Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
            Publication_Date: 200411
            Title: Columbia River ESI: HYDRO (Hydrography Lines and Polygons)
            Edition: First
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Columbia River
            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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
    Description:
        Abstract:
            This data set contains vector lines and polygons representing coastal hydrography used in the creation of the Environmental Sensitivity Index (ESI) for Columbia River. 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, or geographic features; SOC, or socioeconomic features; and HYDRO, or water features.

            This data set comprises a portion of the ESI data for Columbia River. 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: 1999

Ending_Date: 2003

Currentness_Reference:

> The data were compiled during 2003-2004. The currentness dates for the data range from 1999 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: -124.125

East_Bounding_Coordinate: -120.67375

North_Bounding_Coordinate: 46.375

South_Bounding_Coordinate: 45.3

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: Columbia River

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 Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.

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, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, nwi.e00, reptiles.e00, socecon.e00, t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, runs_dat, 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 linear and polygonal hydrography for Columbia River.
> *Positional_Accuracy:*
>> *Horizontal_Positional_Accuracy:*
>>> *Horizontal_Positional_Accuracy_Report:*
>>>> The hydrography data set was developed from pre-existing digital data and reflects the positional accuracy of these original data. The horizontal positional accuracy of the 1:24,000 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:* Oregon/Washington Bureau of Land Management (BLM)
>>>>> *Publication_Date:* 2001
>>>>> *Title:* Boundary State Oregon Washington
>>>>> *Geospatial_Data_Presentation_Form:* Digital Vector Data
>>>>> *Publication_Information:*
>>>>>> *Publication_Place:* Portland, OR
>>>>>> *Publisher:* Oregon/Washington BLM
>>> *Source_Scale_Denominator:* 24000
>>> *Type_of_Source_Media:* Online
>>> *Source_Time_Period_of_Content:*
>>>> *Time_Period_Information:*
>>>>> *Range_of_Dates/Times:*
>>>>>> *Beginning_Date:* 1999

Ending_Date: 2001
Source_Currentness_Reference: Ground condition
Source_Citation_Abbreviation: None
Source_Contribution: Shoreline for main branch of Columbia River
Source_Information:
Source_Citation:
Citation_Information:
Originator: Colin Plank, Research Planning, Inc.
Publication_Date: Unpublished material
Title: ESI Overflight
Geospatial_Data_Presentation_Form: Map
Publication_Information:
Publication_Place: Unpublished material
Publisher: Unpublished material
Source_Scale_Denominator: 24000
Type_of_Source_Media: Paper
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 200310
Source_Currentness_Reference: Date of overflight
Source_Citation_Abbreviation: None
Source_Contribution: Hydrography information
Source_Information:
Source_Citation:
Citation_Information:
Originator: U.S. Geological Survey (USGS)
Publication_Date: Varies
Title: 7.5 Minute Topographic Quadrangles
Geospatial_Data_Presentation_Form: Map
Publication_Information:
Publication_Place: Reston, VA or Denver, CO
Publisher: USGS
Source_Scale_Denominator: 24000
Type_of_Source_Media: Paper
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: Hydrography information
Source_Information:
Source_Citation:
Citation_Information:
Originator: Oregon Department of Transportation (ORDOT)
Publication_Date: Unknown
Title: County Maps
Geospatial_Data_Presentation_Form: Digital Vector Data
Publication_Information:
Publication_Place: Unknown
Publisher: ORDOT
Source_Scale_Denominator: 100,000
Type_of_Source_Media: Online
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: Unknown
Source_Currentness_Reference: Unknown
Source_Citation_Abbreviation: None

    Source_Contribution:
      Hydrography information for Columbia, Multnomah, and Clackamas counties
  Source_Information:
    Source_Citation:
      Citation_Information:
        Originator: Katheryn Simmons, NOAA, U.S. National Response Team
        Publication_Date: Unpublished material
        Title: mllwshore_utm
        Geospatial_Data_Presentation_Form: Digital Vector Data
        Publication_Information:
          Publication_Place: Unpublished material
          Publisher: Unpublished material
    Source_Scale_Denominator: Unknown
    Type_of_Source_Media: Electronic Mail System
    Source_Time_Period_of_Content:
      Time_Period_Information:
        Single_Date/Time:
          Calendar_Date: Unknown
    Source_Currentness_Reference: Unknown
    Source_Citation_Abbreviation: None
    Source_Contribution: Hydrography information for Columbia River
  Process_Step:
    Process_Description:
      The shoreline was derived primarily from digital shoreline data from
      Oregon/Washington Bureau of Land Management (BLM). In some cases, minor
      shoreline changes or additional polygons were sketched during the overflights
      conducted during October 2003. Overflight changes were digitized from the scanned
      and registered hardcopy field maps. After the initial shoreline classification, these
      data were edgematched and checked for logical consistency errors. Review maps
      were plotted at 1:24000 scale for verification of polygonal and linear attributes.
    Process_Date: 200408
    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 rings
      Point_and_Vector_Object_Count: 774
    SDTS_Terms_Description:
      SDTS_Point_and_Vector_Object_Type: Area point
      Point_and_Vector_Object_Count: 774
    SDTS_Terms_Description:
      SDTS_Point_and_Vector_Object_Type: Complete chain

Point_and_Vector_Object_Count: 1557
SDTS_Terms_Description:
  SDTS_Point_and_Vector_Object_Type: Link
  Point_and_Vector_Object_Count: 282656
SDTS_Terms_Description:
  SDTS_Point_and_Vector_Object_Type: Label Point
  Point_and_Vector_Object_Count: 172
SDTS_Terms_Description:
  SDTS_Point_and_Vector_Object_Type: Node, planar graph
  Point_and_Vector_Object_Count: 1556

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: 6378206.4
   Denominator_of_Flattening_Ratio: 294.978698

Entity_and_Attribute_Information:
 Detailed_Description:
  Entity_Type:
   Entity_Type_Label: HYDRO.AAT
   Entity_Type_Definition:
    The HYDRO.AAT table contains attribute information for the vector lines
    representing linear hydrography features in the HYDRO data layer.
   Entity_Type_Definition_Source: 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: H
     Enumerated_Domain_Value_Definition: Hydrography
     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: Data source of the ESI lines
   Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: 1
    Enumerated_Domain_Value_Definition:
      Digital shoreline from Oregon/Washington Bureau of Land
      Management (BLM)
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Enumerated_Domain:
    Enumerated_Domain_Value: 2
    Enumerated_Domain_Value_Definition:
      Digitized from low-altitude overflight field sketches and oblique
      photography
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Enumerated_Domain:
    Enumerated_Domain_Value: 5
    Enumerated_Domain_Value_Definition: Digitized from scanned
    1:24,000-USGS topographic quadrangles
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Enumerated_Domain:
    Enumerated_Domain_Value: 7
    Enumerated_Domain_Value_Definition: Digital map boundary from
    INDEX data layer
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Enumerated_Domain:
    Enumerated_Domain_Value: 8
    Enumerated_Domain_Value_Definition:
      Digital shoreline from Oregon Department of Transportation
      county maps
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Enumerated_Domain:
    Enumerated_Domain_Value: 9
    Enumerated_Domain_Value_Definition: Digital shoreline from National
    Response Team
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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.

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 Columbia River
 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: 200411
 Metadata_Review_Date: 200411
 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 2.8.2 on Fri Dec 10 13:40:03 2004

Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
            Publication_Date: 200411
            Title:
                Columbia River ESI: ESI (Environmental Sensitivity Index Shoreline Types - Lines and Polygons)
            Edition: First
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Columbia River
            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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
    Description:
        Abstract:
            This data set contains vector lines and polygons representing the shoreline and coastal habitats of Columbia River classified according to the Environmental Sensitivity Index (ESI) classification system. This data set comprises a portion of the ESI data for Columbia River. 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:* 2003
    - *Ending_Date:* 2004
  - *Currentness_Reference:*
    - The data were compiled during 2003-2004. The currentness date for the data is 2003 and is documented in the Lineage section.

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

Spatial_Domain:
- *Bounding_Coordinates:*
  - *West_Bounding_Coordinate:* -124.125
  - *East_Bounding_Coordinate:* -120.67375
  - *North_Bounding_Coordinate:* 46.375
  - *South_Bounding_Coordinate:* 45.3

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:* Columbia River

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 Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.

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, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, nwi.e00, reptiles.e00, socecon.e00, t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, runs_dat, 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 ESI classification system.

    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 field maps. 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: Colin Plank, Research Planning, Inc.
                    Publication_Date: 200310
                    Title: ESI Overflight
                    Geospatial_Data_Presentation_Form: Map
                    Publication_Information:
                      Publication_Place: Unpublished material
                      Publisher: Unpublished material
            Source_Scale_Denominator: 24000
            Type_of_Source_Media: Paper
            Source_Time_Period_of_Content:
                Time_Period_Information:
                  Single_Date/Time:

Calendar_Date: 200310
Source_Currentness_Reference: Date of overflight
Source_Citation_Abbreviation: None
Source_Contribution: Shoreline classification
Source_Information:
Source_Citation:
Citation_Information:
Originator: Oregon/Washington Bureau of Land Management (BLM)
Publication_Date: 2001
Title: Boundary State Oregon Washington
Geospatial_Data_Presentation_Form: Digital Vector Data
Publication_Information:
Publication_Place: Portland, OR
Publisher: Oregon/Washington BLM
Source_Scale_Denominator: 24000
Type_of_Source_Media: Online
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date: 1999
Ending_Date: 2001
Source_Currentness_Reference: Ground condition
Source_Citation_Abbreviation: None
Source_Contribution: Shoreline for main branch of Columbia River
Source_Information:
Source_Citation:
Citation_Information:
Originator: U.S. Geological Survey (USGS)
Publication_Date: Varies
Title: 7.5 Minute Topographic Quadrangles
Geospatial_Data_Presentation_Form: Map
Publication_Information:
Publication_Place: Reston, VA or Denver, CO
Publisher: USGS
Source_Scale_Denominator: 24000
Type_of_Source_Media: Paper
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: Hydrography information
Source_Information:
Source_Citation:
Citation_Information:
Originator: Oregon Department of Transportation (ORDOT)
Publication_Date: Unknown
Title: County Maps
Geospatial_Data_Presentation_Form: Digital Vector Data
Publication_Information:
Publication_Place: Unknown
Publisher: ORDOT
Source_Scale_Denominator: 100,000
Type_of_Source_Media: Online
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: Unknown
Source_Currentness_Reference: Unknown

Source_Citation_Abbreviation: None
Source_Contribution:
Hydrography information for Columbia, Multnomah, and Clackamas counties
Source_Information:
Source_Citation:
Citation_Information:
Originator: Katheryn Simmons, NOAA, U.S. National Response Team
Publication_Date: Unpublished material
Title: mllwshore_utm
Geospatial_Data_Presentation_Form: Digital Vector Data
Publication_Information:
Publication_Place: Unpublished material
Publisher: Unpublished material
Source_Scale_Denominator: Unknown
Type_of_Source_Media: Electronic Mail System
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: Unknown
Source_Currentness_Reference: Unknown
Source_Citation_Abbreviation: None
Source_Contribution: Hydrography information for Columbia River
Process_Step:
Process_Description:
The shoreline habitats for Columbia River from the jetties up to the John Day Dam, and the Willamette River from its mouth up to Oregon City, were mapped during overflights and ground surveys conducted by an experienced coastal geologist in October 2003. The elevations were conducted using a fixed wing aircraft flying 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 classification was denoted directly onto the shoreline depicted on 1:24000 scale USGS topographic maps. Where appropriate, revisions to the existing shoreline were made and, where necessary, multiple habitats were described for each shoreline segment.
Process_Date: 200408
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 rings
Point_and_Vector_Object_Count: 783
SDTS_Terms_Description:

      SDTS_Point_and_Vector_Object_Type: Area point
      Point_and_Vector_Object_Count: 783
    SDTS_Terms_Description:
      SDTS_Point_and_Vector_Object_Type: Complete chain
      Point_and_Vector_Object_Count: 4438
    SDTS_Terms_Description:
      SDTS_Point_and_Vector_Object_Type: Link
      Point_and_Vector_Object_Count: 215642
    SDTS_Terms_Description:
      SDTS_Point_and_Vector_Object_Type: Node, planar graph
      Point_and_Vector_Object_Count: 4322

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: 6378206.4
      Denominator_of_Flattening_Ratio: 294.978698

Entity_and_Attribute_Information:
  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:* 1A
>> *Enumerated_Domain_Value_Definition:* Exposed Rocky Shores
>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
> *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 Bedrock
>> *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_Definition_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 Rocky Shores
>> *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: 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.
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: H
Enumerated_Domain_Value_Definition: Hydrography
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:
Data source of the ESI lines. 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.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 1
Enumerated_Domain_Value_Definition:

Digital shoreline from Oregon/Washington Bureau of Land
Management (BLM)
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
Enumerated_Domain_Value: 2
Enumerated_Domain_Value_Definition:
Digitized from low-altitude overflight field sketches and oblique
photography
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
Enumerated_Domain_Value: 5
Enumerated_Domain_Value_Definition: Digitized from scanned
1:24,000-USGS topographic quadrangles
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
Enumerated_Domain_Value: 7
Enumerated_Domain_Value_Definition: Digital map boundary from
INDEX data layer
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
Enumerated_Domain_Value: 8
Enumerated_Domain_Value_Definition:
Digital shoreline from Oregon Department of Transportation
county maps
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
Enumerated_Domain_Value: 9
Enumerated_Domain_Value_Definition: Digital shoreline from National
Response Team
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: R
Enumerated_Domain_Value_Definition: Riverine
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: R
Enumerated_Domain_Value_Definition: Riverine
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 Columbia River
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: 200408
    Metadata_Review_Date: 200408
    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 2.8.2 on Fri Dec 10 13:34:57 2004

Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
            Publication_Date: 200411
            Title: Columbia River ESI: INDEX (Index Polygons)
            Edition: First
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Columbia River
            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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
    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 Columbia River. This data set comprises a portion of the Environmental Sensitivity Index (ESI) data for Columbia River. 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: 2003
    Ending_Date: 2004
Currentness_Reference:
    The INDEX data were compiled during 2003-2004. The currentness date for the data is 2003 and is documented in the Source_Information section.

Status:
    Progress: Complete
    Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:
    Bounding_Coordinates:
        West_Bounding_Coordinate: -124.125
        East_Bounding_Coordinate: -120.67375
        North_Bounding_Coordinate: 46.375
        South_Bounding_Coordinate: 45.3

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: Columbia River

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 Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.

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, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, nwi.e00, reptiles.e00, socecon.e00, species.e00, status.e00, t_mammal.e00. Associated relational and

desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, runs_dat, 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 Environmental Sensitivity Index (ESI) for Columbia River, as well as the 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 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. 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: U.S. Geological Survey (USGS)
          Publication_Date: Varies
          Title: 7.5 Minute Topographic Quadrangles
          Geospatial_Data_Presentation_Form: Map
          Publication_Information:
            Publication_Place: Reston, VA or Denver, CO
            Publisher: USGS
      Source_Scale_Denominator: 24000
      Type_of_Source_Media: Paper
      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: USGS Topographic Boundaries
    Process_Step:
      Process_Description:
            Primarily, 1:24,000 U.S. Geological Survey (USGS) topographic maps were used to provide boundaries for cartographic products. In most cases, the polygons represent

U.S. Geological Survey (USGS) topographic maps that were re-tiled, moved, or extended to provide better cartographic coverage of the study area.

Process_Date: 200408
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 rings
            Point_and_Vector_Object_Count: 34
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Area point
            Point_and_Vector_Object_Count: 34
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Complete chain
            Point_and_Vector_Object_Count: 137
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Link
            Point_and_Vector_Object_Count: 137
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Node, planar graph
            Point_and_Vector_Object_Count: 104

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: 6378206.4
            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: 34
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: 45000
Enumerated_Domain_Value_Definition: Scale = 1:45000
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: -1.607
Range_Domain_Maximum: 0.769
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.
Enumerated_Domain:
Enumerated_Domain_Value: 17,11
Enumerated_Domain_Value_Definition: Page size= 17" by 11"
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 Columbia River
>   *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:* 200411
>   *Metadata_Review_Date:* 200411
>   *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 2.8.2 on Fri Dec 10 13:47:40 2004

Columbia River ESI: NWI (National Wetlands Inventory - 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
         Publication_Date: 200411
         Title:
            Columbia River ESI: NWI (National Wetlands Inventory - Polygons)
         Edition: First
         Geospatial_Data_Presentation_Form: Vector digital data
         Series_Information:
            Series_Name: None
            Issue_Identification: Columbia River
         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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
   Description:
      Abstract:
         This data set contains vector polygons representing the wetlands of Columbia River classified according to the Environmental Sensitivity Index (ESI) classification system. This data set comprises a portion of the ESI data for Columbia River. 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: 1999
            Ending_Date: 2004
    Currentness_Reference:
        The data were compiled during 2003-2004. The currentness date for the data is 1999 and is documented in the Lineage section.

Status:
    Progress: Complete
    Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:
    Bounding_Coordinates:
        West_Bounding_Coordinate: -124.125
        East_Bounding_Coordinate: -120.67375
        North_Bounding_Coordinate: 46.375
        South_Bounding_Coordinate: 45.3

Keywords:
    Theme:
        Theme_Keyword_Thesaurus: None
        Theme_Keyword: ESI
        Theme_Keyword: NWI
        Theme_Keyword: Sensitivity maps
        Theme_Keyword: Coastal resources
        Theme_Keyword: Oil spill planning
        Theme_Keyword: Coastal Zone Management
        Theme_Keyword: Wildlife
        Theme_Keyword: Wetland
    Place:
        Place_Keyword_Thesaurus: None
        Place_Keyword: Columbia River

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 Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.

