Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
     Attribute_Domain_Values:
       Enumerated_Domain:
           Enumerated_Domain_Value: T_MAMMAL
           Enumerated_Domain_Value_Definition: Terrestrial Mammals
           Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
     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: Research Planning, Inc.
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: Research Planning, Inc.
     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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: BIRD

Enumerated_Domain_Value_Definition: Birds

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: FISH

Enumerated_Domain_Value_Definition: Fish

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:
　Enumerated_Domain_Value: HABITAT
　Enumerated_Domain_Value_Definition: Habitats and Plants
　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: INVERT
　　Enumerated_Domain_Value_Definition: Invertebrates
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: M_MAMMAL
　　Enumerated_Domain_Value_Definition: Marine Mammals
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: REPTILE
　　Enumerated_Domain_Value_Definition: Reptiles and Amphibians
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: T_MAMMAL
　　Enumerated_Domain_Value_Definition: Terrestrial Mammals
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
　Attribute_Label: SUBELEMENT
　Attribute_Definition: Element subgroup delineating a logical grouping of species.
　Attribute_Definition_Source: Research Planning, Inc.
　Attribute_Domain_Values:
　　Enumerated_Domain:
　　　Enumerated_Domain_Value: bivalve
　　　Enumerated_Domain_Value_Definition: Bivalve
　　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
　Attribute_Domain_Values:
　　Enumerated_Domain:
　　　Enumerated_Domain_Value: crab
　　　Enumerated_Domain_Value_Definition: Crab
　　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
　Attribute_Domain_Values:
　　Enumerated_Domain:
　　　Enumerated_Domain_Value: diadromous
　　　Enumerated_Domain_Value_Definition: Diadromous fish
　　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
　Attribute_Domain_Values:
　　Enumerated_Domain:
　　　Enumerated_Domain_Value: diving
　　　Enumerated_Domain_Value_Definition: Diving bird
　　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
　Attribute_Domain_Values:
　　Enumerated_Domain:
　　　Enumerated_Domain_Value: dolphin

Enumerated_Domain_Value_Definition: Dolphin
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: e_nursery
    Enumerated_Domain_Value_Definition: Estuarine nursery fish
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: e_resident
    Enumerated_Domain_Value_Definition: Estuarine resident
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: freshwater
    Enumerated_Domain_Value_Definition: Freshwater fish
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: gastropod
    Enumerated_Domain_Value_Definition: Gastropod
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: gull_tern
    Enumerated_Domain_Value_Definition: Gull or tern
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: insect
    Enumerated_Domain_Value_Definition: Insect
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: m_benthic
    Enumerated_Domain_Value_Definition: Marine benthic fish
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: m_pelagic
    Enumerated_Domain_Value_Definition: Marine pelagic fish
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: passerine
    Enumerated_Domain_Value_Definition: Passerine bird
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: pelagic
    Enumerated_Domain_Value_Definition: Pelagic bird

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: pinniped
  Enumerated_Domain_Value_Definition: Pinniped
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: plant
  Enumerated_Domain_Value_Definition: Plant
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: raptor
  Enumerated_Domain_Value_Definition: Raptor
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: sav
  Enumerated_Domain_Value_Definition: Submerged aquatic vegetation
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: shorebird
  Enumerated_Domain_Value_Definition: Shorebird
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: sm_mammal
  Enumerated_Domain_Value_Definition: Small mammal
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: turtle
  Enumerated_Domain_Value_Definition: Turtle
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: upland
  Enumerated_Domain_Value_Definition: Upland habitat
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: wading
  Enumerated_Domain_Value_Definition: Wading bird
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: waterfowl
  Enumerated_Domain_Value_Definition: Waterfowl
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: wetland
        Enumerated_Domain_Value_Definition: Wetland
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: whale
        Enumerated_Domain_Value_Definition: Whale
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.
    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: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: 0
            Enumerated_Domain_Value_Definition: Date unspecified
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.
    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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute:

Attribute_Label: ELEMENT

Attribute_Definition: Major categories of biological data.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: BIRD

        Enumerated_Domain_Value_Definition: Birds

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: FISH

        Enumerated_Domain_Value_Definition: Fish

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: HABITAT

        Enumerated_Domain_Value_Definition: Habitats and Plants

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: INVERT

        Enumerated_Domain_Value_Definition: Invertebrates

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: M_MAMMAL

        Enumerated_Domain_Value_Definition: Marine Mammals

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: REPTILE

        Enumerated_Domain_Value_Definition: Reptiles and Amphibians

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: T_MAMMAL

        Enumerated_Domain_Value_Definition: Terrestrial Mammals

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.
Attribute_Domain_Values:
 Range_Domain:
  Range_Domain_Minimum: 1
  Range_Domain_Maximum: N

Attribute:

Attribute_Label: JAN
Attribute_Definition: January
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: X
  Enumerated_Domain_Value_Definition: Present in January
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: FEB
Attribute_Definition: February
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: X
  Enumerated_Domain_Value_Definition: Present in February
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: MAR
Attribute_Definition: March
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: X
  Enumerated_Domain_Value_Definition: Present in March
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: APR
Attribute_Definition: April
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: X
  Enumerated_Domain_Value_Definition: Present in April
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: MAY

Attribute_Definition: May
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: X
        Enumerated_Domain_Value_Definition: Present in May
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
Attribute_Label: JUN
Attribute_Definition: June
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: X
        Enumerated_Domain_Value_Definition: Present in June
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
Attribute_Label: JUL
Attribute_Definition: July
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: X
        Enumerated_Domain_Value_Definition: Present in July
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
Attribute_Label: AUG
Attribute_Definition: August
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: X
        Enumerated_Domain_Value_Definition: Present in August
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
Attribute_Label: SEP
Attribute_Definition: September
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: X
        Enumerated_Domain_Value_Definition: Present in September
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
Attribute_Label: OCT
Attribute_Definition: October
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: X
        Enumerated_Domain_Value_Definition: Present in October

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

    Attribute_Label: NOV

    Attribute_Definition: November

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: X

            Enumerated_Domain_Value_Definition: Present in November

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

    Attribute_Label: DEC

    Attribute_Definition: December

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: X

            Enumerated_Domain_Value_Definition: Present in December

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

    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: Research Planning, Inc.

