Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Puget Sound and Strait of Juan de Fuca, Washington: 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.
            Publication_Date: 200607
            Title:
                Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Puget Sound and Strait of Juan de Fuca, Washington: HYDRO (Hydrography Lines and Polygons)
            Edition: First
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Puget Sound and Strait of Juan de Fuca, Washington
            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:
                Funding was provided by Navy Region Northwest. This data set was prepared by Concurrent Technologies Corporation, Bremerton, Washington, and Sound GIS, Seattle, Washington with support from 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.

Description:

Abstract:

This data set contains vector lines and polygons representing coastal hydrography used in the creation of the Environmental Sensitivity Index (ESI) for Puget Sound and Strait of Juan de Fuca, Washington. The HYDRO data layer contains all annotation used in producing the atlas. The annotation features are categorized into three subclasses in order to simplify the mapping and quality control procedures: GEOG for geographic features, SOC for socioeconomic features, and HYDRO for water features.

This data set comprises a portion of the ESI data for Puget Sound and Strait of Juan de Fuca, Washington. ESI data characterize the marine and coastal environments and wildlife by their sensitivity to spilled oil. The data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources.

Purpose:

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

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1985

Ending_Date: 2005

Currentness_Reference:

The data were compiled during 2005-2006. The currentness dates for the data range from 1985 to 2005 and are documented in the Lineage section.

Status:

Progress: Complete

Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -124.75100

East_Bounding_Coordinate: -122.12600

North_Bounding_Coordinate: 49.00000

South_Bounding_Coordinate: 47.00000

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: Puget Sound and Strait of Juan de Fuca, Washington

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 Puget Sound and Strait of Juan de Fuca, Washington ESI data.
>
> *Browse_Graphic_File_Type:* JPEG

Data_Set_Credit:

> This project was funded by Navy Region Northwest and was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.

Native_Data_Set_Environment:

> The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 9.1) and SQL SERVER(r) (version 2000). The hardware configuration is PC's with Windows Operating System (2000/XP/2003).
>
> The Spatial_Data_Organization Information section refers only to the source files in the ARC export format. The following files are included in the data set: birds.e00, esi.e00, fish.e00, fishl.e00, habitatl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mampt.e00, mgt.e00, nests.e00, socecon.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

Data_Quality_Information:

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

process includes multiple automated logical consistency checks that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and SQL SERVER(r) to ARC/INFO(r) consistencies. A final review is made by the GIS manager, where the data are written to CD-ROM and the metadata are written. After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks.

Completeness_Report:
    These data represent linear and polygonal hydrography for Puget Sound and Strait of Juan de Fuca, Washington.

Positional_Accuracy:
    Horizontal_Positional_Accuracy:
        Horizontal_Positional_Accuracy_Report:
            The HYDRO data set was developed from pre-existing digital data and reflects the positional accuracy of these original data. The horizontal positional accuracy of the 1:24,000 U.S. Geological Survey (USGS) topographic quads should conform to National Map Accuracy Standards at scales of 1:24,000. See the Lineage and Process_Description sections for more information on the original source data and how these data were integrated or manipulated to create the final data set.

Lineage:
    Source_Information:
        Source_Citation:
            Citation_Information:
                Originator: RESEARCH PLANNING, INC. (RPI)
                Publication_Date: 2005
                Title: RPI INDEX
                Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
                Other_Citation_Details: UNPUBLISHED
        Source_Scale_Denominator: 24,000
        Type_of_Source_Media: GENERATED BY RPI
        Source_Time_Period_of_Content:
            Time_Period_Information:
                Single_Date/Time:
                    Calendar_Date: 2005
            Source_Currentness_Reference: DATE OF PUBLICATION
        Source_Citation_Abbreviation: NONE
        Source_Contribution: HYDRO INFORMATION
    Source_Information:
        Source_Citation:
            Citation_Information:
                Originator: RESEARCH PLANNING, INC. (RPI)
                Publication_Date: 1985
                Title: ENVIRONMENTAL SENSITIVITY INDEX MAP
                Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
                Other_Citation_Details: RESEARCH PLANNING, INC, COLUMBIA, SC
        Source_Scale_Denominator: 24,000
        Type_of_Source_Media: CD-ROM
        Source_Time_Period_of_Content:
            Time_Period_Information:
                Single_Date/Time:
                    Calendar_Date: 1985
            Source_Currentness_Reference: DATE OF PUBLICATION