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, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, nwi.e00, reptiles.e00, socecon.e00, t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, runs_dat, 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 ESI classification system.
    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 field maps. 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 sources and how these data were integrated or manipulated to create the final data set.
    Lineage:
        Source_Information:
            Source_Citation:
                Citation_Information:
                    Originator: Lower Columbia River Estuary Partnership
                    Publication_Date: 1999
                    Title: Habitat Types of the Lower Columbia River Estuary
                    Geospatial_Data_Presentation_Form: Map
                    Publication_Information:
                        Publication_Place: Seattle, Washington
                        Publisher: Northwest Cartography, Inc.
            Source_Scale_Denominator: 24000
            Type_of_Source_Media: Paper
            Source_Time_Period_of_Content:
                Time_Period_Information:

Single_Date/Time:
Calendar_Date: 1999
Source_Currentness_Reference: Publication date
Source_Citation_Abbreviation: None
Source_Contribution: Wetlands
Source_Information:
Source_Citation:
Citation_Information:
Originator: Colin Plank, Research Planning, Inc.
Publication_Date: 200310
Title: ESI Overflight
Geospatial_Data_Presentation_Form: Map
Publication_Information:
Publication_Place: Unpublished material
Publisher: Unpublished material
Source_Scale_Denominator: 24000
Type_of_Source_Media: Paper
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 200310
Source_Currentness_Reference: Date of overflight
Source_Citation_Abbreviation: None
Source_Contribution: Shoreline classification
Source_Information:
Source_Citation:
Citation_Information:
Originator: Oregon/Washington Bureau of Land Management (BLM)
Publication_Date: 2001
Title: Boundary State Oregon Washington
Geospatial_Data_Presentation_Form: Digital Vector Data
Publication_Information:
Publication_Place: Portland, OR
Publisher: Oregon/Washington BLM
Source_Scale_Denominator: 24000
Type_of_Source_Media: Online
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date: 1999
Ending_Date: 2001
Source_Currentness_Reference: Ground condition
Source_Citation_Abbreviation: None
Source_Contribution: Shoreline for main branch of Columbia River
Source_Information:
Source_Citation:
Citation_Information:
Originator: U.S. Geological Survey (USGS)
Publication_Date: Varies
Title: 7.5 Minute Topographic Quadrangles
Geospatial_Data_Presentation_Form: Map
Publication_Information:
Publication_Place: Reston, VA or Denver, CO
Publisher: USGS
Source_Scale_Denominator: 24000
Type_of_Source_Media: Paper
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: Hydrography information
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: Oregon Department of Transportation (ORDOT)
            Publication_Date: Unknown
            Title: County Maps
            Geospatial_Data_Presentation_Form: Digital Vector Data
            Publication_Information:
                Publication_Place: Unknown
                Publisher: ORDOT
    Source_Scale_Denominator: 100,000
    Type_of_Source_Media: Online
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: Unknown
        Source_Currentness_Reference: Unknown
    Source_Citation_Abbreviation: None
    Source_Contribution:
        Hydrography information for Columbia, Multnomah, and Clackamas counties
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: Katheryn Simmons, NOAA, U.S. National Response Team
            Publication_Date: Unpublished material
            Title: mllwshore_utm
            Geospatial_Data_Presentation_Form: Digital Vector Data
            Publication_Information:
                Publication_Place: Unpublished material
                Publisher: Unpublished material
    Source_Scale_Denominator: Unknown
    Type_of_Source_Media: Electronic Mail System
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: Unknown
        Source_Currentness_Reference: Unknown
    Source_Citation_Abbreviation: None
    Source_Contribution: Hydrography information for Columbia River
Process_Step:
    Process_Description:
        The main source of data used to depict the wetlands for this data layer was the Habitat Types of the Lower Columbia River provided by the Lower Columbia River Estuary Partnership. Adjustments to the polygons were made in cases where a wetland polygon was located partially or completely within a water polygon from the HYDRO coverage. The polygons were also classified with the NOAA's ESI classification. No other adjustments were made to the original data.
    Process_Date: 200408
    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 rings
            Point_and_Vector_Object_Count: 6078
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Area point
            Point_and_Vector_Object_Count: 6078
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Complete chain
            Point_and_Vector_Object_Count: 9761
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Link
            Point_and_Vector_Object_Count: 360727
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Node, planar graph
            Point_and_Vector_Object_Count: 7529

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: 6378206.4
            Denominator_of_Flattening_Ratio: 294.978698

Entity_and_Attribute_Information:
    Detailed_Description:
        Entity_Type:
            Entity_Type_Label: NWI.PAT
            Entity_Type_Definition:
                The NWI.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: 10C
Enumerated_Domain_Value_Definition: Swamps
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 Columbia River
  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: 200411
  Metadata_Review_Date: 200411
  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 2.8.2 on Fri Dec 10 13:53:59 2004

Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
            Publication_Date: 200411
            Title: Columbia River ESI: BIRDS (Bird Polygons)
            Edition: First
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Columbia River
            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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
    Description:
        Abstract:
            This data set contains sensitive biological resource data for wading birds, shorebirds, waterfowl, diving birds, seabirds, passerine birds, gulls, and terns in Columbia River. Vector polygons in this data set represent locations of bird nesting, resting, feeding, migratory staging, and wintering sites. Species-specific abundance, seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer.

            This data set comprises a portion of the Environmental Sensitivity Index (ESI) data for Columbia River. 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 Columbia River 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: 1979

Ending_Date: 2004

Currentness_Reference:

The biological data were compiled during 2003-2004. 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: -124.125

East_Bounding_Coordinate: -120.67375

North_Bounding_Coordinate: 46.375

South_Bounding_Coordinate: 45.3

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: Bird

Place:

Place_Keyword_Thesaurus: None

Place_Keyword: Columbia River

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 Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.

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, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, nwi.e00, reptiles.e00, socecon.e00, t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, runs_dat, 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 bird nesting, migratory staging, feeding, and wintering concentration areas. Portions of this information were adapted from Washington Priority Habitat digital data. Contact Washington Department of Fish and Wildlife (WDFW) for additional information on this database. See also the NESTS (Nest Points) data layer, part of the larger Columbia River ESI database, for additional bird information. These data do not necessarily represent all bird occurrences in the Columbia River area. The following species are included in this data set: (Species_ID, Common Name, Scientific Name, if applicable): 7, Western grebe, Aechmophorus occidentalis; 8, Double-crested cormorant, Phalacrocorax auritus; 9, Brandt's cormorant, Phalacrocorax penicillatus; 10, Pelagic cormorant, Phalacrocorax pelagicus; 11, Tundra swan, Cygnus columbianus; 12, Canada goose, Branta Canadensis; 14, Greater white-fronted goose, Anser albifrons; 16, Mallard, Anas platyrhynchos; 17, Northern pintail, Anas acuta; 18, Green-winged teal, Anas crecca; 21, Canvasback, Aythya valisineria; 24, Common goldeneye, Bucephala clangula; 28, Harlequin duck, Histrionicus histrionicus; 29, White-winged scoter, Melanitta fusca; 30, Surf scoter, Melanitta perspicillata; 32, Common merganser, Mergus merganser; 34, American coot, Fulica Americana; 36, Glaucous-winged gull, Larus glaucescens; 37, Western gull, Larus occidentalis; 40, Ring-billed gull, Larus delawarensis; 54,

Great blue heron, Ardea herodias; 56, Spotted sandpiper, Actitis macularia; 63, Dunlin, Calidris alpine; 66, Western sandpiper, Calidris mauri; 67, Sanderling, Calidris alba; 70, Killdeer, Charadrius vociferous; 76, Bald eagle, Haliaeetus leucocephalus; 77, Osprey, Pandion haliaetus; 88, Great egret, Ardea alba; 97, Green heron, Butorides virescens; 107, Peregrine falcon, Falco peregrinus; 118, Brown pelican, Pelecanus occidentalis; 136, Caspian tern, Sterna caspia; 169, American wigeon, Anas Americana; 170, Trumpeter swan, Cygnus buccinator; 171, Dusky Canada goose, Branta canadensis occidentalis; 172, Sandhill crane, Grus Canadensis; 191, Wood duck, Aix sponsa; 273, Geese; 299, Scaup, Aythya spp.; 462, Loons, Gavia spp.; 596, Purple martin, Progne subis; 1001, Gulls; 1002, Shorebirds; 1003, Waterfowl; 1004, Wading birds; 1013, Dabbling ducks; 1014, Diving ducks; 1021, Ducks; 1026, Grebes; 1027, Swans, Cygnus spp.

Positional_Accuracy:
    Horizontal_Positional_Accuracy:
        Horizontal_Positional_Accuracy_Report:
            Most of the spatial components of the biological data sets 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 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: North, J., Oregon Department of Fish and Wildlife (ODFW)
                Publication_Date: 200402
                Title: Fish, Bird, and Mammal Distributions along the Columbia River
                Geospatial_Data_Presentation_Form: Expert knowledge
                Publication_Information:
                    Publication_Place: Unpublished material
                    Publisher: Unpublished material
            Type_of_Source_Media: Personal communication
            Source_Time_Period_of_Content:
                Time_Period_Information:
                    Single_Date/Time:
                        Calendar_Date: 200402
                Source_Currentness_Reference: Date of communication
            Source_Citation_Abbreviation: None
            Source_Contribution: Distribution information for birds
    Source_Information:
        Source_Citation:
            Citation_Information:
                Originator: Rien, T., Oregon Department of Fish and Wildlife (ODFW)
                Publication_Date: 200402
                Title: Distribution of Wildlife along the Columbia River
                Geospatial_Data_Presentation_Form: Expert knowledge
                Publication_Information:
                    Publication_Place: Unpublished material
                    Publisher: Unpublished material
            Type_of_Source_Media: Personal communication
            Source_Time_Period_of_Content:
                Time_Period_Information:
                    Single_Date/Time:
                        Calendar_Date: 200402
            Source_Currentness_Reference: Date of communication
            Source_Citation_Abbreviation: None

   Source_Contribution: Distribution information for birds
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator:
        Van Der Naald, W., Oregon Department of Fish and Wildlife
        (ODFW)
      Publication_Date: 200402
      Title:
        Distribution of Fish, Birds, and Mammals along the Columbia
        River
      Geospatial_Data_Presentation_Form: Expert knowledge
      Publication_Information:
        Publication_Place: Unpublished material
        Publisher: Unpublished material
  Type_of_Source_Media: Personal communication
  Source_Time_Period_of_Content:
    Time_Period_Information:
      Single_Date/Time:
        Calendar_Date: 200402
    Source_Currentness_Reference: Date of communication
  Source_Citation_Abbreviation: None
  Source_Contribution: Distribution information for birds
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: Kohl, K., Oregon Department of Fish and Wildlife (ODFW)
      Publication_Date: 200401
      Title: Bird and Mammal Distribution along the Columbia River
      Geospatial_Data_Presentation_Form: Expert knowledge
      Publication_Information:
        Publication_Place: Unpublished material
        Publisher: Unpublished material
  Type_of_Source_Media: Personal communication
  Source_Time_Period_of_Content:
    Time_Period_Information:
      Single_Date/Time:
        Calendar_Date: 200401
    Source_Currentness_Reference: Date of communication
  Source_Citation_Abbreviation: None
  Source_Contribution: Distribution and seasonality information for birds
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator:
        Meyer, B., National Oceanic and Atmospheric Administration
        (NOAA)
      Publication_Date: 200402
      Title:
        Fish, Bird, Mammal, and Plant Distributions in the Lower
        Columbia River
      Geospatial_Data_Presentation_Form: Expert Knowledge
      Publication_Information:
        Publication_Place: Unpublished material
        Publisher: Unpublished material
  Type_of_Source_Media: Personal communication
  Source_Time_Period_of_Content:
    Time_Period_Information:
      Single_Date/Time:
        Calendar_Date: 200402

Source_Currentness_Reference: Date of communication
Source_Citation_Abbreviation: None
Source_Contribution: Distribution and seasonality information for birds
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: Collis, K.; Roby, D. et al.
            Publication_Date: 200311
            Title:
                Caspian Tern Research on the Lower Columbia River, Draft 2003
                Season Summary
            Geospatial_Data_Presentation_Form: Hardcopy Text
            Publication_Information:
                Publication_Place: Unpublished material
                Publisher: Unpublished material
    Type_of_Source_Media: Paper
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 200311
    Source_Currentness_Reference: Publication date
    Source_Citation_Abbreviation: None
    Source_Contribution: Distribution and seasonality information for Caspian Terns
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: Oregon Important Bird Areas
            Publication_Date: 2003
            Title: Oregon's Important Bird Areas, East Sand Island
            Geospatial_Data_Presentation_Form: Hardcopy Text
            Publication_Information:
                Publication_Place: Unpublished material
                Publisher: Unpublished material
    Type_of_Source_Media: Online
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 2003
    Source_Currentness_Reference: Publication date
    Source_Citation_Abbreviation: None
    Source_Contribution: Distribution and seasonality of birds for East Sand Island
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: U.S. Fish and Wildlife Service (USFWS)
            Publication_Date: 1981
            Title: Hoquiam Washington-Oregon, Pacific Coast Ecological Inventory
            Geospatial_Data_Presentation_Form: Hardcopy Map
            Publication_Information:
                Publication_Place: Washington, D.C.
                Publisher: U.S. Government Printing Office
    Source_Scale_Denominator: 250,000
    Type_of_Source_Media: Paper
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 1981
    Source_Currentness_Reference: Publication date
    Source_Citation_Abbreviation: None
    Source_Contribution: Distribution information for birds

Source_Information:
    Source_Citation:
        Citation_Information:
            Originator:
                Sutherland, B., Oregon Department of Environmental Quality (ODEQ)
            Publication_Date: 1979
            Title:
                Oil Spill Protection Plan for the Natural Resources of the Lower Columbia River
            Geospatial_Data_Presentation_Form: Hardcopy Map
            Publication_Information:
                Publication_Place: Unknown
                Publisher: Unknown
    Source_Scale_Denominator: Unknown
    Type_of_Source_Media: Paper
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 1979
        Source_Currentness_Reference: Publication date
    Source_Citation_Abbreviation: None
    Source_Contribution: Distribution information for birds
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: Anderson, E., U.S. Fish and Wildlife Service (USFWS)
            Publication_Date: 200401
            Title: Distribution of Wildlife on the Lower Columbia River
            Geospatial_Data_Presentation_Form: Expert Knowledge
            Publication_Information:
                Publication_Place: Unpublished material
                Publisher: Unpublished material
    Type_of_Source_Media: Personal communication
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 200401
        Source_Currentness_Reference: Date of communication
    Source_Citation_Abbreviation: None
    Source_Contribution: Distribution and seasonality information for birds
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: Clark, A., U.S. Fish and Wildlife Service (USFWS)
            Publication_Date: 200402
            Title:
                Distribution of Fish, Birds, Plants, and Mammals in the Columbia River
            Geospatial_Data_Presentation_Form: Expert Knowledge
            Publication_Information:
                Publication_Place: Unpublished material
                Publisher: Unpublished material
    Type_of_Source_Media: Personal communication
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 200402
        Source_Currentness_Reference: Publication date
    Source_Citation_Abbreviation: None

        Source_Contribution: Distribution and seasonality information for birds
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: Isaacs, F.
            Publication_Date: 2004
            Title: Bald Eagle Nesting Sites in Oregon and Washington
            Geospatial_Data_Presentation_Form: Spreadsheet
            Publication_Information:
                Publication_Place: Unpublished material
                Publisher: Unpublished material
    Source_Scale_Denominator: 24,000
    Type_of_Source_Media: CD-ROM
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 2004
        Source_Currentness_Reference: Publication date
    Source_Citation_Abbreviation: None
    Source_Contribution: Nesting sites for bald eagles in Washington and Oregon
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: Nebeker, M., Oregon Department of Fish and Wildlife
            (ODFW)
            Publication_Date: 200402
            Title: Distribution of Wildlife on Sauvie Island and Surrounding Areas
            Geospatial_Data_Presentation_Form: Expert Knowledge
            Publication_Information:
                Publication_Place: Unpublished material
                Publisher: Unpublished material
    Type_of_Source_Media: Personal communication
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 200402
        Source_Currentness_Reference: Date of communication
    Source_Citation_Abbreviation: None
    Source_Contribution:
        Distribution and seasonality information of birds on Sauvie Island and surrounding
        areas
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: Columbia River Estuary Data Development Program
            Publication_Date: 1984
            Title:
                The Columbia River Estuary Atlas of Physical and Biological
                Characteristics
            Geospatial_Data_Presentation_Form: Hardcopy atlas
            Publication_Information:
                Publication_Place: Seattle, Washington
                Publisher: Northwest Cartography, Inc.
    Source_Scale_Denominator: 250,000
    Type_of_Source_Media: Paper
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 1984
        Source_Currentness_Reference: Publication date

Source_Citation_Abbreviation: None
Source_Contribution: Distribution and seasonality information for birds
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: Washington Department of Fish and Wildlife (WDFW)
            Publication_Date: 2004
            Title: Priority Habitat Data for the Lower Columbia River
            Geospatial_Data_Presentation_Form: Vector digital data
            Publication_Information:
                Publication_Place: Unknown
                Publisher: Washington Department of Fish and Wildlife
    Source_Scale_Denominator: 24,000
    Type_of_Source_Media: CD-ROM
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 2004
        Source_Currentness_Reference: Publication Date
    Source_Citation_Abbreviation: None
    Source_Contribution: Distribution and seasonality information for birds
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator:
                Engler, J.; Friez, D.; Anderson E., U.S. Fish and Wildlife Service
                (USFWS); Anderson, D., Washington Department of Fish and
                Wildlife (WDFW)
            Publication_Date: 2004
            Title:
                Final Status Report on the 2003 Greater Sandhill Crane Nesting
                Season
            Geospatial_Data_Presentation_Form: Hardcopy text
            Publication_Information:
                Publication_Place: Ridgefield, Washington
                Publisher: Ridgefield National Wildlife Refuge Complex
    Type_of_Source_Media: Paper
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 2003
        Source_Currentness_Reference: Survey date
    Source_Citation_Abbreviation: None
    Source_Contribution: Seasonality information for the Greater Sandhill Crane
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: Anderson, E., U.S. Fish and Wildlife Service (USFWS)
            Publication_Date: 200401
            Title: Columbia Gorge Internal Draft CCP/EA
            Geospatial_Data_Presentation_Form: Hardcopy text
            Publication_Information:
                Publication_Place: Unpublished material
                Publisher: Unpublished material
    Type_of_Source_Media: Paper
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 200401
        Source_Currentness_Reference: Publication date

Source_Citation_Abbreviation: None
Source_Contribution: Seasonality information for birds
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 Oregon Department of Fish and Wildlife (ODFW), Washington Department of Fish and Wildlife (WDFW), and U.S. Fish and Wildlife Service (USFWS); (2) numerous published and unpublished reports; and (3) information adapted from Washington Priority Habitat data. (Contact WDFW for more information regarding the Washington Priority Habitat data.) Information gathered during initial interviews and from hardcopy sources was compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles.

The compiled data were digitized off of the base maps into an ArcInfo system to create the BIRDS data layer. All ESI, biology, and human-use data were plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews was conducted to review the maps. Edits to the BIRDS data layer were made based on the recommendations of the resource experts, and final hardcopy maps were created.

Concentration information varied, and therefore for some species and locations, descriptive terms such as "HIGH" or "PRESENT" were used, while for others, numerical counts of individuals or pairs were used. When exact concentrations varied from year to year, concentration ranges such as "1000S", "100-500", or "1000-2000-PAIRS" were used. Generally, these numbers represented the peak concentrations of birds present or potentially present. If no concentration information was available from any source, the concentration field was populated with "-". Concentration and seasonality information was provided by resource experts, or was extracted from published sources, reports, and survey data.

Process_Date: 200408
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 rings
            Point_and_Vector_Object_Count: 863
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Area point
            Point_and_Vector_Object_Count: 863
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Complete chain

Point_and_Vector_Object_Count: 1439
SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 228612
SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 1270

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: 6378206.4
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 Columbia River atlas, the number is 41), 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 representing bird nesting, resting, feeding, migratory staging, and wintering 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 (41), 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:* 410100002
>>>> *Range_Domain_Maximum:* 410100861
> *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:* 41000001
>>>> *Range_Domain_Maximum:* 41000131

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:* 41000001
>>>> *Range_Domain_Maximum:* 41000290

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 (41), 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:* 410100002
>>>> *Range_Domain_Maximum:* 413400015

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:* 041000001
>>>> *Range_Domain_Maximum:* 041000290
> *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 nesting, resting, feeding, or wintering site, or a term that describes relative abundance of birds at a particular site. The field may contain counts of individuals (XX) or pairs of birds (XX-PAIRS). When exact concentrations varied from year to year, concentration ranges such as "1000S", "100-500", or "1000-2000-PAIRS" are used. These numbers represent the peak numbers of birds that may potentially be present at a site. In cases where no quantitative count data were available, the field may either be blank, or contain descriptive terms such as "HIGH" or "PRESENT". If no concentration information was available from any source, the field is populated with "-". Counts were derived from a variety of surveys, 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: 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: fav
        Enumerated_Domain_Value_Definition: Floating aquatic vegetation
        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: 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: passerine
        Enumerated_Domain_Value_Definition: Passerine 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: 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: ungulate
        Enumerated_Domain_Value_Definition: Ungulate
        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:
    Attribute_Label: NHP
    Attribute_Definition:
        Natural Heritage Program global ranking. When no information was provided on
        the global rank for a species, the field is blank.
    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: No information was provided on
            the global rank for the species
            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
        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
            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
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
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
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, and to G_SOURCE and
            S_SOURCE in the BIORES table.
        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: Scale denominator of the source
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: integer
            Enumerated_Domain_Value_Definition: Any integer
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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:
        Enumerated_Domain:
            Enumerated_Domain_Value: MM/DD/YY
            Enumerated_Domain_Value_Definition: Month/Day/Year
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: MM/YYYY
            Enumerated_Domain_Value_Definition: Month/Year
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: UNKNOWN
            Enumerated_Domain_Value_Definition: Date information unknown
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Detailed_Description:
    Entity_Type:
        Entity_Type_Label: STATUS
        Entity_Type_Definition:
            The data table STATUS identifies the species that are listed as threatened or
            endangered by a state or federal 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: 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: U.S. Fish and Wildlife Service
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: T
            Enumerated_Domain_Value_Definition: Threatened on state list
            Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife Service
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: C
            Enumerated_Domain_Value_Definition: Species of Special Concern
            Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife Service

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: U.S. Fish and Wildlife

Service
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: T
  Enumerated_Domain_Value_Definition: Threatened on federal list
  Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
  Service
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: C
  Enumerated_Domain_Value_Definition: Species of Special Concern
  Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
  Service

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: 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: 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 Columbia River
 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: 200411
 Metadata_Review_Date: 200411
 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 2.8.2 on Tue Dec 07 17:18:48 2004

Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
   Publication_Date: 200411
   Title: Columbia River ESI: NESTS (Nest Points)
   Edition: First
   Geospatial_Data_Presentation_Form: Vector digital data
   Series_Information:
    Series_Name: None
    Issue_Identification: Columbia River
   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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
 Description:
  Abstract:
   This data set contains sensitive biological resource data for bird nesting sites in the Columbia River area. Vector points in this data set represent locations of bird 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 Columbia River. 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 Columbia River 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:* 1979
>>> *Ending_Date:* 2004
>
> *Currentness_Reference:*
>> The biological data were compiled during 2003-2004. The currentness dates for these 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:* -124.125
>> *East_Bounding_Coordinate:* -120.67375
>> *North_Bounding_Coordinate:* 46.375
>> *South_Bounding_Coordinate:* 45.3

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:* Columbia River

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 Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.