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: Research Planning, Inc.

    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: Research Planning, Inc.

        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: Research Planning, Inc.

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: Research Planning, Inc.

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 elements.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Y

Enumerated_Domain_Value_Definition: Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: Y

        Enumerated_Domain_Value_Definition: Life-history stage or activity present

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: Y

        Enumerated_Domain_Value_Definition: Life-history stage or activity present

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: Y
        Enumerated_Domain_Value_Definition: Life-history stage or activity present
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.

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: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: Y
            Enumerated_Domain_Value_Definition: Life-history stage or activity present
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.

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: Research Planning, Inc.

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; and SOURCE_ID in the ESI and HYDRO data layers.

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute:

Attribute_Label: TITLE

Attribute_Definition: Title of source material or data.

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: PUBLICATION

Attribute_Definition: Additional citation information.

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.
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: Research Planning, Inc.
Attribute_Domain_Values:
 Unrepresentable_Domain: Acceptable values change from atlas to atlas.
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: Research Planning, Inc.
Attribute:
Attribute_Label: ELEMENT
Attribute_Definition: Major categories of biological data.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: BIRD
  Enumerated_Domain_Value_Definition: Birds
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: FISH
  Enumerated_Domain_Value_Definition: Fish
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: HABITAT
  Enumerated_Domain_Value_Definition: Habitats and Plants
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: INVERT
  Enumerated_Domain_Value_Definition: Invertebrates
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: M_MAMMAL
  Enumerated_Domain_Value_Definition: Marine Mammals
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:
    Enumerated_Domain_Value: REPTILE
    Enumerated_Domain_Value_Definition: Reptiles and Amphibians
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: T_MAMMAL
        Enumerated_Domain_Value_Definition: Terrestrial Mammals
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.
        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: Research Planning, Inc.
        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: Research Planning, Inc.
        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: Research Planning, Inc.
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: Research Planning, Inc.

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:* Research Planning, Inc.

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:* Research Planning, Inc.
> *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:* Research Planning, Inc.

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:* Research Planning, Inc.
> *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:* Research Planning, Inc.

Distribution_Information:
> *Distributor:*
>> *Contact_Information:*
>>> *Contact_Person_Primary:*
>>>> *Contact_Person:* John Kaperick
>>>> *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) 526-6400

Contact_Facsimile_Telephone: (206) 526-6329
Resource_Description: ESI Atlas for Virginia
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, and will offer a replacement copy of the product when the product is determined unreadable by computer-input peripherals, or when the physical medium is delivered in damaged condition.

Custom_Order_Process:

>Contact NOAA for distribution options (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, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI_Viewer product are also included on the distribution CDs for ease of use of the ESI data. 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: 200512
    Metadata_Review_Date: 200512
    Metadata_Contact:
        Contact_Information:
            Contact_Person_Primary:
                Contact_Person: Jill Petersen
                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: Jill.Petersen@noaa.gov
    Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
    Metadata_Standard_Version: FGDC-STD-001-1998

Generated by mp version 2.8.21 on Wed Dec 07 16:39:37 2005

Virginia ESI: T_MAMMAL (Terrestrial Mammal Polygons)

Metadata also available as - [Parseable text] - [SGML]

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:
                National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
            Publication_Date: 200512
            Title: Virginia ESI: T_MAMMAL (Terrestrial Mammal Polygons)
            Edition: 2
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Virginia
            Publication_Information:
                Publication_Place: Seattle, Washington
                Publisher:
                National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.
            Other_Citation_Details:
                Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
    Description:
        Abstract:
            This data set contains sensitive biological resource data for the northern river otter in Virginia. 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 Environmental Sensitivity Index (ESI) data for Virginia. 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: 2004
Currentness_Reference:
The biological data were compiled during 2004-2005. The currentness date for the data is 2004 and is documented in the Lineage section.
Status:
Progress: Complete
Maintenance_and_Update_Frequency: None Scheduled
Spatial_Domain:
Bounding_Coordinates:
West_Bounding_Coordinate: -77.50000
East_Bounding_Coordinate: -75.12500
North_Bounding_Coordinate: 38.87500
South_Bounding_Coordinate: 36.50000
Keywords:
Theme:
Theme_Keyword_Thesaurus: None
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: Terrestrial Mammal
Place:
Place_Keyword_Thesaurus: None
Place_Keyword: Virginia
Access_Constraints: None
Use_Constraints:
DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Besides the above warning, 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: datafig.jpg

   Browse_Graphic_File_Description:

      Depicts the relationships between spatial data layers and attribute data tables for the Virginia 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, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.

Native_Data_Set_Environment:

   The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.3) and SQL SERVER(r) (version 7.0). The hardware configuration is PC's with Windows Operating System (NT4.0/2000).

   The Spatial_Data_Organization Information section refers only to the source files in the ARC export format. The following files are included in that data set: birds.e00, esi.e00, fish.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, reptpt.e00, socecon.e00, t_mammal.e00, wetlands.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

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. A final review is made by the GIS manager, where the data are written to CD-ROM and the metadata are written. 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 on terrestrial mammal concentration areas. These data do not necessarily represent all terrestrial mammal occurrences in Virginia. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 8, Northern river otter, Lutra canadensis.