Source_Citation_Abbreviation: NONE
Source_Contribution: HYDRO INFORMATION
Source_Information:
   Source_Citation:
      Citation_Information:
         Originator: U.S. GEOLOGICAL SURVEY (USGS)
         Publication_Date: 1999
         Title: 1999 DOQQ
         Geospatial_Data_Presentation_Form: RASTER DIGITAL DATA
         Other_Citation_Details: USGS
   Type_of_Source_Media: CD-ROM
   Source_Time_Period_of_Content:
      Time_Period_Information:
         Single_Date/Time:
            Calendar_Date: 1999
      Source_Currentness_Reference: DATE OF SURVEY
   Source_Citation_Abbreviation: NONE
   Source_Contribution: HYDRO INFORMATION
Source_Information:
   Source_Citation:
      Citation_Information:
         Originator: U.S. GEOLOGICAL SURVEY (USGS)
         Publication_Date: 1994
         Title: USGS DIGITAL ORTHOPHOTO
         Geospatial_Data_Presentation_Form: RASTER DIGITAL DATA
         Other_Citation_Details: UNPUBLISHED
   Type_of_Source_Media: CD-ROM
   Source_Time_Period_of_Content:
      Time_Period_Information:
         Single_Date/Time:
            Calendar_Date: 1994
      Source_Currentness_Reference: DATE OF SURVEY
   Source_Citation_Abbreviation: NONE
   Source_Contribution: HYDRO INFORMATION
Source_Information:
   Source_Citation:
      Citation_Information:
         Originator: U.S. GEOLOGICAL SURVEY (USGS)
         Publication_Date: VARIES
         Title: USGS DIGITAL RASTER GRAPHICS
         Geospatial_Data_Presentation_Form: RASTER DIGITAL DATA
         Other_Citation_Details: USGS, RESTON, VA.
   Source_Scale_Denominator: 24,000
   Type_of_Source_Media: CD-ROM
   Source_Time_Period_of_Content:
      Time_Period_Information:
         Single_Date/Time:
            Calendar_Date: VARIES
      Source_Currentness_Reference: DATE OF SURVEY
   Source_Citation_Abbreviation: NONE
   Source_Contribution: HYDRO INFORMATION

Source_Information:

    Source_Citation:

        Citation_Information:

            Originator: WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES (DNR)

            Publication_Date: 2000

            Title: WASHINGTON STATE SHOREZONE INVENTORY

            Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA

            Other_Citation_Details: WASHINGTON STATE DNR, OLYMPIA, WA

    Source_Scale_Denominator: 12,000

    Type_of_Source_Media: CD-ROM

    Source_Time_Period_of_Content:

        Time_Period_Information:

            Single_Date/Time:

                Calendar_Date: 2000

        Source_Currentness_Reference: DATE OF SURVEY

    Source_Citation_Abbreviation: NONE

    Source_Contribution: HYDRO INFORMATION

Process_Step:

    Process_Description:

        The shoreline was derived primarily from digital coastline data originating from Washington State Department of Natural Resources (DNR) and provided for the project by Concurrent Technologies Corporation (CTC). Changes in this data were digitized from U.S. Geological Survey USGS digital orthophoto quarter quadrangles (DOQQs) and USGS digital raster graphics (DRGs). In some cases, gross shoreline changes were sketched by Research Planning, Inc., based on oblique area photographs taken from 2000 to 2002.