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, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, nwi.e00, reptiles.e00, socecon.e00, t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, runs_dat, 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 bird nesting sites. Portions of this information were adapted from Washington Priority Habitat digital data. Contact Washington Department of Fish and Wildlife (WDFW) for additional information on this database. See also the BIRDS (Bird Polygons) data layer, part of the larger Columbia River ESI database, for additional bird information. These data do not necessarily represent all nest occurrences in the Columbia River area. The following species are included in this data set: (Species_ID, Common Name, Scientific Name, if applicable): 54, Great blue heron, Ardea herodias; 76, Bald eagle, Haliaeetus leucocephalus; 77, Osprey, Pandion haliaetus; 107, Peregrine falcon, Falco peregrinus.
   Positional_Accuracy:
      Horizontal_Positional_Accuracy:
         Horizontal_Positional_Accuracy_Report:
            Most of the spatial components of the biological data sets 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 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: North, J., Oregon Department of Fish and Wildlife (ODFW)
                Publication_Date: 200402
                Title: Fish, Bird, and Mammal Distributions along the Columbia River
                Geospatial_Data_Presentation_Form: Expert knowledge
                Publication_Information:
                    Publication_Place: Unpublished material
                    Publisher: Unpublished material
        Type_of_Source_Media: Personal communication
        Source_Time_Period_of_Content:
            Time_Period_Information:
                Single_Date/Time:
                    Calendar_Date: 200402
            Source_Currentness_Reference: Date of communication
        Source_Citation_Abbreviation: None
        Source_Contribution: Distribution information for birds
    Source_Information:
        Source_Citation:
            Citation_Information:
                Originator:
                    Van Der Naald, W., Oregon Department of Fish and Wildlife (ODFW)
                Publication_Date: 200402
                Title:
                    Distribution of Fish, Birds, and Mammals along the Columbia River
                Geospatial_Data_Presentation_Form: Expert knowledge
                Publication_Information:
                    Publication_Place: Unpublished material
                    Publisher: Unpublished material
        Type_of_Source_Media: Personal communication
        Source_Time_Period_of_Content:
            Time_Period_Information:
                Single_Date/Time:
                    Calendar_Date: 200402
            Source_Currentness_Reference: Date of communication
        Source_Citation_Abbreviation: None
        Source_Contribution: Distribution information for birds
    Source_Information:
        Source_Citation:
            Citation_Information:
                Originator: Kohl, K., Oregon Department of Fish and Wildlife (ODFW)
                Publication_Date: 200401
                Title: Bird and Mammal Distribution along the Columbia River
                Geospatial_Data_Presentation_Form: Expert knowledge
                Publication_Information:
                    Publication_Place: Unpublished material
                    Publisher: Unpublished material
        Type_of_Source_Media: Personal communication
        Source_Time_Period_of_Content:

Time_Period_Information:
    Single_Date/Time:
        Calendar_Date: 200401
Source_Currentness_Reference: Date of communication
Source_Citation_Abbreviation: None
Source_Contribution: Distribution and seasonality information for birds
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator:
                Meyer, B., National Oceanic and Atmospheric Administration (NOAA)
            Publication_Date: 200402
            Title:
                Fish, Bird, Mammal, and Plant Distributions in the Lower Columbia River
            Geospatial_Data_Presentation_Form: Expert Knowledge
            Publication_Information:
                Publication_Place: Unpublished material
                Publisher: Unpublished material
    Type_of_Source_Media: Personal communication
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 200402
    Source_Currentness_Reference: Date of communication
    Source_Citation_Abbreviation: None
    Source_Contribution: Distribution and seasonality information for birds
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: U.S. Fish and Wildlife Service (USFWS)
            Publication_Date: 1981
            Title: Hoquiam Washington-Oregon, Pacific Coast Ecological Inventory
            Geospatial_Data_Presentation_Form: Hardcopy Map
            Publication_Information:
                Publication_Place: Washington, D.C.
                Publisher: U.S. Government Printing Office
    Source_Scale_Denominator: 250,000
    Type_of_Source_Media: Paper
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 1981
    Source_Currentness_Reference: Publication date
    Source_Citation_Abbreviation: None
    Source_Contribution: Distribution information for birds
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator:
                Sutherland, B., Oregon Department of Environmental Quality (ODEQ)
            Publication_Date: 1979
            Title:
                Oil Spill Protection Plan for the Natural Resources of the Lower Columbia River
            Geospatial_Data_Presentation_Form: Hardcopy Map
            Publication_Information:
                Publication_Place: Unknown

Publisher: Unknown
Source_Scale_Denominator: Unknown
Type_of_Source_Media: Paper
Source_Time_Period_of_Content:
    Time_Period_Information:
        Single_Date/Time:
            Calendar_Date: 1979
    Source_Currentness_Reference: Publication date
Source_Citation_Abbreviation: None
Source_Contribution: Distribution information for birds
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: Anderson, E., U.S. Fish and Wildlife Service (USFWS)
            Publication_Date: 200401
            Title: Distribution of Wildlife on the Lower Columbia River
            Geospatial_Data_Presentation_Form: Expert Knowledge
            Publication_Information:
                Publication_Place: Unpublished material
                Publisher: Unpublished material
    Type_of_Source_Media: Personal communication
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 200401
        Source_Currentness_Reference: Date of communication
    Source_Citation_Abbreviation: None
    Source_Contribution: Distribution and seasonality information for birds
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: Clark, A., U.S. Fish and Wildlife Service (USFWS)
            Publication_Date: 200402
            Title:
                Distribution of Fish, Birds, Plants, and Mammals in the Columbia River
            Geospatial_Data_Presentation_Form: Expert Knowledge
            Publication_Information:
                Publication_Place: Unpublished material
                Publisher: Unpublished material
    Type_of_Source_Media: Personal communication
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 200402
        Source_Currentness_Reference: Publication date
    Source_Citation_Abbreviation: None
    Source_Contribution: Distribution and seasonality information for birds
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: Isaacs, F.
            Publication_Date: 2004
            Title: Bald Eagle Nesting Sites in Oregon and Washington
            Geospatial_Data_Presentation_Form: Spreadsheet
            Publication_Information:
                Publication_Place: Unpublished material
                Publisher: Unpublished material
    Source_Scale_Denominator: 24,000
    Type_of_Source_Media: CD-ROM

Source_Time_Period_of_Content:
    Time_Period_Information:
        Single_Date/Time:
            Calendar_Date: 2004
    Source_Currentness_Reference: Publication date
Source_Citation_Abbreviation: None
Source_Contribution: Nesting sites for bald eagles in Washington and Oregon
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: Nebeker, M., Oregon Department of Fish and Wildlife (ODFW)
            Publication_Date: 200402
            Title: Distribution of Wildlife on Sauvie Island and Surrounding Areas
            Geospatial_Data_Presentation_Form: Expert Knowledge
            Publication_Information:
                Publication_Place: Unpublished material
                Publisher: Unpublished material
    Type_of_Source_Media: Personal communication
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 200402
        Source_Currentness_Reference: Date of communication
    Source_Citation_Abbreviation: None
    Source_Contribution:
        Distribution and seasonality information of birds on Sauvie Island and surrounding areas
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: Anderson, E., U.S. Fish and Wildlife Service (USFWS)
            Publication_Date: 200401
            Title: Columbia Gorge Internal Draft CCP/EA
            Geospatial_Data_Presentation_Form: Hardcopy text
            Publication_Information:
                Publication_Place: Unpublished material
                Publisher: Unpublished material
    Type_of_Source_Media: Paper
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 200401
        Source_Currentness_Reference: Publication date
    Source_Citation_Abbreviation: None
    Source_Contribution: Seasonality information for birds
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: Washington Department of Fish and Wildlife (WDFW)
            Publication_Date: 2004
            Title: Priority Habitat Data for the Lower Columbia River
            Geospatial_Data_Presentation_Form: Vector digital data
            Publication_Information:
                Publication_Place: Unknown
                Publisher: Washington Department of Fish and Wildlife
    Source_Scale_Denominator: 24,000
    Type_of_Source_Media: CD-ROM
    Source_Time_Period_of_Content:
        Time_Period_Information:

<div style="text-align: center">

Single_Date/Time:
Calendar_Date: 2004
Source_Currentness_Reference: Publication Date
</div>

Source_Citation_Abbreviation: None
Source_Contribution: Distribution and seasonality information for birds
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 Oregon Department of Fish and Wildlife (ODFW), Washington Department of Fish and Wildlife (WDFW), and U.S. Fish and Wildlife Service (USFWS); (2) numerous published and unpublished reports; and (3) information adapted from Washington Priority Habitat data. Contact WDFW for more information regarding the Washington Priority Habitat data. Information gathered during initial interviews and from hardcopy sources was compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles.

The compiled data were digitized off of the base maps into an ArcInfo system to create the NESTS data layer. All ESI, biology, and human-use data were plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews was conducted to review the maps. Edits to the NESTS data layer were made based on the recommendations of the resource experts, and final hardcopy maps were created.

Concentration information varied. For most species, numerical counts or numerical ranges of nesting pairs were used. Generally, these numbers represented the peak concentrations of birds present or potentially present. In cases where no concentration information was available, the field was populated with "-". Concentration and seasonality information was provided by resource experts, or was extracted from published sources, reports, and survey data.

Process_Date: 200408
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: 71

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: 6378206.4
  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 Columbia River atlas, the number is 41), 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

representing bird 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 (41), element number (5), and record number.

Attribute_Definition_Source: NOAA

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 410500001

Range_Domain_Maximum: 410500071

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: 41000008

Range_Domain_Maximum: 41000081

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: 41000001

Range_Domain_Maximum: 41000290

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 (41), 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: 410100002

Range_Domain_Maximum: 413400015

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:* 041000001
>>> *Range_Domain_Maximum:* 041000290

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 contains counts of nesting pairs at a particular site. For most species, numerical counts (X-PAIRS) or numerical ranges (X-XX-PAIRS) were used. Generally, these numbers represented the peak concentrations of birds present or potentially present. In cases where no concentration data were available, the field was populated with "-". Counts were derived from a variety of surveys, 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: 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: fav
            Enumerated_Domain_Value_Definition: Floating aquatic vegetation
            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: 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: passerine
            Enumerated_Domain_Value_Definition: Passerine 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: 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: ungulate
            Enumerated_Domain_Value_Definition: Ungulate
            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:
  Attribute_Label: NHP
  Attribute_Definition:
    Natural Heritage Program global ranking. When no information was provided on
    the global rank for a species, the field is blank.
  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: No information was provided on
      the global rank for the species
      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

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
        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
        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
        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
            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, and to G_SOURCE and
S_SOURCE in the BIORES table.
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: Scale denominator of the source
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: integer
Enumerated_Domain_Value_Definition: Any integer
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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:
Enumerated_Domain:

Enumerated_Domain_Value: MM/DD/YY
Enumerated_Domain_Value_Definition: Month/Day/Year
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: MM/YYYY
        Enumerated_Domain_Value_Definition: Month/Year
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: UNKNOWN
        Enumerated_Domain_Value_Definition: Date information unknown
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Detailed_Description:
    Entity_Type:
        Entity_Type_Label: STATUS
        Entity_Type_Definition:
            The data table STATUS identifies the species that are listed as threatened or
            endangered by a state or federal 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:* 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:* U.S. Fish and Wildlife Service
>   *Attribute_Domain_Values:*
>>   *Enumerated_Domain:*
>>>   *Enumerated_Domain_Value:* T
>>>   *Enumerated_Domain_Value_Definition:* Threatened on state list
>>>   *Enumerated_Domain_Value_Definition_Source:* U.S. Fish and Wildlife Service
>   *Attribute_Domain_Values:*
>>   *Enumerated_Domain:*
>>>   *Enumerated_Domain_Value:* C
>>>   *Enumerated_Domain_Value_Definition:* Species of Special Concern
>>>   *Enumerated_Domain_Value_Definition_Source:* U.S. Fish and Wildlife Service
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:* U.S. Fish and Wildlife Service
>   *Attribute_Domain_Values:*
>>   *Enumerated_Domain:*
>>>   *Enumerated_Domain_Value:* T
>>>   *Enumerated_Domain_Value_Definition:* Threatened on federal list
>>>   *Enumerated_Domain_Value_Definition_Source:* U.S. Fish and Wildlife Service
>   *Attribute_Domain_Values:*
>>   *Enumerated_Domain:*
>>>   *Enumerated_Domain_Value:* C
>>>   *Enumerated_Domain_Value_Definition:* Species of Special Concern
>>>   *Enumerated_Domain_Value_Definition_Source:* U.S. Fish and Wildlife Service
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: 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: 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 Columbia River
    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: 200411
    Metadata_Review_Date: 200411
    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 2.8.2 on Tue Dec 07 17:30:17 2004

Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
            Publication_Date: 200411
            Title: Columbia River ESI: FISH (Fish Polygons)
            Edition: First
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Columbia River
            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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
    Description:
        Abstract:
            This data set contains sensitive biological resource data for marine, estuarine, anadromous, and freshwater fish species in Columbia River. Vector polygons in this data set represent locations of fish distribution, concentration areas, spawning areas, and salmon spawning runs. Species specific abundance, seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer.

            This data set comprises a portion of the Environmental Sensitivity Index (ESI) data for Columbia River. ESI data characterize the marine and coastal environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources. See also the FISHL (Fish Lines) data layer, part of the larger Columbia River ESI database, for additional

fish information.

Purpose:

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

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1979

Ending_Date: 2004

Currentness_Reference:

The biological data were compiled during 2003-2004. The currentness dates for these 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: -124.125

East_Bounding_Coordinate: -120.67375

North_Bounding_Coordinate: 46.375

South_Bounding_Coordinate: 45.3

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: Columbia River

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 Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.

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, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, nwi.e00, reptiles.e00, socecon.e00, t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, runs_dat, 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 "resources 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, digital data, and hardcopy maps. Salmon spawning runs were adapted by NOAA from Washington Department of Fish and Wildlife (WDFW) and Oregon Fish and Wildlife digital data. Contact these agencies or NOAA for more information concerning this database. See also the FISHL (Fish Lines) data layer, part of the larger Columbia River ESI database, for additional fish information. These data do not necessarily represent all fish occurrences in Columbia River. The following species are included in this data set: (Species_ID, Common Name, Scientific Name, if applicable): 12, Starry flounder, Platichthys stellatus; 43, White sturgeon, Acipenser transmontanus; 44, Green sturgeon, Acipenser medirostris; 45, Coastal Cutthroat trout, Oncorhynchus clarkii clarkia; 69, Coho salmon, Oncorhynchus kisutch; 71, Sockeye salmon, Oncorhynchus nerka; 72, Chum salmon, Oncorhynchus keta; 77, Eulachon, Thaleichthys pacificus; 83, Salmon; 87, American shad, Alosa sapidissima; 162, Common carp, Cyprinus carpio; 180, Smallmouth bass, Micropterus dolomieu; 188, Walleye, Stizostedion vitreum vitreum; 202, White crappie, Pomoxis annularis; 219, Pacific lamprey, Lampetra tridentate; 490, Chinook salmon (fall), Oncorhynchus tshawytscha (fall); 493, Chinook salmon (spring), Oncorhynchus tshawytscha (spring); 962, Rainbow trout (summer), Oncorhynchus mykiss (summer); 963, Rainbow trout (winter), Oncorhynchus mykiss (winter); 964, Bull trout, Salvelinus

confluentus; 965, Chinook salmon (summer), Oncorhynchus tshawytscha (summer).
Positional_Accuracy:
    Horizontal_Positional_Accuracy:
        Horizontal_Positional_Accuracy_Report:
            Most of the spatial components of the biological data sets 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 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: North, J., Oregon Department of Fish and Wildlife (ODFW)
                Publication_Date: 200402
                Title: Fish, Bird, and Mammal Distributions along the Columbia River
                Geospatial_Data_Presentation_Form: Expert knowledge
                Publication_Information:
                    Publication_Place: Unpublished material
                    Publisher: Unpublished material
            Type_of_Source_Media: Personal communication
            Source_Time_Period_of_Content:
                Time_Period_Information:
                    Single_Date/Time:
                        Calendar_Date: 200402
                Source_Currentness_Reference: Date of communication
            Source_Citation_Abbreviation: None
            Source_Contribution: Distribution and seasonality information for fish
    Source_Information:
        Source_Citation:
            Citation_Information:
                Originator: Rien, T., Oregon Department of Fish and Wildlife (ODFW)
                Publication_Date: 200402
                Title: Distribution of Wildlife along the Columbia River
                Geospatial_Data_Presentation_Form: Expert knowledge
                Publication_Information:
                    Publication_Place: Unpublished material
                    Publisher: Unpublished material
            Type_of_Source_Media: Personal communication
            Source_Time_Period_of_Content:
                Time_Period_Information:
                    Single_Date/Time:
                        Calendar_Date: 200402
                Source_Currentness_Reference: Date of communication
            Source_Citation_Abbreviation: None
            Source_Contribution: Distribution and seasonality information for fish
    Source_Information:
        Source_Citation:
            Citation_Information:
                Originator:
                    Van Der Naald, W., Oregon Department of Fish and Wildlife (ODFW)
                Publication_Date: 200402
                Title:

Distribution of Fish, Birds, and Mammals along the Columbia River
Geospatial_Data_Presentation_Form: Expert knowledge
Publication_Information:
Publication_Place: Unpublished material
Publisher: Unpublished material
Type_of_Source_Media: Personal communication
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 200402
Source_Currentness_Reference: Date of communication
Source_Citation_Abbreviation: None
Source_Contribution: Distribution and seasonality information for fish
Source_Information:
Source_Citation:
Citation_Information:
Originator: Pribyl, S., Oregon Department of Fish and Wildlife (ODFW)
Publication_Date: 200401
Title: Fish Distribution in the Columbia River
Geospatial_Data_Presentation_Form: Expert knowledge
Publication_Information:
Publication_Place: Unpublished material
Publisher: Unpublished material
Type_of_Source_Media: Personal communication
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 200401
Source_Currentness_Reference: Date of communication
Source_Citation_Abbreviation: None
Source_Contribution: Distribution and seasonality information for fish
Source_Information:
Source_Citation:
Citation_Information:
Originator:
Meyer, B., National Oceanic and Atmospheric Administration (NOAA)
Publication_Date: 200402
Title:
Fish, Bird, Mammal, and Plant Distributions in the Lower Columbia River
Geospatial_Data_Presentation_Form: Expert Knowledge
Publication_Information:
Publication_Place: Unpublished material
Publisher: Unpublished material
Type_of_Source_Media: Personal communication
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 200402
Source_Currentness_Reference: Date of communication
Source_Citation_Abbreviation: None
Source_Contribution: Distribution and seasonality information for fish
Source_Information:
Source_Citation:
Citation_Information:
Originator: U.S. Fish and Wildlife Service (USFWS)
Publication_Date: 1981
Title: Hoquiam Washington-Oregon, Pacific Coast Ecological Inventory