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. Most of the spatial components of the biological data layers are 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 1:24,000. 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. See the Lineage and Process_Description sections for more information on the original data source and how these data were integrated or manipulated to create the final data set. 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.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator:

T. PENN, U.S. FISH AND WILDLIFE SERVICE (USFWS), CHINCOTEAGUE ISLAND

Publication_Date: 2004

Title: DISTRIBUTION OF CHINCOTEAGUE NATIONAL WILDLIFE REFUGE SPECIES

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: 2004

Source_Currentness_Reference: DATE OF COMMUNICATION

Source_Citation_Abbreviation: NONE

Source_Contribution: T_MAMMAL INFORMATION

Source_Information:

Source_Citation:

Citation_Information:

Originator: WITT, J. (WOODBRIDGE, VA)

Publication_Date: 2004

Title:
> SPECIES DISTRIBUTION AND SEASONALITY AT THE
> POTOMAC RIVER NWR COMPLEX
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:* 2004
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: T_MAMMAL INFORMATION
Process_Step:
Process_Description:

The main source of data used to depict terrestrial mammal distribution and seasonality for this data layer was personal interviews with resource experts from U.S. Fish and Wildlife Service (USFWS).

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 a biology data layer: (1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:24,000 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 compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. 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.

Process_Date: 200505
Process_Contact:
> *Contact_Information:*
> > *Contact_Organization_Primary:*
> > > *Contact_Organization:* NOAA, Office of Response and Restoration
> > > *Contact_Person:* Jill Petersen
> > *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:* Jill.Petersen@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: 81
    SDTS_Terms_Description:
        SDTS_Point_and_Vector_Object_Type: Area point
        Point_and_Vector_Object_Count: 81
    SDTS_Terms_Description:
        SDTS_Point_and_Vector_Object_Type: Complete chain
        Point_and_Vector_Object_Count: 152
    SDTS_Terms_Description:
        SDTS_Point_and_Vector_Object_Type: Link
        Point_and_Vector_Object_Count: 34435
    SDTS_Terms_Description:
        SDTS_Point_and_Vector_Object_Type: Node, planar graph
        Point_and_Vector_Object_Count: 152

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 1927
            Ellipsoid_Name: Clark 1866
            Semi-major_Axis: 6378206.400000
            Denominator_of_Flattening_Ratio: 294.978698

Entity_and_Attribute_Information:
    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 Virginia atlas, the number is 55), 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 below 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 described below 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 below, 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 below.

Detailed_Description:
    Entity_Type:
        Entity_Type_Label: T_MAMMAL.PAT
        Entity_Type_Definition:
            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. 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: Research Planning, Inc.
    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 (55), 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: 550900002
                Range_Domain_Maximum: 550900030
    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 polygons and do not contain information.

Attribute_Definition_Source: NOAA

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 55000846

Range_Domain_Maximum: 55000847

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. 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: Research Planning, Inc.

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: 55000001

Range_Domain_Maximum: 55000847

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 (55), 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: 550100002

Range_Domain_Maximum: 553600012

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: Research Planning, Inc.

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: 055000001

Range_Domain_Maximum: 055000847

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: Research Planning, Inc.

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. No concentration data were available for the T_MAMMAL data set, so the CONC field contains "-".

Attribute_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.
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: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: BIRD
   Enumerated_Domain_Value_Definition: Birds
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: FISH
   Enumerated_Domain_Value_Definition: Fish
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: HABITAT
   Enumerated_Domain_Value_Definition: Habitats and Plants
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: INVERT
   Enumerated_Domain_Value_Definition: Invertebrates
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: M_MAMMAL
   Enumerated_Domain_Value_Definition: Marine Mammals
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: REPTILE
   Enumerated_Domain_Value_Definition: Reptiles and Amphibians
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: T_MAMMAL
   Enumerated_Domain_Value_Definition: Terrestrial Mammals
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.
    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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.
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: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: BIRD
            Enumerated_Domain_Value_Definition: Birds
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: FISH
            Enumerated_Domain_Value_Definition: Fish
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: HABITAT
            Enumerated_Domain_Value_Definition: Habitats and Plants
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: INVERT
            Enumerated_Domain_Value_Definition: Invertebrates
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: M_MAMMAL
            Enumerated_Domain_Value_Definition: Marine Mammals
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: REPTILE
            Enumerated_Domain_Value_Definition: Reptiles and Amphibians
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: T_MAMMAL
            Enumerated_Domain_Value_Definition: Terrestrial Mammals
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
    Attribute_Label: SUBELEMENT
    Attribute_Definition: Element subgroup delineating a logical grouping of species.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: bivalve
            Enumerated_Domain_Value_Definition: Bivalve

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: crab
        Enumerated_Domain_Value_Definition: Crab
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: diadromous
        Enumerated_Domain_Value_Definition: Diadromous fish
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: diving
        Enumerated_Domain_Value_Definition: Diving bird
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: dolphin
        Enumerated_Domain_Value_Definition: Dolphin
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: e_nursery
        Enumerated_Domain_Value_Definition: Estuarine nursery fish
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: e_resident
        Enumerated_Domain_Value_Definition: Estuarine resident
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: freshwater
        Enumerated_Domain_Value_Definition: Freshwater fish
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: gastropod
        Enumerated_Domain_Value_Definition: Gastropod
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: gull_tern
        Enumerated_Domain_Value_Definition: Gull or tern
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: insect
        Enumerated_Domain_Value_Definition: Insect
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: m_benthic
        Enumerated_Domain_Value_Definition: Marine benthic fish
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: m_pelagic
        Enumerated_Domain_Value_Definition: Marine pelagic fish
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: passerine
        Enumerated_Domain_Value_Definition: Passerine bird
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: pelagic
        Enumerated_Domain_Value_Definition: Pelagic bird
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: pinniped
        Enumerated_Domain_Value_Definition: Pinniped
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: plant
        Enumerated_Domain_Value_Definition: Plant
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: raptor
        Enumerated_Domain_Value_Definition: Raptor
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: sav
        Enumerated_Domain_Value_Definition: Submerged aquatic vegetation
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: shorebird
        Enumerated_Domain_Value_Definition: Shorebird
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: sm_mammal
        Enumerated_Domain_Value_Definition: Small mammal
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:
        Enumerated_Domain_Value: turtle
        Enumerated_Domain_Value_Definition: Turtle
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: upland
        Enumerated_Domain_Value_Definition: Upland habitat
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: wading
        Enumerated_Domain_Value_Definition: Wading bird
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: waterfowl
        Enumerated_Domain_Value_Definition: Waterfowl
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: wetland
        Enumerated_Domain_Value_Definition: Wetland
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: whale
        Enumerated_Domain_Value_Definition: Whale
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
    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: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: 0
            Enumerated_Domain_Value_Definition: Date unspecified