        The above digital and/or hardcopy sources were compiled to create the HYDRO data layer. Depending on the type of source data, three general approaches are used for compiling the data layer: (1) hardcopy maps are digitized at their source scale; (2) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources; and (3) overflight changes are digitized from the scanned and registered hardcopy field maps or aerial photography. After the initial shoreline classification, these data are edgematched and checked for logical consistency errors. Review maps are plotted at 1:24,000 scale for verification of polygonal and linear attributes. See the Lineage section for additional information on the type of source data for this data layer. The compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. If necessary, edits to the HYDRO data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.

    Process_Date: 200605

    Process_Contact:

        Contact_Information:

            Contact_Organization_Primary:

                Contact_Organization: NOAA, Office of Response and Restoration

                Contact_Person: Jill Petersen

            Contact_Address:

Address_Type: Physical address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: Jill.Petersen@noaa.gov

Spatial_Data_Organization_Information:
    Direct_Spatial_Reference_Method: Vector
    Point_and_Vector_Object_Information:
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: GT-polygon composed of chains
            Point_and_Vector_Object_Count: 508
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Area point
            Point_and_Vector_Object_Count: 509
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Complete chain
            Point_and_Vector_Object_Count: 10171
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Link
            Point_and_Vector_Object_Count: 203127
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Label Point
            Point_and_Vector_Object_Count: 329
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Node, planar graph
            Point_and_Vector_Object_Count: 10165

Spatial_Reference_Information:
    Horizontal_Coordinate_System_Definition:
        Geographic:
            Latitude_Resolution: 0.000001
            Longitude_Resolution: 0.000001
            Geographic_Coordinate_Units: Decimal degrees
        Geodetic_Model:
            Horizontal_Datum_Name: North American Datum of 1983
            Ellipsoid_Name: Geodetic Reference System 80
            Semi-major_Axis: 6378137.000000
            Denominator_of_Flattening_Ratio: 298.257222

Entity_and_Attribute_Information:
    Overview_Description:
        Entity_and_Attribute_Overview:
            In addition to the geographic data layers, one relational attribute or data table, SOURCES,
            is used to store the source data information in the ESI data structure. The geographic data

layer containing resource information (in this case, HYDRO) is linked to the SOURCES table using the SOURCE_ID. The entity-relationship diagram describes the relationships between the attribute tables in the ESI data structure.

Detailed_Description:

    Entity_Type:

        Entity_Type_Label: HYDRO.AAT

        Entity_Type_Definition:

            The HYDRO.AAT table contains attribute information for the vector lines representing linear hydrography features in the HYDRO data layer.

        Entity_Type_Definition_Source: Research Planning, Inc.

    Attribute:

        Attribute_Label: LINE

        Attribute_Definition: Type of geographic feature.

        Attribute_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

                Enumerated_Domain_Value: B

                Enumerated_Domain_Value_Definition: Breakwater

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

            Enumerated_Domain:

                Enumerated_Domain_Value: 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: P

                Enumerated_Domain_Value_Definition: Pier

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

            Enumerated_Domain:

                Enumerated_Domain_Value: S

                Enumerated_Domain_Value_Definition: Shoreline

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute:

        Attribute_Label: SOURCE_ID

        Attribute_Definition:

            Spatial data source for the data layer lines that link to records in the SOURCES data table.

        Attribute_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Range_Domain:

                Range_Domain_Minimum: 1

                Range_Domain_Maximum: N

Detailed_Description:

    Entity_Type:

        Entity_Type_Label: HYDRO.PAT

        Entity_Type_Definition:

            The HYDRO.PAT table contains attribute information for the vector polygons representing polygonal hydrography features in the HYDRO data layer.