Geospatial_Data_Presentation_Form: Hardcopy Map
Publication_Information:
    Publication_Place: Washington, D.C.
    Publisher: U.S. Government Printing Office
Source_Scale_Denominator: 250,000
Type_of_Source_Media: Paper
Source_Time_Period_of_Content:
    Time_Period_Information:
        Single_Date/Time:
            Calendar_Date: 1981
Source_Currentness_Reference: Publication date
Source_Citation_Abbreviation: None
Source_Contribution: Distribution information for fish
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator:
                Sutherland, B., Oregon Department of Environmental Quality
                (ODEQ)
            Publication_Date: 1979
            Title:
                Oil Spill Protection Plan for the Natural Resources of the Lower
                Columbia River
            Geospatial_Data_Presentation_Form: Hardcopy Map
            Publication_Information:
                Publication_Place: Unknown
                Publisher: Unknown
    Source_Scale_Denominator: Unknown
    Type_of_Source_Media: Paper
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 1979
    Source_Currentness_Reference: Publication date
    Source_Citation_Abbreviation: None
    Source_Contribution: Distribution information for fish
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: Anderson, E., U.S. Fish and Wildlife Service (USFWS)
            Publication_Date: 200401
            Title: Distribution of Wildlife on the Lower Columbia River
            Geospatial_Data_Presentation_Form: Expert Knowledge
            Publication_Information:
                Publication_Place: Unpublished material
                Publisher: Unpublished material
    Type_of_Source_Media: Personal communication
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 200401
    Source_Currentness_Reference: Date of communication
    Source_Citation_Abbreviation: None
    Source_Contribution: Distribution information for fish
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: Clark, A., U.S. Fish and Wildlife Service (USFWS)
            Publication_Date: 200402
            Title:

Distribution of Fish, Birds, Plants, and Mammals in the Columbia River
Geospatial_Data_Presentation_Form: Expert Knowledge
Publication_Information:
Publication_Place: Unpublished material
Publisher: Unpublished material
Type_of_Source_Media: Personal communication
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 200402
Source_Currentness_Reference: Publication date
Source_Citation_Abbreviation: None
Source_Contribution: Distribution and seasonality information for fish
Source_Information:
Source_Citation:
Citation_Information:
Originator:
Stone, S., National Oceanic and Atmospheric Administration (NOAA)
Publication_Date: 200402
Title: Anadromous Fish Data for Washington and Oregon
Geospatial_Data_Presentation_Form: Expert knowledge
Publication_Information:
Publication_Place: Unpublished material
Publisher: Unpublished material
Type_of_Source_Media: Personal communication
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 200402
Source_Currentness_Reference: Date of communication
Source_Citation_Abbreviation: None
Source_Contribution: Anadromous fish distributions
Source_Information:
Source_Citation:
Citation_Information:
Originator: Nebeker, M., Oregon Department of Fish and Wildlife (ODFW)
Publication_Date: 200402
Title: Distribution of Wildlife on Sauvie Island and Surrounding Areas
Geospatial_Data_Presentation_Form: Expert Knowledge
Publication_Information:
Publication_Place: Unpublished material
Publisher: Unpublished material
Type_of_Source_Media: Personal communication
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 200402
Source_Currentness_Reference: Date of communication
Source_Citation_Abbreviation: None
Source_Contribution:
Distribution information of fish on Sauvie Island and surrounding areas
Source_Information:
Source_Citation:
Citation_Information:
Originator: Columbia River Estuary Data Development Program
Publication_Date: 1984
Title:

The Columbia River Estuary Atlas of Physical and Biological Characteristics
Geospatial_Data_Presentation_Form: Hardcopy atlas
Publication_Information:
    Publication_Place: Seattle, Washington
    Publisher: Northwest Cartography, Inc.
Source_Scale_Denominator: 250,000
Type_of_Source_Media: Paper
Source_Time_Period_of_Content:
    Time_Period_Information:
        Single_Date/Time:
            Calendar_Date: 1984
    Source_Currentness_Reference: Publication date
Source_Citation_Abbreviation: None
Source_Contribution: Seasonality information for fish
Source_Information:
Source_Citation:
    Citation_Information:
        Originator: Washington Department of Fish and Wildlife
        Publication_Date: 2004
        Title: Salmon Information for the Lower Columbia River
        Geospatial_Data_Presentation_Form: Hardcopy text
        Publication_Information:
            Publication_Place: Olympia, Washington
            Publisher: Washington Department of Fish and Wildlife
Type_of_Source_Media: Online
Source_Time_Period_of_Content:
    Time_Period_Information:
        Single_Date/Time:
            Calendar_Date: 200402
    Source_Currentness_Reference: Date of communication
Source_Citation_Abbreviation: None
Source_Contribution: Seasonality information for Sockeye salmon
Source_Information:
Source_Citation:
    Citation_Information:
        Originator: Guy, D., Lower Columbia Fish Recovery Board
        Publication_Date: 2003
        Title: Recovery/Subbasin Plan Technical Document
        Geospatial_Data_Presentation_Form: Hardcopy text
        Publication_Information:
            Publication_Place: Unpublished material
            Publisher: Unpublished material
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:
    Time_Period_Information:
        Single_Date/Time:
            Calendar_Date: 2003
    Source_Currentness_Reference: Publication date
Source_Citation_Abbreviation: None
Source_Contribution: Seasonality information for fish
Source_Information:
Source_Citation:
    Citation_Information:
        Originator:
            Monaco, M., et al., National Oceanic and Atmospheric Administration
        Publication_Date: 1990
        Title:
            Distribution and Abundance of Fishes and Invertebrates in West

Coast Estuaries, ELMR Report No. 4
Geospatial_Data_Presentation_Form: Hardcopy text
Publication_Information:
Publication_Place: Silver Spring, Maryland
Publisher: NOAA/NOS Strategic Environmental Assessments
Division
Type_of_Source_Media: Paper
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 1990
Source_Currentness_Reference: Publication date
Source_Citation_Abbreviation: None
Source_Contribution: Seasonality information for fish
Process_Step:
Process_Description:
Three main sources of data were used to depict fish distribution and seasonality for
this data layer: (1) personal interviews with resource experts from the Oregon
Department of Fish and Wildlife (ODFW) and the U.S. Fish and Wildlife Service
(USFWS); (2) the 2003 Draft Lower Columbia Fish Recovery Board
Recovery/Subbasin Plan, Technical Foundation; and (3) NOAA synthesized digital
ODFW and WDFW anadromous fish arc coverages. Note that these arcs were
adapted from the original ODFW and WDFW data. Information gathered during
initial interviews and from hardcopy sources was compiled onto U.S. Geological
Survey 1:24,000 topographic quadrangles.

The compiled data were digitized off of the base maps into an ArcInfo system to
create the FISH data layer. All ESI, biology, and human-use data were plotted onto
hardcopy draft maps. Following the delivery of draft maps to the participating
resource experts, a second set of interviews was conducted to review the maps. Edits
to the FISH data layer were made based on the recommendations of the resource
experts, and final hardcopy maps were created.
Process_Date: 200408
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 rings
Point_and_Vector_Object_Count: 788
SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: Area point
Point_and_Vector_Object_Count: 788

SDTS_Terms_Description:
    SDTS_Point_and_Vector_Object_Type: Complete chain
    Point_and_Vector_Object_Count: 1337
SDTS_Terms_Description:
    SDTS_Point_and_Vector_Object_Type: Link
    Point_and_Vector_Object_Count: 218347
SDTS_Terms_Description:
    SDTS_Point_and_Vector_Object_Type: Node, planar graph
    Point_and_Vector_Object_Count: 1186

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: 6378206.4
            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 Columbia River atlas, the number is 41), 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 representing fish distribution, concentration areas, spawning areas, and salmon spawning runs. 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 (41), 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: 410200002
    Range_Domain_Maximum: 410200784
 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: 41000132
    Range_Domain_Maximum: 41000245

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: 41000001
    Range_Domain_Maximum: 41000290

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 (41), 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: 410100002
      Range_Domain_Maximum: 413400015

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: 041000001
        Range_Domain_Maximum: 041000290

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 concentration data were available for fish, so the CONC field may contain a descriptive term, such as "HIGH", or may be populated with "-", to indicate that no concentration information was available.
  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: 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: fav
          Enumerated_Domain_Value_Definition: Floating aquatic vegetation
          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: 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: passerine
          Enumerated_Domain_Value_Definition: Passerine 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: 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: ungulate
Enumerated_Domain_Value_Definition: Ungulate
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:
Attribute_Label: NHP
Attribute_Definition:
Natural Heritage Program global ranking. When no information was provided on the global rank for a species, the field is blank.
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: No information was provided on the global rank for the species
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
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
            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
            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
            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
            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, and to G_SOURCE and S_SOURCE in the BIORES table.
  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: Scale denominator of the source
        Attribute_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: integer
                Enumerated_Domain_Value_Definition: Any integer
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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:
            Enumerated_Domain:
                Enumerated_Domain_Value: MM/DD/YY
                Enumerated_Domain_Value_Definition: Month/Day/Year
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: MM/YYYY
                Enumerated_Domain_Value_Definition: Month/Year
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: UNKNOWN
                Enumerated_Domain_Value_Definition: Date information unknown
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Detailed_Description:
    Entity_Type:
        Entity_Type_Label: STATUS
        Entity_Type_Definition:
            The data table STATUS identifies the species that are listed as threatened or
            endangered by a state or federal 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: 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: U.S. Fish and Wildlife Service
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: T
  Enumerated_Domain_Value_Definition: Threatened on state list
  Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife Service
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: C
  Enumerated_Domain_Value_Definition: Species of Special Concern
  Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife Service
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: *
  Enumerated_Domain_Value_Definition:
   Refer to the table RUNS_DAT for threatened or endangered status.
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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: U.S. Fish and Wildlife Service
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: T
        Enumerated_Domain_Value_Definition: Threatened on federal list
        Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife Service
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: C
        Enumerated_Domain_Value_Definition: Species of Special Concern
        Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife Service
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: *
        Enumerated_Domain_Value_Definition:
            Refer to the table RUNS_DAT for threatened or endangered status.
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: 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: EL_SPE
    Attribute_Definition:
        Concatenation of ELEMENT and SPECIES_ID. This item links records in the STATUS data table to records in the BIORES, SPECIES, and RUNS_DAT 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: RUNS_DAT
Entity_Type_Definition:
The data table RUNS_DAT identifies anadromous fish runs that are listed as
threatened, endangered, sensitive-critical, or candidate by a state or federal 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: EL_SPE
Attribute_Definition:
Concatenation of ELEMENT and SPECIES_ID. This item links records in the
RUNS_DAT table to records in the STATUS table.
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: SPECIES
Attribute_Definition:
Species common name. This field may also include the season in which the species
is running [for example, "Chinook Salmon (Spring)"].
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Unrepresentable_Domain: Acceptable values change from atlas to atlas
Attribute:
Attribute_Label: RUN
Attribute_Definition:
Location of the run in which the species is listed as threatened, endangered,
sensitive-critical, or a candidate.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Unrepresentable_Domain: Acceptable values change from atlas to atlas
Attribute:
Attribute_Label: OR
Attribute_Definition: Threatened or endangered status for the state of Oregon.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: E
Enumerated_Domain_Value_Definition: Listed as endangered by the state
of Oregon
Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
Service
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: T
Enumerated_Domain_Value_Definition: Listed as threatened by the state

of Oregon
Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
Service
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: S-C
Enumerated_Domain_Value_Definition: Listed as a sensitive-critical
species by the state of Oregon
Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
Service
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: NL
Enumerated_Domain_Value_Definition: Not listed by the state of Oregon
Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
Service
Attribute:
Attribute_Label: WA
Attribute_Definition: Threatened or endangered status for the state of Washington
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Cand.
Enumerated_Domain_Value_Definition: Listed as candidate species by the
state of Washington
Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
Service
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: NL
Enumerated_Domain_Value_Definition: Not listed by the state of
Washington
Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
Service
Attribute:
Attribute_Label: FEDERAL
Attribute_Definition:
Threatened or endangered status for the Federal Endangered Species Act
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: E
Enumerated_Domain_Value_Definition: Listed as endangered by the
Federal Endangered Species Act
Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
Service
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: T
Enumerated_Domain_Value_Definition: Listed as threatened by the
Federal Endangered Species Act
Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
Service
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Cand.
Enumerated_Domain_Value_Definition:
Listed as candidate species by the Federal Endangered Species Act
Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
Service

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: NL
        Enumerated_Domain_Value_Definition: Not listed by the Federal Endangered Species Act
        Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife Service

Attribute:
    Attribute_Label: ESA_YEAR
    Attribute_Definition:
        Year the species was listed by the Federal Endangered Species Act.
    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: Species is not federally ranked
            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 Columbia River
    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: 200411
Metadata_Review_Date: 200411
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 2.8.2 on Tue Dec 07 17:42:00 2004

Columbia River ESI: FISHL (Fish 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
            Publication_Date: 200411
            Title: Columbia River ESI: FISHL (Fish Lines)
            Edition: First
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Columbia River
            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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
    Description:
        Abstract:
            This data set contains sensitive biological resource data for anadromous fish species in Columbia River. Vector lines in this data set represent locations of anadromous fish spawning runs. Species-specific abundance, seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer.

            This data set comprises a portion of the Environmental Sensitivity Index (ESI) data for Columbia River. 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 FISH (Fish Polygons) data layer, part of the larger Columbia River ESI database, for additional fish information.

Purpose:

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

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 2003

Ending_Date: 2004

Currentness_Reference:

The biological data were compiled during 2003-2004. The currentness dates for the data range from 2003 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: -124.125

East_Bounding_Coordinate: -120.67375

North_Bounding_Coordinate: 46.375

South_Bounding_Coordinate: 45.3

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: Columbia River

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 Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.

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, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, nwi.e00, reptiles.e00, socecon.e00, t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, runs_dat, 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 "resources 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, digital data, and hardcopy maps on anadromous fish spawning runs in Columbia River. See also the FISH (Fish Polygons) data layer, part of the larger Columbia River ESI database, for additional fish information. These data do not necessarily represent all fish occurrences in Columbia River. The following species are included in this data set: (Species_ID, Common Name, Scientific Name, if applicable): 69, Coho salmon, Oncorhynchus kisutch; 72, Chum salmon, Oncorhynchus keta; 77, Eulachon, Thaleichthys pacificus; 219, Pacific lamprey, Lampetra tridentate; 490, Chinook salmon (fall), Oncorhynchus tshawytscha (fall); 493, Chinook salmon (spring), Oncorhynchus tshawytscha (spring); 963, Rainbow trout (winter), Oncorhynchus mykiss (winter); 965, Chinook salmon (summer), Oncorhynchus tshawytscha (summer).
   Positional_Accuracy:
       Horizontal_Positional_Accuracy:
           Horizontal_Positional_Accuracy_Report:
                   Most of the spatial components of the biological data sets 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 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: North, J., Oregon Department of Fish and Wildlife (ODFW)
          Publication_Date: 200402
          Title: Fish, Bird, and Mammal Distributions along the Columbia River
          Geospatial_Data_Presentation_Form: Expert knowledge
          Publication_Information:
            Publication_Place: Unpublished material
            Publisher: Unpublished material
      Type_of_Source_Media: Personal communication
      Source_Time_Period_of_Content:
        Time_Period_Information:
          Single_Date/Time:
            Calendar_Date: 200402
        Source_Currentness_Reference: Date of communication
      Source_Citation_Abbreviation: None
      Source_Contribution: Distribution and seasonality information for fish
    Source_Information:
      Source_Citation:
        Citation_Information:
          Originator:
            Meyer, B., National Oceanic and Atmospheric Administration (NOAA)
          Publication_Date: 200402
          Title:
            Fish, Bird, Mammal, and Plant Distributions in the Lower Columbia River
          Geospatial_Data_Presentation_Form: Expert Knowledge
          Publication_Information:
            Publication_Place: Unpublished material
            Publisher: Unpublished material
      Type_of_Source_Media: Personal communication
      Source_Time_Period_of_Content:
        Time_Period_Information:
          Single_Date/Time:
            Calendar_Date: 200402
        Source_Currentness_Reference: Date of communication
      Source_Citation_Abbreviation: None
      Source_Contribution: Distribution and seasonality information for fish
    Source_Information:
      Source_Citation:
        Citation_Information:
          Originator:
            Stone, S., National Oceanic and Atmospheric Administration (NOAA)
          Publication_Date: 200402
          Title: Anadromous Fish Data for Washington and Oregon
          Geospatial_Data_Presentation_Form: Expert knowledge
          Publication_Information:
            Publication_Place: Unpublished material
            Publisher: Unpublished material

Type_of_Source_Media: Personal communication
Source_Time_Period_of_Content:
    Time_Period_Information:
        Single_Date/Time:
            Calendar_Date: 200402
    Source_Currentness_Reference: Date of communication
Source_Citation_Abbreviation: None
Source_Contribution: Anadromous fish distributions
Source_Information:
Source_Citation:
    Citation_Information:
        Originator: Stone, S., National Oceanic and Atmospheric Administration
        Publication_Date: 200402
        Title:
            Anadromous Fish Data for Washington and Oregon - Adapted
            from WDFW and ODFW
        Geospatial_Data_Presentation_Form: Vector digital data
        Publication_Information:
            Publication_Place: Unpublished material
            Publisher: Unpublished material
Source_Scale_Denominator: varies
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:
    Time_Period_Information:
        Single_Date/Time:
            Calendar_Date: 200402
    Source_Currentness_Reference: Publication date
Source_Citation_Abbreviation: None
Source_Contribution: Anadromous fish distribution information
Source_Information:
Source_Citation:
    Citation_Information:
        Originator: Guy, D., Lower Columbia Fish Recovery Board
        Publication_Date: 2003
        Title: Recovery/Subbasin Plan Technical Document
        Geospatial_Data_Presentation_Form: Hardcopy text
        Publication_Information:
            Publication_Place: Unpublished material
            Publisher: Unpublished material
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:
    Time_Period_Information:
        Single_Date/Time:
            Calendar_Date: 2003
    Source_Currentness_Reference: Publication date
Source_Citation_Abbreviation: None
Source_Contribution: Seasonality information for fish
Process_Step:
Process_Description:
    Three main sources of data were used to depict spawning runs for this data layer: (1)
    personal interviews with the resource experts from the Oregon Department of Fish
    and Wildlife (ODFW) and the U.S. Fish and Wildlife Service (USFWS); (2) the
    2003 Draft Lower Columbia Fish Recovery Board Recovery/Subbasin Plan,
    Technical Foundation; and (3) NOAA-synthesized digital ODFW and Washington
    Department of Fish and Wildlife (WDFW) anadromous fish data. Note that the
    digital lines were adapted from the original ODFW and WDFW data. Information
    gathered during initial interviews and from hardcopy sources was compiled onto
    U.S. Geological Survey 1:24,000 topographic quadrangles.

    The compiled data were digitized off of the base maps into an ArcInfo system to

create the FISHL data layer. All ESI, biology, and human-use data were plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews was conducted to review the maps. Edits to the FISHL data layer were made based on the recommendations of the resource experts, and final hardcopy maps were created.