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute:

Attribute_Label: ELEMENT

Attribute_Definition: Major categories of biological data.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: BIRD

Enumerated_Domain_Value_Definition: Birds

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: FISH

Enumerated_Domain_Value_Definition: Fish

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: HABITAT

Enumerated_Domain_Value_Definition: Habitats and Plants

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: INVERT

Enumerated_Domain_Value_Definition: Invertebrates

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: M_MAMMAL

Enumerated_Domain_Value_Definition: Marine Mammals

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: REPTILE

Enumerated_Domain_Value_Definition: Reptiles and Amphibians

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: T_MAMMAL

Enumerated_Domain_Value_Definition: Terrestrial Mammals

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 1

Range_Domain_Maximum: N

Attribute:

Attribute_Label: JAN

Attribute_Definition: January

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: X

Enumerated_Domain_Value_Definition: Present in January

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: FEB

Attribute_Definition: February

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: X

Enumerated_Domain_Value_Definition: Present in February

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

   Attribute_Label: MAR
   Attribute_Definition: March
   Attribute_Definition_Source: Research Planning, Inc.
   Attribute_Domain_Values:
    Enumerated_Domain:
     Enumerated_Domain_Value: X
     Enumerated_Domain_Value_Definition: Present in March
     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
   Attribute_Label: APR
   Attribute_Definition: April
   Attribute_Definition_Source: Research Planning, Inc.
   Attribute_Domain_Values:
    Enumerated_Domain:
     Enumerated_Domain_Value: X
     Enumerated_Domain_Value_Definition: Present in April
     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
   Attribute_Label: MAY
   Attribute_Definition: May
   Attribute_Definition_Source: Research Planning, Inc.
   Attribute_Domain_Values:
    Enumerated_Domain:
     Enumerated_Domain_Value: X
     Enumerated_Domain_Value_Definition: Present in May
     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
   Attribute_Label: JUN
   Attribute_Definition: June
   Attribute_Definition_Source: Research Planning, Inc.
   Attribute_Domain_Values:
    Enumerated_Domain:
     Enumerated_Domain_Value: X
     Enumerated_Domain_Value_Definition: Present in June
     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
   Attribute_Label: JUL
   Attribute_Definition: July
   Attribute_Definition_Source: Research Planning, Inc.
   Attribute_Domain_Values:
    Enumerated_Domain:
     Enumerated_Domain_Value: X
     Enumerated_Domain_Value_Definition: Present in July
     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
   Attribute_Label: AUG
   Attribute_Definition: August
   Attribute_Definition_Source: Research Planning, Inc.
   Attribute_Domain_Values:
    Enumerated_Domain:
     Enumerated_Domain_Value: X

Enumerated_Domain_Value_Definition: Present in August
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
    Attribute_Label: SEP
    Attribute_Definition: September
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: X
            Enumerated_Domain_Value_Definition: Present in September
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
    Attribute_Label: OCT
    Attribute_Definition: October
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: X
            Enumerated_Domain_Value_Definition: Present in October
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
    Attribute_Label: NOV
    Attribute_Definition: November
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: X
            Enumerated_Domain_Value_Definition: Present in November
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
    Attribute_Label: DEC
    Attribute_Definition: December
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: X
            Enumerated_Domain_Value_Definition: Present in December
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.
    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: Research Planning, Inc.

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: Research Planning, Inc.
  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: Research Planning, Inc.
    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: Research Planning, Inc.
  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: Research Planning, Inc.
    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 elements.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
      Enumerated_Domain:
        Enumerated_Domain_Value: Y
        Enumerated_Domain_Value_Definition: Life-history stage or activity present
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: Y

            Enumerated_Domain_Value_Definition: Life-history stage or activity present

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    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: Research Planning, Inc.

    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: Research Planning, Inc.

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: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: Y

            Enumerated_Domain_Value_Definition: Life-history stage or activity present

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: Y

            Enumerated_Domain_Value_Definition: Life-history stage or activity present

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    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: Research Planning, Inc.

    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: Research Planning, Inc.

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: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: Y

            Enumerated_Domain_Value_Definition: Life-history stage or activity present

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.
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: Research Planning, Inc.

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: Research Planning, Inc.
  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; and SOURCE_ID in the ESI and HYDRO data layers.
    Attribute_Definition_Source: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.
    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: Research Planning, Inc.

Attribute:

    Attribute_Label: TITLE

    Attribute_Definition: Title of source material or data.

    Attribute_Definition_Source: Research Planning, Inc.

    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: Research Planning, Inc.

    Attribute_Domain_Values:

        Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

    Attribute_Label: PUBLICATION

    Attribute_Definition: Additional citation information.

    Attribute_Definition_Source: Research Planning, Inc.

    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: Research Planning, Inc.

    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: Research Planning, Inc.

    Attribute_Domain_Values:

        Unrepresentable_Domain: Acceptable values change from atlas to atlas.

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: Research Planning, Inc.

    Attribute:

        Attribute_Label: ELEMENT

        Attribute_Definition: Major categories of biological data.

        Attribute_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

                Enumerated_Domain_Value: BIRD

                Enumerated_Domain_Value_Definition: Birds

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

Enumerated_Domain_Value: FISH
Enumerated_Domain_Value_Definition: Fish
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: HABITAT
Enumerated_Domain_Value_Definition: Habitats and Plants
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: INVERT
Enumerated_Domain_Value_Definition: Invertebrates
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: M_MAMMAL
Enumerated_Domain_Value_Definition: Marine Mammals
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: REPTILE
Enumerated_Domain_Value_Definition: Reptiles and Amphibians
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: T_MAMMAL
Enumerated_Domain_Value_Definition: Terrestrial Mammals
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
 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: Research Planning, Inc.