        Entity_Type_Definition_Source: Research Planning, Inc.
    Attribute:
        Attribute_Label: WATER_CODE
        Attribute_Definition: Specifies a polygon as either water or land.
        Attribute_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: L
                Enumerated_Domain_Value_Definition: Land
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
            Enumerated_Domain:
                Enumerated_Domain_Value: W
                Enumerated_Domain_Value_Definition: Water
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Detailed_Description:
    Entity_Type:
        Entity_Type_Label: ANNO.GEOG
        Entity_Type_Definition:
            The spatial data layer HYDRO contains label points representing annotation for
            geographic features.
        Entity_Type_Definition_Source: Research Planning, Inc.
Detailed_Description:
    Entity_Type:
        Entity_Type_Label: ANNO.HYDRO
        Entity_Type_Definition:
            The spatial data layer HYDRO contains label points representing annotation for
            water features.
        Entity_Type_Definition_Source: Research Planning, Inc.
Detailed_Description:
    Entity_Type:
        Entity_Type_Label: ANNO.SOC
        Entity_Type_Definition:
            The spatial data layer HYDRO contains label points representing annotation for
            socioeconomic features.
        Entity_Type_Definition_Source: Research Planning, Inc.
Detailed_Description:
    Entity_Type:
        Entity_Type_Label: SOURCES
        Entity_Type_Definition:
            The data table SOURCES contains the primary sources used to create the ESI data
            set. See the Browse_Graphic section for a link to the entity-relationship diagram,
            which describes the way this table relates to other attribute tables in the ESI data
            structure.
        Entity_Type_Definition_Source: Research Planning, Inc.
    Attribute:
        Attribute_Label: SOURCE_ID
        Attribute_Definition:
            Source identifier that links records in the SOURCES data table to the items
            G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and
            S_SOURCE in the BIORES table; and SOURCE_ID in the ESI, HYDRO, AND
            SOCECON data layers.

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

Attribute:
    Attribute_Label: ORIGINATOR
    Attribute_Definition: Author or developer of source material or data set.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Unrepresentable_Domain: Acceptable values change from atlas to atlas.

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

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

Attribute:
    Attribute_Label: DATA_FORMAT
    Attribute_Definition: The format of the source material.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Unrepresentable_Domain: Acceptable values change from atlas to atlas.

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

Attribute:
    Attribute_Label: SCALE
    Attribute_Definition: Description of the source scale.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Unrepresentable_Domain: Acceptable values change from atlas to atlas.

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

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

Distribution_Information:
    Distributor:
        Contact_Information:
            Contact_Person_Primary:
                Contact_Person: John Kaperick
                Contact_Organization: NOAA, Office of Response and Restoration
            Contact_Address:
                Address_Type: Physical Address
                Address: 7600 Sand Point Way N.E.
                City: Seattle
                State_or_Province: Washington
                Postal_Code: 98115-6349
            Contact_Voice_Telephone: (206) 526-6400
            Contact_Facsimile_Telephone: (206) 526-6329
    Resource_Description:
        ESI Atlas for Puget Sound and Strait of Juan de Fuca, Washington
    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 a Geodatabase; ARC export, MOSS, and Shape files; and MARPLOT map folders. An
        ArcMap .mxd file, an ArcView 3.x ESI project, and an 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: 200607
    Metadata_Review_Date: 200607
    Metadata_Contact:
        Contact_Information:
            Contact_Person_Primary:
                Contact_Person: Jill Petersen
                Contact_Organization: NOAA, Office of Response and Restoration
            Contact_Position: GIS Manager
            Contact_Address:
                Address_Type: Physical Address
                Address: 7600 Sand Point Way N.E.

City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: Jill.Petersen@noaa.gov
Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998

Generated by mp version 2.8.21 on Mon Jul 24 13:32:56 2006

Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Puget Sound and Strait of Juan de Fuca, Washington: 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.
            Publication_Date: 200607
            Title:
                Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Puget Sound and Strait of Juan de Fuca, Washington: 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: Puget Sound and Strait of Juan de Fuca, Washington
            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:
                Funding was provided by Navy Region Northwest. This data set was prepared by Concurrent Technologies Corporation, Bremerton, Washington, and Sound GIS, Seattle, Washington with support from 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.