Process_Date: 200408
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: Complete chain
      Point_and_Vector_Object_Count: 568
    SDTS_Terms_Description:
      SDTS_Point_and_Vector_Object_Type: Link
      Point_and_Vector_Object_Count: 22507
    SDTS_Terms_Description:
      SDTS_Point_and_Vector_Object_Type: Node, planar graph
      Point_and_Vector_Object_Count: 830

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: 6378206.4
      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, FISHL) 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 Columbia River atlas, the number is 41), 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: FISHL.AAT
        Entity_Type_Definition:
            The FISHL.AAT table contains attribute information for the vector lines representing anadromous fish spawning runs. 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 (41), element number (22; 20 because it is a line feature, plus 2, the element value for FISH), and record number.
        Attribute_Definition_Source: NOAA
        Attribute_Domain_Values:
            Range_Domain:
                Range_Domain_Minimum: 412200001
                Range_Domain_Maximum: 412200568
    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:* 41000133
>>> *Range_Domain_Maximum:* 41000179

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:* 41000001
>>>> *Range_Domain_Maximum:* 41000290
> *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 (41), element number (22; 20 because it is a line feature, plus 2, the element value for FISH), 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:* 410100002
>>>> *Range_Domain_Maximum:* 413400015

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:* 041000001

Range_Domain_Maximum: 041000290

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 of a species at a particular location. No concentration data were available for anadromous fish, so 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:* 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:* fav
> > > *Enumerated_Domain_Value_Definition:* Floating aquatic vegetation
> > > *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:* 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:* passerine
> > > *Enumerated_Domain_Value_Definition:* Passerine 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: 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: ungulate
Enumerated_Domain_Value_Definition: Ungulate
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:
Attribute_Label: NHP
Attribute_Definition:
Natural Heritage Program global ranking. When no information was provided on the global rank for a species, the field is blank.
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: No information was provided on the global rank for the species
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
                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
                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
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
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
>>> *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, and to G_SOURCE and S_SOURCE in the BIORES table.
>> *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:* Scale denominator of the source
> *Attribute_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
> > *Enumerated_Domain:*
> > > *Enumerated_Domain_Value:* integer
> > > *Enumerated_Domain_Value_Definition:* Any integer
> > > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

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:*
> > *Enumerated_Domain:*
> > > *Enumerated_Domain_Value:* MM/DD/YY
> > > *Enumerated_Domain_Value_Definition:* Month/Day/Year
> > > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
> > *Enumerated_Domain:*
> > > *Enumerated_Domain_Value:* MM/YYYY
> > > *Enumerated_Domain_Value_Definition:* Month/Year
> > > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
> > *Enumerated_Domain:*
> > > *Enumerated_Domain_Value:* UNKNOWN
> > > *Enumerated_Domain_Value_Definition:* Date information unknown
> > > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Detailed_Description:
> *Entity_Type:*
> > *Entity_Type_Label:* STATUS
> > *Entity_Type_Definition:*
> > > The data table STATUS identifies the species that are listed as threatened or endangered by a state or federal 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: 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: U.S. Fish and Wildlife
            Service

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: T
        Enumerated_Domain_Value_Definition: Threatened on state list
        Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
        Service
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: C
        Enumerated_Domain_Value_Definition: Species of Special Concern
        Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
        Service
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: *
        Enumerated_Domain_Value_Definition:
            Refer to the table RUNS_DAT for threatened or endangered status.
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: U.S. Fish and Wildlife
            Service
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: T
            Enumerated_Domain_Value_Definition: Threatened on federal list
            Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
            Service
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: C
            Enumerated_Domain_Value_Definition: Species of Special Concern
            Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
            Service
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: *
            Enumerated_Domain_Value_Definition:
                Refer to the table RUNS_DAT for threatened or endangered status.
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: 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: EL_SPE
Attribute_Definition:
Concatenation of ELEMENT and SPECIES_ID. This item links records in the
STATUS data table to records in the BIORES, SPECIES, and RUNS_DAT 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: RUNS_DAT
Entity_Type_Definition:
The data table RUNS_DAT identifies anadromous fish runs that are listed as
threatened, endangered, sensitive-critical, or candidate by a state or federal 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: EL_SPE
Attribute_Definition:
Concatenation of ELEMENT and SPECIES_ID. This item links records in the
RUNS_DAT table to records in the STATUS table.
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: SPECIES
Attribute_Definition:
Species common name. This field may also include the season in which the species
is running [for example, "Chinook Salmon (Spring)"].
Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Unrepresentable_Domain: Acceptable values change from atlas to atlas
Attribute:
  Attribute_Label: RUN
  Attribute_Definition:
    Location of the run in which the species is listed as threatened, endangered,
    sensitive-critical, or a candidate.
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Unrepresentable_Domain: Acceptable values change from atlas to atlas
Attribute:
  Attribute_Label: OR
  Attribute_Definition: Threatened or endangered status for the state of Oregon.
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: E
      Enumerated_Domain_Value_Definition: Listed as endangered by the state
        of Oregon
      Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
        Service
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: T
      Enumerated_Domain_Value_Definition: Listed as threatened by the state
        of Oregon
      Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
        Service
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: S-C
      Enumerated_Domain_Value_Definition: Listed as a sensitive-critical
        species by the state of Oregon
      Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
        Service
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: NL
      Enumerated_Domain_Value_Definition: Not listed by the state of Oregon
      Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
        Service
Attribute:
  Attribute_Label: WA
  Attribute_Definition: Threatened or endangered status for the state of Washington
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: Cand.
      Enumerated_Domain_Value_Definition: Listed as candidate species by the
        state of Washington
      Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
        Service
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: NL
      Enumerated_Domain_Value_Definition: Not listed by the state of
        Washington
      Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
        Service
Attribute:

Attribute_Label: FEDERAL
Attribute_Definition:
> Threatened or endangered status for the Federal Endangered Species Act
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
> *Enumerated_Domain:*
>> *Enumerated_Domain_Value:* E
>> *Enumerated_Domain_Value_Definition:* Listed as endangered by the Federal Endangered Species Act
>> *Enumerated_Domain_Value_Definition_Source:* U.S. Fish and Wildlife Service
Attribute_Domain_Values:
> *Enumerated_Domain:*
>> *Enumerated_Domain_Value:* T
>> *Enumerated_Domain_Value_Definition:* Listed as threatened by the Federal Endangered Species Act
>> *Enumerated_Domain_Value_Definition_Source:* U.S. Fish and Wildlife Service
Attribute_Domain_Values:
> *Enumerated_Domain:*
>> *Enumerated_Domain_Value:* Cand.
>> *Enumerated_Domain_Value_Definition:*
>>> Listed as candidate species by the Federal Endangered Species Act
>> *Enumerated_Domain_Value_Definition_Source:* U.S. Fish and Wildlife Service
Attribute_Domain_Values:
> *Enumerated_Domain:*
>> *Enumerated_Domain_Value:* NL
>> *Enumerated_Domain_Value_Definition:* Not listed by the Federal Endangered Species Act
>> *Enumerated_Domain_Value_Definition_Source:* U.S. Fish and Wildlife Service
Attribute:
Attribute_Label: ESA_YEAR
Attribute_Definition:
> Year the species was listed by the Federal Endangered Species Act.
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:* Species is not federally ranked
>> *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 Columbia River
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: 200411
Metadata_Review_Date: 200411
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 2.8.2 on Tue Dec 07 17:50:42 2004

Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
      Publication_Date: 200411
      Title: Columbia River ESI: INVERT (Invertebrate Polygons)
      Edition: First
      Geospatial_Data_Presentation_Form: Vector digital data
      Series_Information:
        Series_Name: None
        Issue_Identification: Columbia River
      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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
  Description:
    Abstract:
      This data set contains sensitive biological resource data for clams, oysters, crabs, and other invertebrate species in Columbia River. Vector polygons in this data set represent locations of concentrations areas for these invertebrate species. 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 Columbia River. 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: 1990

Ending_Date: 2004

Currentness_Reference:

The biological data were compiled during 2003-2004. The currentness dates for these data range from 1990 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: -124.125

East_Bounding_Coordinate: -120.67375

North_Bounding_Coordinate: 46.375

South_Bounding_Coordinate: 45.3

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: Columbia River

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 Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.

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, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, nwi.e00, reptiles.e00, socecon.e00, t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, runs_dat, 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 invertebrate concentration areas. Locations of some invertebrate concentration areas were adapted from Washington Priority Habitat data. Contact Washington Department of Fish and Wildlife (WDFW) for additional information on these data. The ESI data do not necessarily represent all invertebrate occurrences in Columbia River. The following species are included in this data set: (Species_ID, Common Name, Scientific Name, if applicable): 14, Dungeness crab, Cancer magister; 25, Softshell clam, Mya arenaria; 28, Pacific razor clam, Siliqua patula; 29, Pacific littleneck, Protothaca staminea; 76, Nuttall cockle, Clinocardium nuttallii; 504, Freshwater mussel, Anodonta spp.
  Positional_Accuracy:
    Horizontal_Positional_Accuracy:
      Horizontal_Positional_Accuracy_Report:
        Most of the spatial components of the biological data sets 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 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: Kohl, K., Oregon Department of Fish and Wildlife (ODFW)
        Publication_Date: 200401
        Title: Bird and Mammal Distribution along the Columbia River
        Geospatial_Data_Presentation_Form: Expert knowledge
        Publication_Information:
          Publication_Place: Unpublished material
          Publisher: Unpublished material
    Type_of_Source_Media: Personal communication
    Source_Time_Period_of_Content:
      Time_Period_Information:
        Single_Date/Time:
          Calendar_Date: 200401
      Source_Currentness_Reference: Date of communication
    Source_Citation_Abbreviation: None
    Source_Contribution: Distribution information for invertebrates
  Source_Information:
    Source_Citation:
      Citation_Information:
        Originator:
          Meyer, B., National Oceanic and Atmospheric Administration (NOAA)
        Publication_Date: 200402
        Title:
          Fish, Bird, Mammal, and Plant Distributions in the Lower Columbia River
        Geospatial_Data_Presentation_Form: Expert Knowledge
        Publication_Information:
          Publication_Place: Unpublished material
          Publisher: Unpublished material
    Type_of_Source_Media: Personal communication
    Source_Time_Period_of_Content:
      Time_Period_Information:
        Single_Date/Time:
          Calendar_Date: 200402
      Source_Currentness_Reference: Date of communication
    Source_Citation_Abbreviation: None
    Source_Contribution: Distribution and seasonality information for invertebrates
  Source_Information:
    Source_Citation:
      Citation_Information:
        Originator: Hunter, M., Oregon Department of Fish and Wildlife (ODFW)
        Publication_Date: 200402
        Title:
          Invertebrate Abundance and Distribution in the Columbia River Estuary
        Geospatial_Data_Presentation_Form: Hardcopy map
        Publication_Information:
          Publication_Place: Unpublished material
          Publisher: Unpublished material

Source_Scale_Denominator: Unknown
Type_of_Source_Media: Paper
Source_Time_Period_of_Content:
    Time_Period_Information:
        Single_Date/Time:
            Calendar_Date: 200402
Source_Currentness_Reference: Date of publication
Source_Citation_Abbreviation: None
Source_Contribution:
    Invertebrate distribution, seasonality, and abundance information
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator:
                Monaco, M., et al., National Oceanic and Atmospheric
                Administration
            Publication_Date: 1990
            Title:
                Distribution and Abundance of Fishes and Invertebrates in West
                Coast Estuaries, ELMR Report No. 4
            Geospatial_Data_Presentation_Form: Hardcopy text
            Publication_Information:
                Publication_Place: Silver Spring, Maryland
                Publisher: NOAA/NOS Strategic Environmental Assessments
                Division
    Type_of_Source_Media: Paper
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 1990
    Source_Currentness_Reference: Publication date
    Source_Citation_Abbreviation: None
    Source_Contribution: Seasonality information for invertebrates
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: Washington Department of Fish and Wildlife (WDFW)
            Publication_Date: 2004
            Title: Priority Habitat Data for the Lower Columbia River
            Geospatial_Data_Presentation_Form: Vector digital data
            Publication_Information:
                Publication_Place: Unknown
                Publisher: Washington Department of Fish and Wildlife
    Source_Scale_Denominator: 24,000
    Type_of_Source_Media: CD-ROM
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 2004
    Source_Currentness_Reference: Publication Date
    Source_Citation_Abbreviation: None
    Source_Contribution: Distribution and seasonality information for invertebrates
Process_Step:
    Process_Description:
        Three main sources were used to depict invertebrate distribution and seasonality for
        this data layer: (1) personal interviews with resource experts from Oregon
        Department of Fish and Wildlife (ODFW); (2) numerous published and
        unpublished reports; and (3) information and locations adapted from Washington
        Priority Habitat data. Information gathered during initial interviews and from
        hardcopy sources was compiled onto U.S. Geological Survey 1:24,000 topographic

quadrangles.

The compiled data were digitized off of the base maps into an ArcInfo system to create the INVERT data layer. All ESI, biology, and human-use data were plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews was conducted to review the maps. Edits to the INVERT data layer were made based on the recommendations of the resource experts, and final hardcopy maps were created. Concentration information varied, and in general, no numerical counts of invertebrates were available. Therefore, for some species and locations, descriptive terms such as "HIGH" or "COMMON" were used. Concentration and seasonality information was provided by resource experts, or was extracted from published sources, reports, and survey data.

Process_Date: 200408
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 rings
            Point_and_Vector_Object_Count: 33
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Area point
            Point_and_Vector_Object_Count: 33
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Complete chain
            Point_and_Vector_Object_Count: 120
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Link
            Point_and_Vector_Object_Count: 40396
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Node, planar graph
            Point_and_Vector_Object_Count: 110

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: 6378206.4
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 Columbia River atlas, the number is 41), 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 representing invertebrate 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 (41), 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:* 410700002
>> *Range_Domain_Maximum:* 410700034

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:* 41000250
>>> *Range_Domain_Maximum:* 41000263

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:* 41000001
>>>> *Range_Domain_Maximum:* 41000290
> *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 (41), 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:* 410100002
>>>> *Range_Domain_Maximum:* 413400015

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: 041000001
Range_Domain_Maximum: 041000290

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. In the case of invertebrates, no quantitative count data were available, so the field may contain a descriptive term, such as "HIGH" or "COMMON". If no concentration information was available from any source, the field is populated with "-". Concentration estimates were derived from a variety of surveys.

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: 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: fav
        Enumerated_Domain_Value_Definition: Floating aquatic vegetation
        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: 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: passerine
Enumerated_Domain_Value_Definition: Passerine 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: 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: ungulate
Enumerated_Domain_Value_Definition: Ungulate
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:
Attribute_Label: NHP

Attribute_Definition:
Natural Heritage Program global ranking. When no information was provided on the global rank for a species, the field is blank.
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: No information was provided on the global rank for the species
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
        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
  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
   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
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
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, and to G_SOURCE and S_SOURCE in the BIORES table.
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: Scale denominator of the source
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: integer
            Enumerated_Domain_Value_Definition: Any integer
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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:
        Enumerated_Domain:
            Enumerated_Domain_Value: MM/DD/YY
            Enumerated_Domain_Value_Definition: Month/Day/Year
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: MM/YYYY

        Enumerated_Domain_Value_Definition: Month/Year
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
      Enumerated_Domain:
        Enumerated_Domain_Value: UNKNOWN
        Enumerated_Domain_Value_Definition: Date information unknown
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Detailed_Description:
  Entity_Type:
    Entity_Type_Label: STATUS
    Entity_Type_Definition:
      The data table STATUS identifies the species that are listed as threatened or
      endangered by a state or federal 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: 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: U.S. Fish and Wildlife Service
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: T
   Enumerated_Domain_Value_Definition: Threatened on state list
   Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife Service
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: C
   Enumerated_Domain_Value_Definition: Species of Special Concern
   Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife Service
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: U.S. Fish and Wildlife Service
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: T
   Enumerated_Domain_Value_Definition: Threatened on federal list
   Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife Service
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: C
   Enumerated_Domain_Value_Definition: Species of Special Concern
   Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife Service
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: 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: 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 Columbia River
    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: 200411
    Metadata_Review_Date: 200411
    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 2.8.2 on Tue Dec 07 18:04:53 2004

Columbia River ESI: REPTILES (Reptile and Amphibian 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
      Publication_Date: 200411
      Title: Columbia River ESI: REPTILES (Reptile and Amphibian Polygons)
      Edition: First
      Geospatial_Data_Presentation_Form: Vector digital data
      Series_Information:
        Series_Name: None
        Issue_Identification: Columbia River
      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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
  Description:
    Abstract:
      This data set contains sensitive biological resource data for western pond turtles and western painted turtles in Columbia River. Vector polygons in this data set represent locations of turtle distributions. Species-specific abundance, seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer.

      This data set comprises a portion of the Environmental Sensitivity Index (ESI) data for Columbia River. 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:* 2003
>>> *Ending_Date:* 2004
>
> *Currentness_Reference:*
>> The biological data were compiled during 2003-2004. The currentness date for these 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:* -124.125
>> *East_Bounding_Coordinate:* -120.67375
>> *North_Bounding_Coordinate:* 46.375
>> *South_Bounding_Coordinate:* 45.3

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:* Columbia River

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 Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.

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, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, nwi.e00, reptiles.e00, socecon.e00, t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, runs_dat, 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 data on turtle distribution. These data do not necessarily represent all reptile occurrences in Columbia River. The following species are included in this data set: (Species_ID, Common Name, Scientific Name, if applicable): 58, Western pond turtle, Clemmys marmorata; 151, Western painted turtle, Chrysemys picta bellii.
    Positional_Accuracy:
        Horizontal_Positional_Accuracy:
            Horizontal_Positional_Accuracy_Report:
                Most of the spatial components of the biological data sets 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 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: Kohl, K., Oregon Department of Fish and Wildlife (ODFW)
    Publication_Date: 200401
    Title: Bird and Mammal Distribution along the Columbia River
    Geospatial_Data_Presentation_Form: Expert knowledge
    Publication_Information:
     Publication_Place: Unpublished material
     Publisher: Unpublished material
  Type_of_Source_Media: Personal communication
  Source_Time_Period_of_Content:
   Time_Period_Information:
    Single_Date/Time:
     Calendar_Date: 200401
   Source_Currentness_Reference: Date of communication
  Source_Citation_Abbreviation: None
  Source_Contribution: Distribution information for reptiles
 Source_Information:
  Source_Citation:
   Citation_Information:
    Originator: Anderson, E., U.S. Fish and Wildlife Service (USFWS)
    Publication_Date: 200401
    Title: Distribution of Wildlife on the Lower Columbia River
    Geospatial_Data_Presentation_Form: Expert Knowledge
    Publication_Information:
     Publication_Place: Unpublished material
     Publisher: Unpublished material
  Type_of_Source_Media: Personal communication
  Source_Time_Period_of_Content:
   Time_Period_Information:
    Single_Date/Time:
     Calendar_Date: 200401
   Source_Currentness_Reference: Date of communication
  Source_Citation_Abbreviation: None
  Source_Contribution: Distribution and seasonality information for reptiles
 Source_Information:
  Source_Citation:
   Citation_Information:
    Originator: Nebeker, M., Oregon Department of Fish and Wildlife (ODFW)
    Publication_Date: 200402
    Title: Distribution of Wildlife on Sauvie Island and Surrounding Areas
    Geospatial_Data_Presentation_Form: Expert Knowledge
    Publication_Information:
     Publication_Place: Unpublished material
     Publisher: Unpublished material
  Type_of_Source_Media: Personal communication
  Source_Time_Period_of_Content:
   Time_Period_Information:
    Single_Date/Time:
     Calendar_Date: 200402
   Source_Currentness_Reference: Date of communication
  Source_Citation_Abbreviation: None
  Source_Contribution:
   Distribution and seasonality information of reptiles on Sauvie Island and surrounding areas
 Source_Information:

Source_Citation:
    Citation_Information:
        Originator: Szumski, M., U.S. Fish and Wildlife Service (USFWS)
        Publication_Date: 200401
        Title: Distribution of Wildlife in the Columbia River
        Geospatial_Data_Presentation_Form: Expert Knowledge
        Publication_Information:
            Publication_Place: Unpublished material
            Publisher: Unpublished material
    Type_of_Source_Media: Personal communication
    Source_Time_Period_of_Content:
        Time_Period_Information:
        Single_Date/Time:
            Calendar_Date: 200401
    Source_Currentness_Reference: Date of communication
    Source_Citation_Abbreviation: None
    Source_Contribution: Distribution of reptiles in the Columbia River
Source_Information:
    Source_Citation:
        Citation_Information:
        Originator: Washington Department of Fish and Wildlife (WDFW)
        Publication_Date: 2004
        Title: Priority Habitat Data for the Lower Columbia River
        Geospatial_Data_Presentation_Form: Vector digital data
        Publication_Information:
            Publication_Place: Unknown
            Publisher: Washington Department of Fish and Wildlife
    Source_Scale_Denominator: 24,000
    Type_of_Source_Media: CD-ROM
    Source_Time_Period_of_Content:
        Time_Period_Information:
        Single_Date/Time:
            Calendar_Date: 2004
    Source_Currentness_Reference: Publication Date
    Source_Citation_Abbreviation: None
    Source_Contribution: Distribution and seasonality information for reptiles
Process_Step:
    Process_Description:
        Two main sources of data were used to depict turtle distribution for this data layer: (1) personal interviews with resource experts from the Oregon Department of Fish and Wildlife (ODFW) and U.S. Fish and Wildlife Service (USFWS) and (2) published and unpublished reports. Information gathered during initial interviews and from hardcopy sources was compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles.