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: Research Planning, Inc.
 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: Research Planning, Inc.

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: Research Planning, Inc.
 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: Research Planning, Inc.

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: Research Planning, Inc.
 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: Research Planning, Inc.

Distribution_Information:
    Distributor:
        Contact_Information:
            Contact_Person_Primary:
                Contact_Person: John Kaperick
                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) 526-6400
            Contact_Facsimile_Telephone: (206) 526-6329
    Resource_Description: ESI Atlas for Virginia
    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, and will offer a replacement copy of the product when the product is determined unreadable by computer-input peripherals, or when the physical medium is delivered in damaged condition.
    Custom_Order_Process:
        Contact NOAA for distribution options (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, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI_Viewer product are also included on the distribution CDs for ease of use of the ESI data. 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: 200512
    Metadata_Review_Date: 200512
    Metadata_Contact:
        Contact_Information:
            Contact_Person_Primary:
                Contact_Person: Jill Petersen
                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: Jill.Petersen@noaa.gov
Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998

Generated by mp version 2.8.21 on Wed Dec 07 16:41:07 2005

Virginia ESI: HABITATS (Habitat Polygons)

Metadata also available as - [Parseable text] - [SGML]

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:
                National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
            Publication_Date: 200512
            Title: Virginia ESI: HABITATS (Habitat Polygons)
            Edition: 2
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Virginia
            Publication_Information:
                Publication_Place: Seattle, Washington
                Publisher:
                National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.
            Other_Citation_Details:
                Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.
    Description:
        Abstract:

            This data set contains sensitive biological resource data for submerged aquatic vegetation (SAV) and rare terrestrial plants/communities in Virginia. Vector polygons in this data set represent habitat 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 Environmental Sensitivity Index (ESI) data for Virginia. 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: 2002

Ending_Date: 2004

Currentness_Reference:

The biological data were compiled during 2004-2005. The currentness dates for the data range from 2002 to 2004 and are documented in the Lineage section.

Status:

Progress: Complete

Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -77.50000

East_Bounding_Coordinate: -75.12500

North_Bounding_Coordinate: 38.87500

South_Bounding_Coordinate: 36.50000

Keywords:

Theme:

Theme_Keyword_Thesaurus: None

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: Habitats

Place:

Place_Keyword_Thesaurus: None

Place_Keyword: Virginia

Access_Constraints: None

Use_Constraints:

DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES. Besides the above warning, 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: datafig.jpg

    Browse_Graphic_File_Description:

        Depicts the relationships between spatial data layers and attribute data tables for the Virginia 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, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and NOAA Chesapeake Bay Office, Gloucester Point, Virginia.

Native_Data_Set_Environment:

    The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.3) and SQL SERVER(r) (version 7.0). The hardware configuration is PC's with Windows Operating System (NT4.0/2000).

    The Spatial_Data_Organization Information section refers only to the source files in the ARC export format. The following files are included in that data set: birds.e00, esi.e00, fish.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, reptpt.e00, socecon.e00, t_mammal.e00, wetlands.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

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. A final review is made by the GIS manager, where the data are written to CD-ROM and the metadata are written.

        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 and digital data on habitat distribution. These data do not necessarily represent all habitat occurrences in Virginia. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 145, Seabeach amaranth, Amaranthus pumilus; 187, Sea-beach knotweed, Polygonum glaucum; 214, Rare plant, n/a; 609, Submerged aquatic vegetation, n/a; 610, Dixie sandmat, Chamaesyce bombensis; 611, Maritime dune scrub, n/a; 1035, Sea level fen, n/a; 1053, Native coastal strand 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. Most of the spatial components of the biological data layers are 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 1:24,000. 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. See the Lineage and Process_Description sections for more information on the original data source and how these data were integrated or manipulated to create the final data set. 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.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator:

FIELD, D. (VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION [VA DCR], WACHAPREAGUE)

Publication_Date: 2004

Title: NATURAL HERITAGE PROGRAM DATA

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: 2004

Source_Currentness_Reference: DATE OF COMMUNICATION

Source_Citation_Abbreviation: NONE

Source_Contribution: HABITATS INFORMATION

Source_Information:

Source_Citation:

Citation_Information:

Originator: GALLEGOS, J. (U.S. FISH AND WILDLIFE SERVICE

[USFWS], VA BEACH)
Publication_Date: 2004
Title: BACK BAY NATIONAL WILDLIFE REFUGE SPECIES
DISTRIBUTION
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: 2004
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: HABITATS INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: T. PENN, USFWS, CHINCOTEAGUE ISLAND
Publication_Date: 2004
Title: DISTRIBUTION OF CHINCOTEAGUE NATIONAL WILDLIFE
REFUGE SPECIES
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: 2004
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: HABITATS INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: VIRGINIA INSTITUTE OF MARINE SCIENCE (VIMS)
Publication_Date: 2003
Title: CHESAPEAKE BAY SUBMERGED AQUATIC VEGETATION
(SAV) COVERAGE
Geospatial_Data_Presentation_Form: DIGITAL VECTOR DATA
Other_Citation_Details: VIMS, GLOUCESTER POINT, VA
Source_Scale_Denominator: 24,000
Type_of_Source_Media: ONLINE
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date: 2002
Ending_Date: 2003
Source_Currentness_Reference: DATE OF SURVEY
Source_Citation_Abbreviation: NONE
Source_Contribution: HABITATS INFORMATION
Process_Step:

Process_Description:

Two main sources of data were used to depict habitat distribution and seasonality for this data layer: (1) personal interviews with resource experts from the Virginia Department of Conservation and Recreation's Division of Natural Heritage and the U.S. FISH AND WILDLIFE SERVICE (USFWS), and (2) a 2003 Virginia Institute of Marine Science (VIMS) Chesapeake Bay Submerged Aquatic Vegetation digital vector data coverage.

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 a biology data layer: (1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:24,000 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 compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. 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: 200505
Process_Contact:
    Contact_Information:
        Contact_Organization_Primary:
            Contact_Organization: NOAA, Office of Response and Restoration
            Contact_Person: Jill Petersen
        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: Jill.Petersen@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: 1368
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Area point
            Point_and_Vector_Object_Count: 1368
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Complete chain
            Point_and_Vector_Object_Count: 2169
        SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 249474
SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 1771

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 1927
Ellipsoid_Name: Clark 1866
Semi-major_Axis: 6378206.400000
Denominator_of_Flattening_Ratio: 294.978698

Entity_and_Attribute_Information:
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 Virginia atlas, the number is 55), 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 below 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 described below 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 below, 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 below.

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 habitat distribution. 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:* Research Planning, Inc.
>   *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 (55), 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:* 550300002
>>>> *Range_Domain_Maximum:* 550301351
>   *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 polygons and do not contain information.
>> *Attribute_Definition_Source:* NOAA
>> *Attribute_Domain_Values:*
>>> *Range_Domain:*
>>>> *Range_Domain_Minimum:* 55000766
>>>> *Range_Domain_Maximum:* 55000773
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. 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: Research Planning, Inc.

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: 55000001

Range_Domain_Maximum: 55000847

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 (55), 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: 550100002

Range_Domain_Maximum: 553600012

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: Research Planning, Inc.

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: 055000001

Range_Domain_Maximum: 055000847

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: Research Planning, Inc.
Attribute_Domain_Values:
 Range_Domain:
  Range_Domain_Minimum: 1
  Range_Domain_Maximum: N

Attribute:
 Attribute_Label: CONC
 Attribute_Definition:
  The field CONC refers to a "concentration," abundance, or density value of a habitat at a particular location. The field may contain percent cover of submerged aquatic vegetation (SAV) (e.g., 0%-40% COVER or >40% cover) in individual polygons. No quantitative or qualitative information on concentrations of rare plants/communities was available, therefore this field was populated with "-" for terrestrial habitats.
 Attribute_Definition_Source: Research Planning, Inc.
 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: Research Planning, Inc.
 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: Research Planning, Inc.
 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: Research Planning, Inc.
 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: Research Planning, Inc.

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: BIRD
        Enumerated_Domain_Value_Definition: Birds
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: FISH
        Enumerated_Domain_Value_Definition: Fish
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: HABITAT
        Enumerated_Domain_Value_Definition: Habitats and Plants
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: INVERT
        Enumerated_Domain_Value_Definition: Invertebrates
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: M_MAMMAL
        Enumerated_Domain_Value_Definition: Marine Mammals
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: REPTILE
        Enumerated_Domain_Value_Definition: Reptiles and Amphibians
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: T_MAMMAL
        Enumerated_Domain_Value_Definition: Terrestrial Mammals
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
    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: Research Planning, Inc.
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: Research Planning, Inc.

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:* Research Planning, Inc.

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:* Research Planning, Inc.
> *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:* Research Planning, Inc.
>> *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:* Research Planning, Inc.
>> *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:* Research Planning, Inc.
>> *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:* Research Planning, Inc.
>> *Attribute_Domain_Values:*
>>> *Enumerated_Domain:*

     Enumerated_Domain_Value: BIRD
     Enumerated_Domain_Value_Definition: Birds
     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
   Attribute_Domain_Values:
    Enumerated_Domain:
     Enumerated_Domain_Value: FISH
     Enumerated_Domain_Value_Definition: Fish
     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
   Attribute_Domain_Values:
    Enumerated_Domain:
     Enumerated_Domain_Value: HABITAT
     Enumerated_Domain_Value_Definition: Habitats and Plants
     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
   Attribute_Domain_Values:
    Enumerated_Domain:
     Enumerated_Domain_Value: INVERT
     Enumerated_Domain_Value_Definition: Invertebrates
     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
   Attribute_Domain_Values:
    Enumerated_Domain:
     Enumerated_Domain_Value: M_MAMMAL
     Enumerated_Domain_Value_Definition: Marine Mammals
     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
   Attribute_Domain_Values:
    Enumerated_Domain:
     Enumerated_Domain_Value: REPTILE
     Enumerated_Domain_Value_Definition: Reptiles and Amphibians
     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
   Attribute_Domain_Values:
    Enumerated_Domain:
     Enumerated_Domain_Value: T_MAMMAL
     Enumerated_Domain_Value_Definition: Terrestrial Mammals
     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute:
  Attribute_Label: SUBELEMENT
  Attribute_Definition: Element subgroup delineating a logical grouping of species.
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
   Enumerated_Domain:
    Enumerated_Domain_Value: bivalve
    Enumerated_Domain_Value_Definition: Bivalve
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
   Enumerated_Domain:
    Enumerated_Domain_Value: crab
    Enumerated_Domain_Value_Definition: Crab
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
   Enumerated_Domain:
    Enumerated_Domain_Value: diadromous
    Enumerated_Domain_Value_Definition: Diadromous fish