        The compiled data were digitized off of the base maps into an ArcInfo system to create the REPTILES data layer. All ESI, biology, and human-use data were plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews was conducted to review the maps. Edits to the REPTILES data layer were made based on the recommendations of the resource experts, and final hardcopy maps were created.
    Process_Date: 200408
    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 rings
　　　　　　Point_and_Vector_Object_Count: 15
　　　　SDTS_Terms_Description:
　　　　　　SDTS_Point_and_Vector_Object_Type: Area point
　　　　　　Point_and_Vector_Object_Count: 15
　　　　SDTS_Terms_Description:
　　　　　　SDTS_Point_and_Vector_Object_Type: Complete chain
　　　　　　Point_and_Vector_Object_Count: 25
　　　　SDTS_Terms_Description:
　　　　　　SDTS_Point_and_Vector_Object_Type: Link
　　　　　　Point_and_Vector_Object_Count: 7114
　　　　SDTS_Terms_Description:
　　　　　　SDTS_Point_and_Vector_Object_Type: Node, planar graph
　　　　　　Point_and_Vector_Object_Count: 24

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: 6378206.4
　　　　　　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 Columbia River atlas, the number is 41), 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 representing turtle distributions. 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 (41), 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: 410600002
                Range_Domain_Maximum: 410600016
    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: 41000273
                Range_Domain_Maximum: 41000278

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: 41000001

                Range_Domain_Maximum: 41000290

    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 (41), 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: 410100002

                Range_Domain_Maximum: 413400015

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: 041000001

                Range_Domain_Maximum: 041000290

    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. In cases where no quantitative count data were available, the field may contain a descriptive term such as "HIGH" or "COMMON". If no concentration information was available from any source, the field is populated with "-". Counts were derived from a variety of surveys, 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: 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: fav
Enumerated_Domain_Value_Definition: Floating aquatic vegetation
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: 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: passerine
Enumerated_Domain_Value_Definition: Passerine 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: 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: ungulate
           Enumerated_Domain_Value_Definition: Ungulate
           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:
   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:
   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
  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
   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
 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
 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
            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, and to G_SOURCE and S_SOURCE in the BIORES table.
       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: Scale denominator of the source
 Attribute_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: integer
   Enumerated_Domain_Value_Definition: Any integer
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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:
  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.
Detailed_Description:
 Entity_Type:
  Entity_Type_Label: STATUS
  Entity_Type_Definition:
   The data table STATUS identifies the species that are listed as threatened or endangered by a state or federal 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: 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: U.S. Fish and Wildlife
     Service
  Attribute_Domain_Values:
    Enumerated_Domain:
     Enumerated_Domain_Value: T
     Enumerated_Domain_Value_Definition: Threatened on state list
     Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
     Service
  Attribute_Domain_Values:
    Enumerated_Domain:
     Enumerated_Domain_Value: C
     Enumerated_Domain_Value_Definition: Species of Special Concern
     Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
     Service
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: U.S. Fish and Wildlife
     Service
  Attribute_Domain_Values:

Enumerated_Domain:
    Enumerated_Domain_Value: T
    Enumerated_Domain_Value_Definition: Threatened on federal list
    Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife Service
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: C
        Enumerated_Domain_Value_Definition: Species of Special Concern
        Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife Service

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: 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:
        Date of publication 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: 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 Columbia River
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: 200411
    Metadata_Review_Date: 200411
    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 2.8.2 on Fri Dec 10 11:08:19 2004

Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
            Publication_Date: 200411
            Title: Columbia River ESI: M_MAMMAL (Marine Mammal Polygons)
            Edition: First
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Columbia River
            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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
    Description:
        Abstract:
            This data set contains sensitive biological resource data for Steller sea lions, harbor seals, and California sea lions in Columbia River. Vector polygons in this data set represent locations of marine mammal distribution and haul-out sites. Species-specific abundance, seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer.

            This data set comprises a portion of the Environmental Sensitivity Index (ESI) data for Columbia River. 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

M_MAMPT (Marine Mammal Points) data layer, part of the larger Columbia River ESI database, for additional marine mammal 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: 1984

Ending_Date: 2004

Currentness_Reference:

The biological data were compiled during 2003-2004. The currentness dates for these data range from 1984 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: -124.125

East_Bounding_Coordinate: -120.67375

North_Bounding_Coordinate: 46.375

South_Bounding_Coordinate: 45.3

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: Columbia River

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 Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.

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, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, nwi.e00, reptiles.e00, socecon.e00, t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, runs_dat, 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 marine mammal distribution. Information on marine mammal haulouts and concentrations was also adapted from Washington Priority habitat data. Contact Washington Department of Fish and Wildlife (WDFW) for more information on these data. See also the M_MAMPT (Marine Mammal Points) data layer, part of the larger Columbia River ESI database, for additional marine mammal information. These data do not necessarily represent all marine mammal occurrences in Columbia River. The following species are included in this data set: (Species_ID, Common Name, Scientific Name, if applicable): 1, Steller sea lion, Eumetopias jubatus; 2, Harbor seal, Phoca vitulina; 22, California sea lion, Zalophus californianus.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

Most of the spatial components of the biological data sets 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 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: North, J., Oregon Department of Fish and Wildlife (ODFW)
               Publication_Date: 200402
               Title: Fish, Bird, and Mammal Distributions along the Columbia River
               Geospatial_Data_Presentation_Form: Expert knowledge
               Publication_Information:
                    Publication_Place: Unpublished material
                    Publisher: Unpublished material
        Type_of_Source_Media: Personal communication
        Source_Time_Period_of_Content:
           Time_Period_Information:
              Single_Date/Time:
                 Calendar_Date: 200402
           Source_Currentness_Reference: Date of communication
        Source_Citation_Abbreviation: None
        Source_Contribution: Distribution information for marine mammals
    Source_Information:
        Source_Citation:
           Citation_Information:
               Originator: Tennis, M., Oregon Department of Fish and Wildlife (ODFW)
               Publication_Date: 200402
               Title:
                    Marine Mammal Abundance and Distribution in the Columbia River Estuary
               Geospatial_Data_Presentation_Form: Expert knowledge
               Publication_Information:
                    Publication_Place: Unpublished material
                    Publisher: Unpublished material
        Type_of_Source_Media: Personal communication
        Source_Time_Period_of_Content:
           Time_Period_Information:
              Single_Date/Time:
                 Calendar_Date: 200402
           Source_Currentness_Reference: Date of communication
        Source_Citation_Abbreviation: None
        Source_Contribution: Distribution and abundance information for marine mammals
    Source_Information:
        Source_Citation:
           Citation_Information:
               Originator: Columbia River Estuary Data Development Program
               Publication_Date: 1984
               Title:
                    The Columbia River Estuary Atlas of Physical and Biological Characteristics
               Geospatial_Data_Presentation_Form: Hardcopy atlas
               Publication_Information:
                    Publication_Place: Seattle, Washington
                    Publisher: Northwest Cartography, Inc.

Source_Scale_Denominator: 250,000
Type_of_Source_Media: Paper
Source_Time_Period_of_Content:
 Time_Period_Information:
  Single_Date/Time:
   Calendar_Date: 1984
 Source_Currentness_Reference: Publication date
Source_Citation_Abbreviation: None
Source_Contribution: Seasonality information for marine mammals
Source_Information:
 Source_Citation:
  Citation_Information:
   Originator: Washington Department of Fish and Wildlife (WDFW)
   Publication_Date: 200403
   Title: Marine Mammal Haulout Sites in the Columbia River
   Geospatial_Data_Presentation_Form: Vector digital data
   Publication_Information:
    Publication_Place: Unpublished material
    Publisher: Unpublished material
 Source_Scale_Denominator: 24,000
 Type_of_Source_Media: CD-ROM
 Source_Time_Period_of_Content:
  Time_Period_Information:
   Single_Date/Time:
    Calendar_Date: 200403
  Source_Currentness_Reference: Publication date
 Source_Citation_Abbreviation: None
 Source_Contribution: Location of marine mammal haulout sites adapted from WDFW data
Process_Step:
 Process_Description:
  Three main sources of data were used to depict marine mammal distributions and
  haulout sites for this data layer: (1) personal interviews with resource experts from
  Oregon Department of Fish and Wildlife (ODFW), Washington Department of
  Fish and Wildlife (WDFW), and U.S. Fish and Wildlife Service (USFWS); (2)
  numerous published and unpublished reports; and (3) information adapted from
  Washington Priority Habitat data. (Contact WDFW for more information regarding
  the Washington Priority Habitat data.) Information gathered during initial interviews
  and from hardcopy sources was compiled onto U.S. Geological Survey 1:24,000
  topographic quadrangles.

  The compiled data were digitized off of the base maps into an ArcInfo system to
  create the M_MAMMAL data layer. All ESI, biology, and human-use data were
  plotted onto hardcopy draft maps. Following the delivery of draft maps to the
  participating resource experts, a second set of interviews was conducted to review the
  maps. Edits to the M_MAMMAL data layer were made based on the
  recommendations of the resource experts, and final hardcopy maps were created.
 Process_Date: 200408
 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 rings
            Point_and_Vector_Object_Count: 10
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Area point
            Point_and_Vector_Object_Count: 10
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Complete chain
            Point_and_Vector_Object_Count: 19
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Link
            Point_and_Vector_Object_Count: 6274
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Node, planar graph
            Point_and_Vector_Object_Count: 19

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: 6378206.4
            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 Columbia River atlas, the number is 41), 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 representing marine mammal haulouts and distribution 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 (41), 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: 410400002
    Range_Domain_Maximum: 410400011
 Attribute:
  Attribute_Label: RARNUM
  Attribute_Definition:
   An identifier that links directly to the BIORES table or the flat format BIOFILE table. RARNUM values of 0 are holes in the polygons and do not contain information.
  Attribute_Definition_Source: NOAA
  Attribute_Domain_Values:
   Range_Domain:
    Range_Domain_Minimum: 41000264
    Range_Domain_Maximum: 41000272
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: 41000001

Range_Domain_Maximum: 41000290

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 (41), 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: 410100002

Range_Domain_Maximum: 413400015

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: 041000001

Range_Domain_Maximum: 041000290

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. The field may contain counts of individuals (e.g., 500), a range count of individuals (e.g., 50-100), or a concentration approximation (e.g., 100s). Note that these numbers generally represent the peak concentrations of marine mammals present or potentially present. Counts were derived from a variety of surveys, 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: 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: fav
            Enumerated_Domain_Value_Definition: Floating aquatic vegetation
            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: 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: passerine
            Enumerated_Domain_Value_Definition: Passerine 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: 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: ungulate
        Enumerated_Domain_Value_Definition: Ungulate
        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:
    Attribute_Label: NHP
    Attribute_Definition:
        Natural Heritage Program global ranking. When no information was provided on
        the global rank for a species, the field is blank.
    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: No information was provided on
            the global rank for the species
            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
>> *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
>> *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 = interesting; 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
        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
            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
       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, and to G_SOURCE and
      S_SOURCE in the BIORES table.
    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: Scale denominator of the source
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: integer
            Enumerated_Domain_Value_Definition: Any integer
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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:
        Enumerated_Domain:
            Enumerated_Domain_Value: MM/DD/YY
            Enumerated_Domain_Value_Definition: Month/Day/Year
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: MM/YYYY
            Enumerated_Domain_Value_Definition: Month/Year
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: UNKNOWN
            Enumerated_Domain_Value_Definition: Date information unknown
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Detailed_Description:
    Entity_Type:
        Entity_Type_Label: STATUS
        Entity_Type_Definition:
            The data table STATUS identifies the species that are listed as threatened or
            endangered by a state or federal 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: 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: U.S. Fish and Wildlife
                  Service
      Attribute_Domain_Values:
            Enumerated_Domain:
                  Enumerated_Domain_Value: T
                  Enumerated_Domain_Value_Definition: Threatened on state list
                  Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
                  Service
      Attribute_Domain_Values:
            Enumerated_Domain:
                  Enumerated_Domain_Value: C

          Enumerated_Domain_Value_Definition: Species of Special Concern
          Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife Service

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: U.S. Fish and Wildlife Service
    Attribute_Domain_Values:
        Enumerated_Domain:
          Enumerated_Domain_Value: T
          Enumerated_Domain_Value_Definition: Threatened on federal list
          Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife Service
    Attribute_Domain_Values:
        Enumerated_Domain:
          Enumerated_Domain_Value: C
          Enumerated_Domain_Value_Definition: Species of Special Concern
          Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife Service

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: 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: 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 Columbia River
    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: 200411
    Metadata_Review_Date: 200411
    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 2.8.2 on Fri Dec 10 11:14:24 2004

Columbia River ESI: M_MAMPT (Marine Mammal 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
            Publication_Date: 200411
            Title: Columbia River ESI: M_MAMPT (Marine Mammal Points)
            Edition: First
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Columbia River
            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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
    Description:
        Abstract:
            This data set contains sensitive biological resource data for sea lions and harbor seals in Columbia River. Vector points in this data set represent locations of seal and sea lion haul-out sites. Species-specific abundance, seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer.

            This data set comprises a portion of the Environmental Sensitivity Index (ESI) data for Columbia River. 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

M_MAMMAL (Marine Mammal Polygons) data layer, part of the larger Columbia River ESI database, for additional marine mammal 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: 1984

Ending_Date: 2004

Currentness_Reference:

The biological data were compiled during 2003-2004. The currentness dates for these data range from 1984 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: -124.125

East_Bounding_Coordinate: -120.67375

North_Bounding_Coordinate: 46.375

South_Bounding_Coordinate: 45.3

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: Columbia River

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 Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.

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, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, nwi.e00, reptiles.e00, socecon.e00, t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, runs_dat, 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 seal and sea lion haul-out sites. See also the M_MAMMAL (Marine Mammal Polygons) data layer, part of the larger Columbia River ESI database, for additional marine mammal information. These data do not necessarily represent all marine mammal occurrences in Columbia River. The following species are included in this data set: (Species_ID, Common Name, Scientific Name, if applicable): 2, Harbor seal, Phoca vitulina; 22, California sea lion, Zalophus californianus.
>
> *Positional_Accuracy:*
>> *Horizontal_Positional_Accuracy:*
>>> *Horizontal_Positional_Accuracy_Report:*
>>>> Most of the spatial components of the biological data sets 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 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: North, J., Oregon Department of Fish and Wildlife (ODFW)
                Publication_Date: 200402
                Title: Fish, Bird, and Mammal Distributions along the Columbia River
                Geospatial_Data_Presentation_Form: Expert knowledge
                Publication_Information:
                    Publication_Place: Unpublished material
                    Publisher: Unpublished material
        Type_of_Source_Media: Personal communication
        Source_Time_Period_of_Content:
            Time_Period_Information:
                Single_Date/Time:
                    Calendar_Date: 200402
            Source_Currentness_Reference: Date of communication
        Source_Citation_Abbreviation: None
        Source_Contribution: Distribution information for marine mammals
    Source_Information:
        Source_Citation:
            Citation_Information:
                Originator: Columbia River Estuary Data Development Program
                Publication_Date: 1984
                Title:
                    The Columbia River Estuary Atlas of Physical and Biological Characteristics
                Geospatial_Data_Presentation_Form: Hardcopy atlas
                Publication_Information:
                    Publication_Place: Seattle, Washington
                    Publisher: Northwest Cartography, Inc.
        Source_Scale_Denominator: 250,000
        Type_of_Source_Media: Paper
        Source_Time_Period_of_Content:
            Time_Period_Information:
                Single_Date/Time:
                    Calendar_Date: 1984
            Source_Currentness_Reference: Publication date
        Source_Citation_Abbreviation: None
        Source_Contribution: Seasonality information for marine mammals
    Source_Information:
        Source_Citation:
            Citation_Information:
                Originator: Washington Department of Fish and Wildlife (WDFW)
                Publication_Date: 200403
                Title: Marine Mammal Haulout Sites in the Columbia River
                Geospatial_Data_Presentation_Form: Vector digital data
                Publication_Information:
                    Publication_Place: Unpublished material
                    Publisher: Unpublished material
        Source_Scale_Denominator: 24,000
        Type_of_Source_Media: CD-ROM
        Source_Time_Period_of_Content:
            Time_Period_Information:
                Single_Date/Time:

Calendar_Date: 200403
Source_Currentness_Reference: Publication date
Source_Citation_Abbreviation: None
Source_Contribution: Location of marine mammal haulout sites adapted from WDFW data
Process_Step:
Process_Description:

Three main sources of data were used to depict haul-out sites for this data layer: (1) personal interviews with resource experts from Oregon Department of Fish and Wildlife (ODFW), Washington Department of Fish and Wildlife (WDFW), and U.S. Fish and Wildlife Service (USFWS); (2) numerous published and unpublished reports; and (3) information adapted from Washington Priority Habitat data. Information gathered during initial interviews and from hardcopy sources was compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles.

The compiled data were digitized off of the base maps into an ArcInfo system to create the M_MAMPT data layer. All ESI, biology, and human-use data were plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews was conducted to review the maps. Edits to the M_MAMPT data layer were made based on the recommendations of the resource experts, and final hardcopy maps were created.

Process_Date: 200408
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: 15

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: 6378206.4
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_MAMPT) 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 Columbia River atlas, the number is 41), 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_MAMPT.PAT
            Entity_Type_Definition:
                The M_MAMPT.PAT table contains attribute information for the vector points representing seal and sea lion haul-out 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 (41), element number

(34; 30 because it is a point feature, plus 4, the element value for M_MAMMAL), and record number.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:
    Range_Domain:
        Range_Domain_Minimum: 413400001
        Range_Domain_Maximum: 413400015
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: 41000064
            Range_Domain_Maximum: 41000068

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 points and do not contain information.
        Attribute_Definition_Source: NOAA
        Attribute_Domain_Values:
            Range_Domain:
                Range_Domain_Minimum: 41000001
                Range_Domain_Maximum: 41000290
    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 (41), element number (34; 30 because it is a point feature, plus 4, the element value for M_MAMMAL), 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: 410100002
                Range_Domain_Maximum: 413400015
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: 041000001
            Range_Domain_Maximum: 041000290
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
        contains counts of a range of individuals (XX-XXX). Note that these numbers
        generally represent the peak concentrations of marine mammals present or
        potentially present. Counts were derived from a variety of surveys, 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: 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: fav
        Enumerated_Domain_Value_Definition: Floating aquatic vegetation
        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: 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: passerine
        Enumerated_Domain_Value_Definition: Passerine 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: 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: ungulate
        Enumerated_Domain_Value_Definition: Ungulate
        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:
    Attribute_Label: NHP
    Attribute_Definition:
        Natural Heritage Program global ranking. When no information was provided on
        the global rank for a species, the field is blank.

  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: No information was provided on the global rank for the species
    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
            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

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

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
    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
            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, and to G_SOURCE and S_SOURCE in the BIORES table.
    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: Scale denominator of the source
 Attribute_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: integer
   Enumerated_Domain_Value_Definition: Any integer
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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:
  Enumerated_Domain:
   Enumerated_Domain_Value: MM/DD/YY
   Enumerated_Domain_Value_Definition: Month/Day/Year
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: MM/YYYY
   Enumerated_Domain_Value_Definition: Month/Year
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:

Enumerated_Domain:
        Enumerated_Domain_Value: UNKNOWN
        Enumerated_Domain_Value_Definition: Date information unknown
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Detailed_Description:
  Entity_Type:
    Entity_Type_Label: STATUS
    Entity_Type_Definition:
      The data table STATUS identifies the species that are listed as threatened or
      endangered by a state or federal 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: 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: U.S. Fish and Wildlife Service
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: T
      Enumerated_Domain_Value_Definition: Threatened on state list
      Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife Service
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: C
      Enumerated_Domain_Value_Definition: Species of Special Concern
      Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife Service

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: U.S. Fish and Wildlife Service
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: T
      Enumerated_Domain_Value_Definition: Threatened on federal list
      Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife Service
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: C
      Enumerated_Domain_Value_Definition: Species of Special Concern
      Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife Service

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: 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: 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 Columbia River
    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: 200411
    Metadata_Review_Date: 200411
    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 2.8.2 on Fri Dec 10 11:51:31 2004

Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
            Publication_Date: 200411
            Title: Columbia River ESI: T_MAMMAL (Terrestrial Mammal Polygons)
            Edition: First
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Columbia River
            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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
    Description:
        Abstract:
            This data set contains sensitive biological resource data for beavers, otters, nutria, mink, muskrats, and Columbian white-tailed deer in the Columbia River area. Vector polygons in this data set represent locations of terrestrial mammal distributions. Species-specific abundance, seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer.