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: diving
        Enumerated_Domain_Value_Definition: Diving bird
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: dolphin
        Enumerated_Domain_Value_Definition: Dolphin
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: e_nursery
        Enumerated_Domain_Value_Definition: Estuarine nursery fish
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: e_resident
        Enumerated_Domain_Value_Definition: Estuarine resident
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: freshwater
        Enumerated_Domain_Value_Definition: Freshwater fish
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: gastropod
        Enumerated_Domain_Value_Definition: Gastropod
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: gull_tern
        Enumerated_Domain_Value_Definition: Gull or tern
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: insect
        Enumerated_Domain_Value_Definition: Insect
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: m_benthic
        Enumerated_Domain_Value_Definition: Marine benthic fish
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: m_pelagic
        Enumerated_Domain_Value_Definition: Marine pelagic fish
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: passerine
        Enumerated_Domain_Value_Definition: Passerine bird
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: pelagic
        Enumerated_Domain_Value_Definition: Pelagic bird
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: pinniped
        Enumerated_Domain_Value_Definition: Pinniped
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: plant
        Enumerated_Domain_Value_Definition: Plant
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: raptor
        Enumerated_Domain_Value_Definition: Raptor
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: sav
        Enumerated_Domain_Value_Definition: Submerged aquatic vegetation
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: shorebird
        Enumerated_Domain_Value_Definition: Shorebird
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: sm_mammal
        Enumerated_Domain_Value_Definition: Small mammal
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: turtle
        Enumerated_Domain_Value_Definition: Turtle
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: upland
        Enumerated_Domain_Value_Definition: Upland habitat
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:
 Enumerated_Domain_Value: wading
 Enumerated_Domain_Value_Definition: Wading bird
 Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: waterfowl
  Enumerated_Domain_Value_Definition: Waterfowl
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: wetland
  Enumerated_Domain_Value_Definition: Wetland
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: whale
  Enumerated_Domain_Value_Definition: Whale
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.
 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: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: 0
   Enumerated_Domain_Value_Definition: Date unspecified
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.
 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:* Research Planning, Inc.

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:* Research Planning, Inc.

> *Attribute:*
>> *Attribute_Label:* ELEMENT
>> *Attribute_Definition:* Major categories of biological data.
>> *Attribute_Definition_Source:* Research Planning, Inc.
>> *Attribute_Domain_Values:*
>>> *Enumerated_Domain:*
>>>> *Enumerated_Domain_Value:* BIRD
>>>> *Enumerated_Domain_Value_Definition:* Birds
>>>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
>> *Attribute_Domain_Values:*
>>> *Enumerated_Domain:*
>>>> *Enumerated_Domain_Value:* FISH
>>>> *Enumerated_Domain_Value_Definition:* Fish
>>>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
>> *Attribute_Domain_Values:*
>>> *Enumerated_Domain:*
>>>> *Enumerated_Domain_Value:* HABITAT
>>>> *Enumerated_Domain_Value_Definition:* Habitats and Plants
>>>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
>> *Attribute_Domain_Values:*
>>> *Enumerated_Domain:*
>>>> *Enumerated_Domain_Value:* INVERT
>>>> *Enumerated_Domain_Value_Definition:* Invertebrates
>>>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
>> *Attribute_Domain_Values:*
>>> *Enumerated_Domain:*
>>>> *Enumerated_Domain_Value:* M_MAMMAL
>>>> *Enumerated_Domain_Value_Definition:* Marine Mammals
>>>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
>> *Attribute_Domain_Values:*
>>> *Enumerated_Domain:*
>>>> *Enumerated_Domain_Value:* REPTILE
>>>> *Enumerated_Domain_Value_Definition:* Reptiles and Amphibians
>>>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
>> *Attribute_Domain_Values:*
>>> *Enumerated_Domain:*
>>>> *Enumerated_Domain_Value:* T_MAMMAL

Enumerated_Domain_Value_Definition: Terrestrial Mammals

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 1

Range_Domain_Maximum: N

Attribute:

Attribute_Label: JAN

Attribute_Definition: January

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: X

Enumerated_Domain_Value_Definition: Present in January

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: FEB

Attribute_Definition: February

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: X

Enumerated_Domain_Value_Definition: Present in February

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: MAR

Attribute_Definition: March

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: X

Enumerated_Domain_Value_Definition: Present in March

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: APR

Attribute_Definition: April
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: X
  Enumerated_Domain_Value_Definition: Present in April
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
 Attribute_Label: MAY
 Attribute_Definition: May
 Attribute_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: X
   Enumerated_Domain_Value_Definition: Present in May
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
 Attribute_Label: JUN
 Attribute_Definition: June
 Attribute_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: X
   Enumerated_Domain_Value_Definition: Present in June
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
 Attribute_Label: JUL
 Attribute_Definition: July
 Attribute_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: X
   Enumerated_Domain_Value_Definition: Present in July
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
 Attribute_Label: AUG
 Attribute_Definition: August
 Attribute_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: X
   Enumerated_Domain_Value_Definition: Present in August
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
 Attribute_Label: SEP
 Attribute_Definition: September
 Attribute_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: X
   Enumerated_Domain_Value_Definition: Present in September

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: OCT

Attribute_Definition: October

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: X

Enumerated_Domain_Value_Definition: Present in October

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: NOV

Attribute_Definition: November

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: X

Enumerated_Domain_Value_Definition: Present in November

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: DEC

Attribute_Definition: December

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: X

Enumerated_Domain_Value_Definition: Present in December

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

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: Research Planning, Inc.

    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: Research Planning, Inc.

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: Research Planning, Inc.

    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 elements.

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: Y

            Enumerated_Domain_Value_Definition: Life-history stage or activity present

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    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: Research Planning, Inc.

    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: Research Planning, Inc.
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: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: Y
      Enumerated_Domain_Value_Definition: Life-history stage or activity present
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  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: Research Planning, Inc.
  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: Research Planning, Inc.
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: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: Y
      Enumerated_Domain_Value_Definition: Life-history stage or activity present
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  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: Research Planning, Inc.
  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: Research Planning, Inc.
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: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: Y
   Enumerated_Domain_Value_Definition: Life-history stage or activity present
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 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: Research Planning, Inc.
 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: Research Planning, Inc.
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: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: Y
   Enumerated_Domain_Value_Definition: Life-history stage or activity present
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 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: Research Planning, Inc.
 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: Research Planning, Inc.

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: Research Planning, Inc.

    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; and SOURCE_ID in the ESI and HYDRO data layers.

        Attribute_Definition_Source: Research Planning, Inc.

        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: Research Planning, Inc.

        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: Research Planning, Inc.

        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: Research Planning, Inc.