            This data set comprises a portion of the Environmental Sensitivity Index (ESI) data for Columbia River. 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 2003-2004. 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: -124.125

East_Bounding_Coordinate: -120.67375

North_Bounding_Coordinate: 46.375

South_Bounding_Coordinate: 45.3

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: Columbia River

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 Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.

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, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, nwi.e00, reptiles.e00, socecon.e00, t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, runs_dat, 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 terrestrial mammal concentration areas. These data do not necessarily represent all terrestrial mammal occurrences in the Columbia River area. The following species are included in this data set: (Species_ID, Common Name, Scientific Name, if applicable): 8, Northern river otter, Lutra Canadensis; 30, Columbian white-tailed deer, Odocoileus virginianus leucurus; 36, Beaver, Castor Canadensis; 37, Muskrat, Ondatra zibethicus; 38, Mink, Mustela vison; 43, Nutria, Myocastor coypus.
   Positional_Accuracy:
      Horizontal_Positional_Accuracy:
         Horizontal_Positional_Accuracy_Report:
            Most of the spatial components of the biological data sets 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 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:* North, J., Oregon Department of Fish and Wildlife (ODFW)
>>>>> *Publication_Date:* 200402
>>>>> *Title:* Fish, Bird, and Mammal Distributions along the Columbia River
>>>>> *Geospatial_Data_Presentation_Form:* Expert knowledge
>>>>> *Publication_Information:*
>>>>>> *Publication_Place:* Unpublished material
>>>>>> *Publisher:* Unpublished material
>>> *Type_of_Source_Media:* Personal communication
>>> *Source_Time_Period_of_Content:*
>>>> *Time_Period_Information:*
>>>>> *Single_Date/Time:*
>>>>>> *Calendar_Date:* 200402
>>> *Source_Currentness_Reference:* Date of communication
>>> *Source_Citation_Abbreviation:* None
>>> *Source_Contribution:* Distribution information for terrestrial mammals
>> *Source_Information:*
>>> *Source_Citation:*
>>>> *Citation_Information:*
>>>>> *Originator:* Kohl, K., Oregon Department of Fish and Wildlife (ODFW)
>>>>> *Publication_Date:* 200401
>>>>> *Title:* Bird and Mammal Distribution along the Columbia River
>>>>> *Geospatial_Data_Presentation_Form:* Expert knowledge
>>>>> *Publication_Information:*
>>>>>> *Publication_Place:* Unpublished material
>>>>>> *Publisher:* Unpublished material
>>> *Type_of_Source_Media:* Personal communication
>>> *Source_Time_Period_of_Content:*
>>>> *Time_Period_Information:*
>>>>> *Single_Date/Time:*
>>>>>> *Calendar_Date:* 200401
>>> *Source_Currentness_Reference:* Date of communication
>>> *Source_Citation_Abbreviation:* None
>>> *Source_Contribution:* Distribution information for terrestrial mammals
>> *Source_Information:*
>>> *Source_Citation:*
>>>> *Citation_Information:*
>>>>> *Originator:*
>>>>>> Sutherland, B., Oregon Department of Environmental Quality (ODEQ)
>>>>> *Publication_Date:* 1979
>>>>> *Title:*
>>>>>> Oil Spill Protection Plan for the Natural Resources of the Lower Columbia River
>>>>> *Geospatial_Data_Presentation_Form:* Hardcopy Map
>>>>> *Publication_Information:*
>>>>>> *Publication_Place:* Unknown
>>>>>> *Publisher:* Unknown
>>> *Source_Scale_Denominator:* Unknown
>>> *Type_of_Source_Media:* Paper
>>> *Source_Time_Period_of_Content:*
>>>> *Time_Period_Information:*
>>>>> *Single_Date/Time:*

Calendar_Date: 1979
Source_Currentness_Reference: Publication date
Source_Citation_Abbreviation: None
Source_Contribution: Distribution information for terrestrial mammals
Source_Information:
Source_Citation:
Citation_Information:
Originator: Clark, A., U.S. Fish and Wildlife Service (USFWS)
Publication_Date: 200402
Title:
Distribution of Fish, Birds, Plants, and Mammals in the Columbia River
Geospatial_Data_Presentation_Form: Expert Knowledge
Publication_Information:
Publication_Place: Unpublished material
Publisher: Unpublished material
Type_of_Source_Media: Personal communication
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 200402
Source_Currentness_Reference: Publication date
Source_Citation_Abbreviation: None
Source_Contribution:
Distribution and seasonality information for terrestrial mammals
Source_Information:
Source_Citation:
Citation_Information:
Originator: Columbia River Estuary Data Development Program
Publication_Date: 1984
Title:
The Columbia River Estuary Atlas of Physical and Biological Characteristics
Geospatial_Data_Presentation_Form: Hardcopy atlas
Publication_Information:
Publication_Place: Seattle, Washington
Publisher: Northwest Cartography, Inc.
Source_Scale_Denominator: 250,000
Type_of_Source_Media: Paper
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 1984
Source_Currentness_Reference: Publication date
Source_Citation_Abbreviation: None
Source_Contribution:
Distribution and seasonality information for terrestrial mammals
Source_Information:
Source_Citation:
Citation_Information:
Originator: Washington Department of Fish and Wildlife (WDFW)
Publication_Date: 2004
Title: Priority Habitat Data for the Lower Columbia River
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:
Publication_Place: Unknown
Publisher: Washington Department of Fish and Wildlife
Source_Scale_Denominator: 24,000
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:

> > > *Time_Period_Information:*
> > > > *Single_Date/Time:*
> > > > > *Calendar_Date:* 2004
> > > > *Source_Currentness_Reference:* Publication Date
> > > *Source_Citation_Abbreviation:* None
> > > *Source_Contribution:* Distribution information for terrestrial mammals
> > *Process_Step:*
> > > *Process_Description:*
> > > > Three main sources of data were used to depict terrestrial mammal distribution for this data layer: (1) personal interviews with resource experts from Oregon Department of Fish and Wildlife (ODFW) and U.S. Fish and Wildlife Service (USFWS); (2) numerous published and unpublished reports; and (3) information and locations adapted from the Washington Priority Habitat database. (Contact the Washington Department of Fish and Wildlife for more information regarding the Washington Priority Habitat data.) Information gathered during initial interviews and from hardcopy sources was compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles.
> > > >
> > > > The compiled data were digitized off of the base maps into an ArcInfo system to create the T_MAMMAL data layer. All ESI, biology, and human-use data were plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews was conducted to review the maps. Edits to the T_MAMMAL data layer were made based on the recommendations of the resource experts, and final hardcopy maps were created.
> > > *Process_Date:* 200408
> > > *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 rings
> > > *Point_and_Vector_Object_Count:* 200
> > *SDTS_Terms_Description:*
> > > *SDTS_Point_and_Vector_Object_Type:* Area point
> > > *Point_and_Vector_Object_Count:* 200
> > *SDTS_Terms_Description:*
> > > *SDTS_Point_and_Vector_Object_Type:* Complete chain
> > > *Point_and_Vector_Object_Count:* 265
> > *SDTS_Terms_Description:*
> > > *SDTS_Point_and_Vector_Object_Type:* Link
> > > *Point_and_Vector_Object_Count:* 43528
> > *SDTS_Terms_Description:*
> > > *SDTS_Point_and_Vector_Object_Type:* Node, planar graph

Point_and_Vector_Object_Count: 263

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:* 6378206.4
>>> *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 Columbia River atlas, the number is 41), 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 representing terrestrial mammal distributions. 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 (41), 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: 410900002

Range_Domain_Maximum: 410900201

Attribute:

Attribute_Label: RARNUM

Attribute_Definition:

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

Attribute_Definition_Source: NOAA

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 41000279

Range_Domain_Maximum: 41000290

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: 41000001

Range_Domain_Maximum: 41000290

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 (41), 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: 410100002
        Range_Domain_Maximum: 413400015

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: 041000001
          Range_Domain_Maximum: 041000290
  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. The field may contain counts of individuals (XX) or in cases where no quantitative count data was available, the field may contain a descriptive term such as "HIGH" or "PRESENT". If no concentration information was available from any source, the field is populated with "-". Counts were derived from a variety of surveys, 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: 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: fav
Enumerated_Domain_Value_Definition: Floating aquatic vegetation
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: 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: passerine
Enumerated_Domain_Value_Definition: Passerine 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: 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: ungulate

Enumerated_Domain_Value_Definition: Ungulate
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:
Attribute_Label: NHP
Attribute_Definition:
Natural Heritage Program global ranking. When no information was provided on
the global rank for a species, the field is blank.
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: No information was provided on
the global rank for the species
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
                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
>> *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
>> *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
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
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, and to G_SOURCE and S_SOURCE in the BIORES table.

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: Scale denominator of the source

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: integer

Enumerated_Domain_Value_Definition: Any integer

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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:
        Enumerated_Domain:
            Enumerated_Domain_Value: MM/DD/YY
            Enumerated_Domain_Value_Definition: Month/Day/Year
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: MM/YYYY
            Enumerated_Domain_Value_Definition: Month/Year
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: UNKNOWN
            Enumerated_Domain_Value_Definition: Date information unknown
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Detailed_Description:
    Entity_Type:
        Entity_Type_Label: STATUS
        Entity_Type_Definition:
            The data table STATUS identifies the species that are listed as threatened or
            endangered by a state or federal 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: 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: U.S. Fish and Wildlife Service
Attribute_Domain_Values:
  Enumerated_Domain:
  Enumerated_Domain_Value: T
  Enumerated_Domain_Value_Definition: Threatened on state list
  Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife Service
Attribute_Domain_Values:
  Enumerated_Domain:
  Enumerated_Domain_Value: C
  Enumerated_Domain_Value_Definition: Species of Special Concern
  Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife Service
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: U.S. Fish and Wildlife Service
Attribute_Domain_Values:
  Enumerated_Domain:
  Enumerated_Domain_Value: T
  Enumerated_Domain_Value_Definition: Threatened on federal list
  Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife Service
Attribute_Domain_Values:
  Enumerated_Domain:
  Enumerated_Domain_Value: C

        Enumerated_Domain_Value_Definition: Species of Special Concern
        Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
        Service
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: 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: 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 Columbia River
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:* 200411
>*Metadata_Review_Date:* 200411
>*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 2.8.2 on Fri Dec 10 11:21:11 2004

Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
>>>
>>> *Publication_Date:* 200411
>>> *Title:* Columbia River ESI: HABITATS (Habitat Polygons)
>>> *Edition:* First
>>> *Geospatial_Data_Presentation_Form:* Vector digital data
>>> *Series_Information:*
>>>> *Series_Name:* None
>>>> *Issue_Identification:* Columbia River
>>>
>>> *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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.

> *Description:*
>> *Abstract:*
>>> This data set contains sensitive biological resource data for submerged aquatic vegetation (SAV), rare plant species [Water howellia (Howelia aquatilis) and Columbia yellowcress (Rorippa columbiae)], and other plant species in Columbia River. Vector polygons in this data set represent locations of habitat and rare plant 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 Columbia River. 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:* 1981
>>> *Ending_Date:* 2004
> *Currentness_Reference:*
>> The biological data were compiled during 2003-2004. The currentness dates for the data range from 1981 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:* -124.125
>> *East_Bounding_Coordinate:* -120.67375
>> *North_Bounding_Coordinate:* 46.375
>> *South_Bounding_Coordinate:* 45.3

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:* Habitat
>> *Theme_Keyword:* Plant
> *Place:*
>> *Place_Keyword_Thesaurus:* None
>> *Place_Keyword:* Columbia River

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 Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.

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, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, nwi.e00, reptiles.e00, socecon.e00, t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, runs_dat, 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 "resources 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 submerged aquatic vegetation and rare plant distributions. These data do not necessarily represent all habitat and plant occurrences in Columbia River. The following species are included in this data set: (Species_ID, Common Name, Scientific Name, if applicable): 1, Eelgrass, Zostera marina; 607, Columbia yellowcress, Rorippa columbiae; 608, Water howellia, Howellia aquatilis.
  Positional_Accuracy:
    Horizontal_Positional_Accuracy:
      Horizontal_Positional_Accuracy_Report:
        Most of the spatial components of the biological data sets 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 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:
Meyer, B., National Oceanic and Atmospheric Administration (NOAA)

                Publication_Date: 200402

                Title:
Fish, Bird, Mammal, and Plant Distributions in the Lower Columbia River

                Geospatial_Data_Presentation_Form: Expert Knowledge

                Publication_Information:

                    Publication_Place: Unpublished material

                    Publisher: Unpublished material

        Type_of_Source_Media: Personal communication

        Source_Time_Period_of_Content:

            Time_Period_Information:

                Single_Date/Time:

                    Calendar_Date: 200402

            Source_Currentness_Reference: Date of communication

        Source_Citation_Abbreviation: None

        Source_Contribution: Distribution information for aquatic vegetation

    Source_Information:

        Source_Citation:

            Citation_Information:

                Originator: U.S. Fish and Wildlife Service (USFWS)

                Publication_Date: 1981

                Title: Hoquiam Washington-Oregon, Pacific Coast Ecological Inventory

                Geospatial_Data_Presentation_Form: Hardcopy Map

                Publication_Information:

                    Publication_Place: Washington, D.C.

                    Publisher: U.S. Government Printing Office

        Source_Scale_Denominator: 250,000

        Type_of_Source_Media: Paper

        Source_Time_Period_of_Content:

            Time_Period_Information:

                Single_Date/Time:

                    Calendar_Date: 1981

            Source_Currentness_Reference: Publication date

        Source_Citation_Abbreviation: None

        Source_Contribution: Distribution information for aquatic vegetation

    Source_Information:

        Source_Citation:

            Citation_Information:

                Originator: Anderson, E., U.S. Fish and Wildlife Service (USFWS)

                Publication_Date: 200401

                Title: Distribution of Wildlife on the Lower Columbia River

                Geospatial_Data_Presentation_Form: Expert Knowledge

                Publication_Information:

                    Publication_Place: Unpublished material

                    Publisher: Unpublished material

        Type_of_Source_Media: Personal communication

        Source_Time_Period_of_Content:

            Time_Period_Information:

                Single_Date/Time:

                    Calendar_Date: 200401

            Source_Currentness_Reference: Date of communication

Source_Citation_Abbreviation: None
Source_Contribution: Distribution information for aquatic vegetation
Process_Step:
    Process_Description:

Two main sources of data were used to depict habitat and rare plant distributions and seasonality for this data layer: (1) personal interviews with resource experts from Oregon Department of Fish and Wildlife (ODFW), U.S. Fish and Wildlife Service (USFWS), and National Oceanic Atmospheric Administration (NOAA) and (2) numerous published and unpublished reports. Information gathered during initial interviews and from hardcopy sources was compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles.

The compiled data were digitized off of the base maps into an ArcInfo system to create the HABITATS data layer. All ESI, biology, and human-use data were plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews was conducted to review the maps. Edits to the HABITATS data layer were made based on the recommendations of the resource experts, and final hardcopy maps were created.

Process_Date: 200408
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 rings
            Point_and_Vector_Object_Count: 21
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Area point
            Point_and_Vector_Object_Count: 21
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Complete chain
            Point_and_Vector_Object_Count: 61
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Link
            Point_and_Vector_Object_Count: 20237
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Node, planar graph
            Point_and_Vector_Object_Count: 61

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: 6378206.4
      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 Columbia River atlas, the number is 41), 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

representing submerged aquatic vegetation concentration areas and locations of rare plants and other plant species. 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 (41), 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: 410300002
   Range_Domain_Maximum: 410300022
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: 41000246
   Range_Domain_Maximum: 41000249
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: 41000001
   Range_Domain_Maximum: 41000290
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 (41), 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: 410100002

Range_Domain_Maximum: 413400015

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: 041000001
                Range_Domain_Maximum: 041000290
    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 value of a habitat or plant at a particular location. No quantitative information on concentrations of SAV or rare plants was available, so the field is populated either with a descriptive term such as "PRESENT", or "-", to indicate that no concentration information was available.
        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: 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: fav
        Enumerated_Domain_Value_Definition: Floating aquatic vegetation
        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: 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: passerine
        Enumerated_Domain_Value_Definition: Passerine 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: 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: ungulate
        Enumerated_Domain_Value_Definition: Ungulate
        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:
    Attribute_Label: NHP
    Attribute_Definition:
        Natural Heritage Program global ranking. When no information was provided on
        the global rank for a species, the field is blank.
    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: No information was provided on
            the global rank for the species
            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
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
>> *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
>>> *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
　　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
　　　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, and to G_SOURCE and S_SOURCE in the BIORES table.
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: Scale denominator of the source
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: integer
Enumerated_Domain_Value_Definition: Any integer
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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:

Enumerated_Domain:
    Enumerated_Domain_Value: MM/DD/YY
    Enumerated_Domain_Value_Definition: Month/Day/Year
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: MM/YYYY
        Enumerated_Domain_Value_Definition: Month/Year
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: UNKNOWN
        Enumerated_Domain_Value_Definition: Date information unknown
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Detailed_Description:
    Entity_Type:
        Entity_Type_Label: STATUS
        Entity_Type_Definition:
            The data table STATUS identifies the species that are listed as threatened or endangered by a state or federal 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: 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: U.S. Fish and Wildlife
            Service
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: T
            Enumerated_Domain_Value_Definition: Threatened on state list
            Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
            Service
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: C
            Enumerated_Domain_Value_Definition: Species of Special Concern
            Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
            Service

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: U.S. Fish and Wildlife
            Service
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: T
            Enumerated_Domain_Value_Definition: Threatened on federal list
            Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
            Service
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: C
            Enumerated_Domain_Value_Definition: Species of Special Concern
            Enumerated_Domain_Value_Definition_Source: U.S. Fish and Wildlife
            Service

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: 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: 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 Columbia River
    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: 200411
    Metadata_Review_Date: 200411
    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 2.8.2 on Fri Dec 10 11:58:12 2004

Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
            Publication_Date: 200411
            Title: Columbia River ESI: MGT (Management Area Polygons)
            Edition: First
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Columbia River
            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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
    Description:
        Abstract:
            This data set contains sensitive human-use data for Wildlife Refuges, National Forests, and State Parks for the Columbia River area. 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 Columbia River. 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

Columbia River 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: 1981

Ending_Date: 2004

Currentness_Reference:

The MGT data were compiled during 2003-2004. The currentness dates for the data range from 1981 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: -124.125

East_Bounding_Coordinate: -120.67375

North_Bounding_Coordinate: 46.375

South_Bounding_Coordinate: 45.3

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 Area

Place:

Place_Keyword_Thesaurus: None

Place_Keyword: Columbia River

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 Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.