    Attribute:

        Attribute_Label: TITLE

        Attribute_Definition: Title of source material or data.

        Attribute_Definition_Source: Research Planning, Inc.

        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: Research Planning, Inc.

Attribute_Domain_Values:

    Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

    Attribute_Label: PUBLICATION

    Attribute_Definition: Additional citation information.

    Attribute_Definition_Source: Research Planning, Inc.

    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: Research Planning, Inc.

    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: Research Planning, Inc.

    Attribute_Domain_Values:

        Unrepresentable_Domain: Acceptable values change from atlas to atlas.

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: Research Planning, Inc.

    Attribute:

        Attribute_Label: ELEMENT

        Attribute_Definition: Major categories of biological data.

        Attribute_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

                Enumerated_Domain_Value: BIRD

                Enumerated_Domain_Value_Definition: Birds

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

                Enumerated_Domain_Value: FISH

                Enumerated_Domain_Value_Definition: Fish

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

                Enumerated_Domain_Value: HABITAT

                Enumerated_Domain_Value_Definition: Habitats and Plants

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

               Enumerated_Domain_Value: INVERT
               Enumerated_Domain_Value_Definition: Invertebrates
               Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
     Attribute_Domain_Values:
         Enumerated_Domain:
               Enumerated_Domain_Value: M_MAMMAL
               Enumerated_Domain_Value_Definition: Marine Mammals
               Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
     Attribute_Domain_Values:
         Enumerated_Domain:
               Enumerated_Domain_Value: REPTILE
               Enumerated_Domain_Value_Definition: Reptiles and Amphibians
               Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
     Attribute_Domain_Values:
         Enumerated_Domain:
               Enumerated_Domain_Value: T_MAMMAL
               Enumerated_Domain_Value_Definition: Terrestrial Mammals
               Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: Research Planning, Inc.
     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: Research Planning, Inc.
     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: Research Planning, Inc.
     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: Research Planning, Inc.
     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: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.
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: Research Planning, Inc.

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: Research Planning, Inc.
    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: Research Planning, Inc.

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: Research Planning, Inc.
    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: Research Planning, Inc.

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: Research Planning, Inc.
    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: Research Planning, Inc.

Distribution_Information:
    Distributor:
        Contact_Information:
            Contact_Person_Primary:

Contact_Person: John Kaperick
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) 526-6400
Contact_Facsimile_Telephone: (206) 526-6329
Resource_Description: ESI Atlas for Virginia
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, and will offer a replacement copy of the product when the product is determined unreadable by computer-input peripherals, or when the physical medium is delivered in damaged condition.
Custom_Order_Process:
Contact NOAA for distribution options (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, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI_Viewer product are also included on the distribution CDs for ease of use of the ESI data. 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: 200512
Metadata_Review_Date: 200512
Metadata_Contact:
Contact_Information:
Contact_Person_Primary:
Contact_Person: Jill Petersen
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: Jill.Petersen@noaa.gov
Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998

Generated by mp version 2.8.21 on Wed Dec 07 16:43:23 2005

Virginia ESI Entity Relationship Diagram

Relationships between spatial data layers and attribute data tables

Geographic Themes   **Lookup Tables**   **Data Tables**

ESI (LINES)
  ESI (10, 10, C)
  LINE (1, 1, C)
  SOURCE_ID (6, 6, I)
  ENVIR (1, 1, C)
ESI (POLYS)
  ESI (10, 10, C)
  WATER_CODE (1, 1, C)
  ENVIR (1, 1, C)
HYDRO (LINES)
  LINE (1, 1, C)
  SOURCE_ID (6, 6, 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)
WETLANDS (POLYS)
  ESI (10, 10, C)

MGT (POLYS)
  TYPE (2, 2, C)
  ID (10, 10, I)
  HUNUM (9, 9, I)
SOCECON (POINTS)
  TYPE (2, 2, C)
  ID (10,10,I)
  HUNUM (9, 9, I)
SOCECON (LINES)
  TYPE (2, 2, C)

BIRDS (POLYS)
  ID (10, 10, I)
  RARNUM (9, 9, I)
FISH (POLYS)
  ID (10, 10, I)
  RARNUM (9, 9, I)
HABITATS (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)
NESTS (POINTS)
  ID (10, 10, I)
  RARNUM (9, 9, I)
REPTILES (POLYS)
  ID (10, 10, I)
  RARNUM (9, 9, I)
REPTPT (POINTS)
  ID (10, 10, I)
  RARNUM (9, 9, I)
T_MAMMAL (POLYS)
  ID (10, 10, I)
  RARNUM (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.)

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.)

SOC_DAT
  HUNUM (9, 9, I)
  TYPE (20, 20, C)
  NAME (40, 40, C)
  CONTACT (80, 80, C)
  PHONE (20, 20, C)
  G_SOURCE (6, 6, I)
  A_SOURCE (6, 6, I)

BIORES
  RARNUM (9, 9, I)
  SPECIES_ID (5, 5, I)
  CONC (20, 20, C)
  SEASON_ID (2, 2, I)
  G_SOURCE (6, 6, I)
  S_SOURCE (6, 6, I)
  ELEMENT (10, 10, C)
  EL_SPE (6, 6, C)
  EL_SPE_SEA (8, 8, C)

SOURCES
  SOURCE_ID (6, 6, I)
  ORIGINATOR (35, 35, C)
  DATE_PUB (10, 10, I)
  TITLE (80, 80, C)
  DATA_FORMAT (80, 80, C)
  PUBLICATION (120, 120, C)
  SCALE (20, 20, C)
  TIME_PERIOD (22, 22, 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)

STATUS
  ELEMENT (10, 10, C)
  SPECIES_ID (5, 5, I)
  STATE (2, 2, C)
  COUNTRY (3, 3, C)
  S (1, 1, C)
  F (1, 1, C)
  I (1, 1, C)
  S_DATE (10, 10, I)
  F_DATE (10, 10, I)
  I_DATE (10, 10, I)
  EL_SPE (6, 6, 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)