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, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, nwi.e00, reptiles.e00, socecon.e00, t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, runs_dat, 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 digital boundaries for management areas. These data do not necessarily represent all management area sites in the Columbia River region. See also the SOCECON (Socioeconomic Resource Points and Lines) data layer, part of the larger Columbia River ESI database, for additional human-use information.
    Positional_Accuracy:
        Horizontal_Positional_Accuracy:
            Horizontal_Positional_Accuracy_Report:
                    The MGT 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: U.S. Fish and Wildlife Service (USFWS)

          Publication_Date: 1981
          Title: Hoquiam Washington-Oregon, Pacific Coast Ecological Inventory
          Geospatial_Data_Presentation_Form: Hardcopy Map
          Publication_Information:
             Publication_Place: Washington, D.C.
             Publisher: U.S. Government Printing Office
      Source_Scale_Denominator: 250,000
      Type_of_Source_Media: Paper
      Source_Time_Period_of_Content:
        Time_Period_Information:
          Single_Date/Time:
             Calendar_Date: 1981
        Source_Currentness_Reference: Publication date
      Source_Citation_Abbreviation: None
      Source_Contribution: Regional park boundaries
Source_Information:
      Source_Citation:
        Citation_Information:
          Originator: Clark, A., U.S. Fish and Wildlife Service (USFWS)
          Publication_Date: 200402
          Title:
             Distribution of Fish, Birds, Plants, and Mammals in the Columbia
             River
          Geospatial_Data_Presentation_Form: Expert Knowledge
          Publication_Information:
             Publication_Place: Unpublished material
             Publisher: Unpublished material
      Type_of_Source_Media: Personal communication
      Source_Time_Period_of_Content:
        Time_Period_Information:
          Single_Date/Time:
             Calendar_Date: 200402
        Source_Currentness_Reference: Publication date
      Source_Citation_Abbreviation: None
      Source_Contribution: Wildlife Refuge boundaries
Source_Information:
      Source_Citation:
        Citation_Information:
          Originator: Nebeker, M., Oregon Department of Fish and Wildlife
          (ODFW)
          Publication_Date: 200402
          Title: Distribution of Wildlife on Sauvie Island and Surrounding Areas
          Geospatial_Data_Presentation_Form: Expert Knowledge
          Publication_Information:
             Publication_Place: Unpublished material
             Publisher: Unpublished material
      Type_of_Source_Media: Personal communication
      Source_Time_Period_of_Content:
        Time_Period_Information:
          Single_Date/Time:
             Calendar_Date: 200402
        Source_Currentness_Reference: Date of communication
      Source_Citation_Abbreviation: None
      Source_Contribution: Sauvie Island Wildlife Area boundary
Source_Information:
      Source_Citation:
        Citation_Information:
          Originator: DeLorme
          Publication_Date: 2001
          Title: Oregon Atlas and Gazetteer

     Geospatial_Data_Presentation_Form: Hardcopy atlas
     Publication_Information:
       Publication_Place: Yarmouth, Maine
       Publisher: DeLorme
   Source_Scale_Denominator: 150,000
   Type_of_Source_Media: Paper
   Source_Time_Period_of_Content:
     Time_Period_Information:
       Single_Date/Time:
         Calendar_Date: 2001
     Source_Currentness_Reference: Publication date
   Source_Citation_Abbreviation: None
   Source_Contribution: Oregon state park boundaries
 Source_Information:
   Source_Citation:
     Citation_Information:
       Originator: University of Washington
       Publication_Date: Varies
       Title: USGS Digital Raster Graphics
       Geospatial_Data_Presentation_Form: Raster digital data
       Publication_Information:
         Publication_Place: Seattle, Washington
         Publisher: University of Washington Libraries
   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: Publication date
   Source_Citation_Abbreviation: None
   Source_Contribution: Oregon state park boundaries
 Source_Information:
   Source_Citation:
     Citation_Information:
       Originator: Washington State Parks and Recreation Commission
       Publication_Date: 2004
       Title: Washington State Park Boundaries
       Geospatial_Data_Presentation_Form: Vector digital data
       Publication_Information:
         Publication_Place: Unpublished material
         Publisher: Unpublished material
   Source_Scale_Denominator: 24,000
   Type_of_Source_Media: Electronic mail system
   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: Washington state park boundaries
 Source_Information:
   Source_Citation:
     Citation_Information:
       Originator: Anderson, E., U.S. Fish and Wildlife Service (USFWS)
       Publication_Date: 2004
       Title: Ridgefield National Wildlife Complex Boundaries
       Geospatial_Data_Presentation_Form: Vector digital data
       Publication_Information:
         Publication_Place: Unpublished material

Publisher: Unpublished material
Source_Scale_Denominator: 24,000
Type_of_Source_Media: Electronic mail system
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: Ridgefield National Wildlife Complex boundaries
Process_Step:
    Process_Description:
      Digital vector lines used to depict management areas (State Parks) for Washington in this data layer were provided by Washington Department of Parks and Recreation. Boundaries for the Ridgefield National Wildlife Refuge complex (Washington) were provided by U.S. Fish and Wildlife Service (USFWS). Management boundaries for the state of Oregon were digitized from U.S. Geological Survey (USGS) Digital Raster Graphics (DRGs). The MGT data layer was incorporated into an ArcInfo system along with the SOCECON and biology data layers, and hardcopy draft maps were created using U.S. Geological Survey 1:24,000 topographic quadrangles as base maps. Following the creation of draft maps, a second set of interviews were conducted with the resource experts. Participants who were unable to attend the meetings were sent a set of maps to review. Edits to the MGT data layer were based on the recommendations of the resource experts, and final hardcopy maps were created.
    Process_Date: 200408
    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 rings
        Point_and_Vector_Object_Count: 78
      SDTS_Terms_Description:
        SDTS_Point_and_Vector_Object_Type: Area point
        Point_and_Vector_Object_Count: 78
      SDTS_Terms_Description:
        SDTS_Point_and_Vector_Object_Type: Complete chain
        Point_and_Vector_Object_Count: 110
      SDTS_Terms_Description:
        SDTS_Point_and_Vector_Object_Type: Link
        Point_and_Vector_Object_Count: 18385
      SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 104

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: 6378206.4
            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 (the Columbia River atlas number is 41). ID is a unique combination of the atlas number (41), 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 boundaries of 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: FO
                    Enumerated_Domain_Value_Definition: National Forest
                    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 (41), 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: 411100002
        Range_Domain_Maximum: 411100079

Attribute:
Attribute_Label: HUNUM
Attribute_Definition:
    An identifier that links directly to the SOC_DAT 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: 41000065
        Range_Domain_Maximum: 41000112

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: 41000001
        Range_Domain_Maximum: 41000112

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 (41), 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: 411000001
        Range_Domain_Maximum: 411100079

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:* 41000001
> > *Range_Domain_Maximum:* 41000112

Attribute:
Attribute_Label: TYPE
Attribute_Definition: Identifies the feature type
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
> *Enumerated_Domain:*
> > *Enumerated_Domain_Value:* AQUACULTURE
> > *Enumerated_Domain_Value_Definition:* Aquaculture
> > *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
> > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute_Domain_Values:
> *Enumerated_Domain:*
> > *Enumerated_Domain_Value:* FERRY
> > *Enumerated_Domain_Value_Definition:* Ferry
> > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute_Domain_Values:
> *Enumerated_Domain:*
> > *Enumerated_Domain_Value:* HATCHERY
> > *Enumerated_Domain_Value_Definition:* Hatchery
> > *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:* MARINA
> > *Enumerated_Domain_Value_Definition:* Marina
> > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute_Domain_Values:
> *Enumerated_Domain:*
> > *Enumerated_Domain_Value:* NATIONAL FOREST
> > *Enumerated_Domain_Value_Definition:* National Forest

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: 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: RECREATIONAL FISHING
            Enumerated_Domain_Value_Definition: Recreational Fishing
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: SUBSISTENCE
            Enumerated_Domain_Value_Definition: Subsistence use
            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, and to G_SOURCE and S_SOURCE in the BIORES table.
>> *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: Scale denominator of the source
      Attribute_Definition_Source: Research Planning, Inc.
      Attribute_Domain_Values:
            Enumerated_Domain:
                  Enumerated_Domain_Value: integer
                  Enumerated_Domain_Value_Definition: Any integer
                  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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:
            Enumerated_Domain:
                  Enumerated_Domain_Value: MM/DD/YY
                  Enumerated_Domain_Value_Definition: Month/Day/Year
                  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
      Attribute_Domain_Values:
            Enumerated_Domain:
                  Enumerated_Domain_Value: MM/YYYY
                  Enumerated_Domain_Value_Definition: Month/Year
                  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
      Attribute_Domain_Values:
            Enumerated_Domain:
                  Enumerated_Domain_Value: UNKNOWN
                  Enumerated_Domain_Value_Definition: Date information unknown
                  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 Columbia River
      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: 200411
    Metadata_Review_Date: 200411
    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 2.8.2 on Fri Dec 10 12:55:49 2004

Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
            Publication_Date: 200411
            Title:
                Columbia River ESI: SOCECON (Socioeconomic Resource Points and Lines)
            Edition: First
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Columbia River
            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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.
    Description:
        Abstract:
            This data set contains vector points and lines representing human-use resource data for Columbia River. In the data set, vector points represent aquaculture sites, boat ramps, coast guard stations, ferry sites, hatchery sites, locks and dams, marinas, recreational fishing sites, subsistence sites, and water intakes. Vector lines represent roads, bridges, and state borders. Location-specific type and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer.

            This data set comprises a portion of the Environmental Sensitivity Index (ESI) data for Columbia River. 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 Columbia River 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 2003-2004. 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: -124.125

East_Bounding_Coordinate: -120.67375

North_Bounding_Coordinate: 46.375

South_Bounding_Coordinate: 45.3

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: Columbia River

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 Columbia River 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; Coastal Storms Initiative; U.S. Fish and Wildlife Service; NOAA Fisheries; State of Oregon; and State of Washington.

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, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, nwi.e00, reptiles.e00, socecon.e00, t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, runs_dat, 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 socioeconomic resources. These data do not necessarily represent all human-use sites in the Columbia River area. See also the MGT (Management Area Polygons) data layer, part of the larger Columbia River ESI database, for additional human-use information.

    Positional_Accuracy:
        Horizontal_Positional_Accuracy:
            Horizontal_Positional_Accuracy_Report:
The spatial components of the SOCECON data set were developed from pre-existing digital and hardcopy sources and regional expert knowledge. It is difficult to estimate the positional accuracy of such data, except to state that hardcopy data were compiled on base maps with a scale of 1:24,000. See the Lineage and Process_Description sections for more information on the original data

sources and how the data were integrated or manipulated to create the final data set.

Lineage:
　Source_Information:
　　Source_Citation:
　　　Citation_Information:
　　　　Originator: North, J., Oregon Department of Fish and Wildlife (ODFW)
　　　　Publication_Date: 200402
　　　　Title: Fish, Bird, and Mammal Distributions along the Columbia River
　　　　Geospatial_Data_Presentation_Form: Expert knowledge
　　　　Publication_Information:
　　　　　Publication_Place: Unpublished material
　　　　　Publisher: Unpublished material
　　Type_of_Source_Media: Personal communication
　　Source_Time_Period_of_Content:
　　　Time_Period_Information:
　　　　Single_Date/Time:
　　　　　Calendar_Date: 200402
　　　Source_Currentness_Reference: Date of communication
　　Source_Citation_Abbreviation: None
　　Source_Contribution: Location of aquaculture sites and fish hatcheries
　Source_Information:
　　Source_Citation:
　　　Citation_Information:
　　　　Originator: Pribyl, S., Oregon Department of Fish and Wildlife (ODFW)
　　　　Publication_Date: 200401
　　　　Title: Fish Distribution in the Columbia River
　　　　Geospatial_Data_Presentation_Form: Expert knowledge
　　　　Publication_Information:
　　　　　Publication_Place: Unpublished material
　　　　　Publisher: Unpublished material
　　Type_of_Source_Media: Personal communication
　　Source_Time_Period_of_Content:
　　　Time_Period_Information:
　　　　Single_Date/Time:
　　　　　Calendar_Date: 200401
　　　Source_Currentness_Reference: Date of communication
　　Source_Citation_Abbreviation: None
　　Source_Contribution:
　　　Location of aquaculture and recreational fishing sites, boat ramps, and marinas
　Source_Information:
　　Source_Citation:
　　　Citation_Information:
　　　　Originator:
　　　　　Meyer, B., National Oceanic and Atmospheric Administration
　　　　　(NOAA)
　　　　Publication_Date: 200402
　　　　Title:
　　　　　Fish, Bird, Mammal, and Plant Distributions in the Lower
　　　　　Columbia River
　　　　Geospatial_Data_Presentation_Form: Expert Knowledge
　　　　Publication_Information:
　　　　　Publication_Place: Unpublished material
　　　　　Publisher: Unpublished material
　　Type_of_Source_Media: Personal communication
　　Source_Time_Period_of_Content:
　　　Time_Period_Information:
　　　　Single_Date/Time:
　　　　　Calendar_Date: 200402
　　　Source_Currentness_Reference: Date of communication
　　Source_Citation_Abbreviation: None

Source_Contribution:
Location of aquaculture and recreational fishing sites, fish hatcheries, boat ramps, marinas, and Coast Guard stations
Source_Information:
Source_Citation:
Citation_Information:
Originator: Anderson, E., U.S. Fish and Wildlife Service (USFWS)
Publication_Date: 200401
Title: Distribution of Wildlife on the Lower Columbia River
Geospatial_Data_Presentation_Form: Expert Knowledge
Publication_Information:
Publication_Place: Unpublished material
Publisher: Unpublished material
Type_of_Source_Media: Personal communication
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 200401
Source_Currentness_Reference: Date of communication
Source_Citation_Abbreviation: None
Source_Contribution: Location of boat ramps, marinas, and water intakes
Source_Information:
Source_Citation:
Citation_Information:
Originator: Clark, A., U.S. Fish and Wildlife Service (USFWS)
Publication_Date: 200402
Title:
Distribution of Fish, Birds, Plants, and Mammals in the Columbia River
Geospatial_Data_Presentation_Form: Expert Knowledge
Publication_Information:
Publication_Place: Unpublished material
Publisher: Unpublished material
Type_of_Source_Media: Personal communication
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 200402
Source_Currentness_Reference: Publication date
Source_Citation_Abbreviation: None
Source_Contribution:
Location of aquaculture sites, boat ramps, marinas, ferries, locks and dams, and subsistence sites
Source_Information:
Source_Citation:
Citation_Information:
Originator: Peterson, D., Washington Parks and Recreation Commission
Publication_Date: 2004
Title: Washington State Parks
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:
Publication_Place: Unpublished material
Publisher: Unpublished material
Source_Scale_Denominator: Unknown
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 2004
Source_Currentness_Reference: Publication date

        Source_Citation_Abbreviation: None
        Source_Contribution: Location of boat ramps
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: Nebeker, M., Oregon Department of Fish and Wildlife
            (ODFW)
            Publication_Date: 200402
            Title: Distribution of Wildlife on Sauvie Island and Surrounding Areas
            Geospatial_Data_Presentation_Form: Expert Knowledge
            Publication_Information:
                Publication_Place: Unpublished material
                Publisher: Unpublished material
    Type_of_Source_Media: Personal communication
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 200402
        Source_Currentness_Reference: Date of communication
    Source_Citation_Abbreviation: None
    Source_Contribution: Sauvie Island boat ramps and water intakes
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: Washington Department of Fish and Wildlife
            Publication_Date: 200012
            Title: Hatcheries and Facilities on the Columbia River
            Geospatial_Data_Presentation_Form: Vector digital data
            Publication_Information:
                Publication_Place: Seattle, Washington
                Publisher: Washington Department of Fish and Wildlife
    Source_Scale_Denominator: 100,000
    Type_of_Source_Media: CD-ROM
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 200012
        Source_Currentness_Reference: Publication date
    Source_Citation_Abbreviation: None
    Source_Contribution: Location of fish hatcheries
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: Colin Plank, Research Planning, Inc.
            Publication_Date: Unpublished material
            Title: ESI Overflight
            Geospatial_Data_Presentation_Form: Map
            Publication_Information:
                Publication_Place: Unpublished material
                Publisher: Unpublished material
    Source_Scale_Denominator: 24000
    Type_of_Source_Media: Paper
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 200310
        Source_Currentness_Reference: Date of overflight
    Source_Citation_Abbreviation: None
    Source_Contribution: Location of boat ramps and locks and dams
Source_Information:

Source_Citation:
    Citation_Information:
        Originator: University of Washington
        Publication_Date: Varies
        Title: USGS Digital Raster Graphics
        Geospatial_Data_Presentation_Form: Raster digital data
        Publication_Information:
            Publication_Place: Seattle, Washington
            Publisher: University of Washington Libraries
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: Publication date
Source_Citation_Abbreviation: None
Source_Contribution: Location of boat ramps
Process_Step:
    Process_Description:
        Four main sources of data were used to depict human-use resources for this data layer: (1) personal interviews with resource experts from the Oregon Department of Fish and Wildlife (ODFW), U.S. Fish and Wildlife Service (USFWS), and National Oceanographic and Atmospheric Administration (NOAA); (2) Washington Department of Fish and Wildlife (WDFW) StreamNet data; (3) Washington State Parks and Recreation digital data; and (4) numerous published and unpublished reports. Hardcopy data and local knowledge data were digitized off of 1:24,000 scale basemaps. Resource agencies confirmed the accuracy of the boundaries during review.
    Process_Date: 200408
    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: 119
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Complete chain
            Point_and_Vector_Object_Count: 114
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Link
            Point_and_Vector_Object_Count: 1300

SDTS_Terms_Description:
    SDTS_Point_and_Vector_Object_Type: Node, planar graph
    Point_and_Vector_Object_Count: 193

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: 6378206.4
      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 (the Columbia River atlas number is 41). ID is a unique combination of the atlas number (41), 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.AAT
      Entity_Type_Definition:
        The SOCECON.AAT table contains attribute information for the vector lines representing roads, state boundaries, and bridges. 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: SOCECON.PAT
      Entity_Type_Definition:
        The SOCECON.PAT table contains attribute information for the vector points
        representing aquaculture sites, boat ramps, coast guard stations, ferry sites, hatchery
        sites, locks and dams, marinas, recreational fishing sites, subsistence locations, 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
          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
          Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
      Attribute_Domain_Values:
        Enumerated_Domain:
          Enumerated_Domain_Value: F
          Enumerated_Domain_Value_Definition: Ferry
          Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
      Attribute_Domain_Values:
        Enumerated_Domain:
          Enumerated_Domain_Value: HA
          Enumerated_Domain_Value_Definition: Hatchery
          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: RF
          Enumerated_Domain_Value_Definition: Recreational Fishing
          Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
      Attribute_Domain_Values:
        Enumerated_Domain:

Enumerated_Domain_Value: S
Enumerated_Domain_Value_Definition: Subsistence use
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 (41), element number
(10), and record number.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum: 411000001
Range_Domain_Maximum: 411000119
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: 41000001
Range_Domain_Maximum: 41000104
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: 41000001
Range_Domain_Maximum: 41000112
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 (41), 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: 411000001
Range_Domain_Maximum: 411100079
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: 41000001
            Range_Domain_Maximum: 41000112
Attribute:
    Attribute_Label: TYPE
    Attribute_Definition: Identifies the feature type
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: AQUACULTURE
            Enumerated_Domain_Value_Definition: Aquaculture
            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
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: FERRY
            Enumerated_Domain_Value_Definition: Ferry
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: HATCHERY
            Enumerated_Domain_Value_Definition: Hatchery
            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: MARINA
            Enumerated_Domain_Value_Definition: Marina
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: NATIONAL FOREST

Enumerated_Domain_Value_Definition: National Forest
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 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: RECREATIONAL FISHING
Enumerated_Domain_Value_Definition: Recreational Fishing
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: SUBSISTENCE
Enumerated_Domain_Value_Definition: Subsistence use
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, and to G_SOURCE and
   S_SOURCE in the BIORES table.
  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: Scale denominator of the source
      Attribute_Definition_Source: Research Planning, Inc.
      Attribute_Domain_Values:
         Enumerated_Domain:
           Enumerated_Domain_Value: integer
           Enumerated_Domain_Value_Definition: Any integer
           Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
   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:
         Enumerated_Domain:
           Enumerated_Domain_Value: MM/DD/YY
           Enumerated_Domain_Value_Definition: Month/Day/Year
           Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
      Attribute_Domain_Values:
         Enumerated_Domain:
           Enumerated_Domain_Value: MM/YYYY
           Enumerated_Domain_Value_Definition: Month/Year
           Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
      Attribute_Domain_Values:
         Enumerated_Domain:
           Enumerated_Domain_Value: UNKNOWN
           Enumerated_Domain_Value_Definition: Date information unknown
           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 Columbia River
   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: 200411
    Metadata_Review_Date: 200411
    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 2.8.2 on Fri Dec 10 13:04:22 2004

Columbia River 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)
NWI (POLYS)
   ESI (10, 10, C)

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

BIRDS (POLYS)
   ID (10, 10, I)
   RARNUM (9, 9, I)
FISH (POLYS)
   ID (10, 10, I)
   RARNUM (9, 9, I)
FISHL (LINES)
   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)
M_MAMPT (POINTS)
   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)
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)

RUNS_DAT
   EL_SPE (6, 6, C)
   SPECIES (40, 40, C)
   RUN (40, 40, C)
   OR (5, 5, C)
   WA (5, 5, C)
   FEDERAL (5, 5, C)
   ESA_YEAR (4, 4, N)

STATUS
   ELEMENT (10, 10, C)
   SPECIES_ID (5, 5, I)
   STATE (2, 2, C)
   S (1, 1, C)
   F (1, 1, C)
   STATE (2, 2, C)
   S_DATE (10, 10, I)
   F_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)