Description:

Abstract:

This data set contains vector lines and polygons representing the shoreline and coastal habitats in Puget Sound and Strait of Juan de Fuca, Washington, classified according to the Environmental Sensitivity Index (ESI) classification system. This data set comprises a portion of the ESI data for Puget Sound and Strait of Juan de Fuca. ESI data characterize the marine and coastal environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources.

Purpose:

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

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1994

Ending_Date: 2005

Currentness_Reference:

The data were compiled during 2005-2006. The currentness dates for the data range from 1994 to 2005 and are documented in the Lineage section.

Status:

Progress: Complete

Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -124.75100

East_Bounding_Coordinate: -122.12600

North_Bounding_Coordinate: 49.00000

South_Bounding_Coordinate: 47.00000

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: Puget Sound and Strait of Juan de Fuca, Washington

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 Puget Sound and Strait of Juan de Fuca, Washington ESI data.

>*Browse_Graphic_File_Type:* JPEG

Data_Set_Credit:

>This project was funded by Navy Region Northwest and was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.

Native_Data_Set_Environment:

>The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 9.1) and SQL SERVER(r) (version 2000). The hardware configuration is PC's with Windows Operating System (2000/XP/2003).

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

Data_Quality_Information:

>*Attribute_Accuracy:*

>>*Attribute_Accuracy_Report:*

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

>*Logical_Consistency_Report:*

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

consistency checks.

Completeness_Report:

These data represent coastal shorelines and habitats classified according to the Environmental Sensitivity Index (ESI) classification system.

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

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: RESEARCH PLANNING, INC. (RPI)

Publication_Date: 2005

Title: RPI INDEX

Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA

Other_Citation_Details: UNPUBLISHED

Source_Scale_Denominator: 24,000

Type_of_Source_Media: GENERATED BY RPI

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 2005

Source_Currentness_Reference: DATE OF PUBLICATION

Source_Citation_Abbreviation: NONE

Source_Contribution: ESI INFORMATION

Source_Information:

Source_Citation:

Citation_Information:

Originator: U.S. GEOLOGICAL SURVEY (USGS)

Publication_Date: 1994

Title: USGS DIGITAL ORTHOPHOTO

Geospatial_Data_Presentation_Form: RASTER DIGITAL DATA

Other_Citation_Details: UNPUBLISHED

Type_of_Source_Media: CD-ROM

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1994

Source_Currentness_Reference: DATE OF SURVEY

Source_Citation_Abbreviation: NONE

Source_Contribution: ESI INFORMATION

Source_Information:

    Source_Citation:

        Citation_Information:

            Originator: U.S. GEOLOGICAL SURVEY (USGS)

            Publication_Date: 2002

            Title: COLOR DIGITAL ORTHOPHOTO QUARTER QUADS

            Geospatial_Data_Presentation_Form: RASTER DIGITAL DATA

            Other_Citation_Details: UNIVERSITY OF WASHINGTON, UNIVERSITY LIBRARIES

    Type_of_Source_Media: ONLINE

    Source_Time_Period_of_Content:

        Time_Period_Information:

            Single_Date/Time:

                Calendar_Date: 2002

        Source_Currentness_Reference: DATE OF SURVEY

    Source_Citation_Abbreviation: NONE

    Source_Contribution: ESI INFORMATION

Source_Information:

    Source_Citation:

        Citation_Information:

            Originator: U.S. GEOLOGICAL SURVEY (USGS)

            Publication_Date: VARIES

            Title: USGS DIGITAL RASTER GRAPHICS

            Geospatial_Data_Presentation_Form: RASTER DIGITAL DATA

            Other_Citation_Details: USGS RESTON, VA.

    Source_Scale_Denominator: 24,000

    Type_of_Source_Media: CD-ROM

    Source_Time_Period_of_Content:

        Time_Period_Information:

            Single_Date/Time:

                Calendar_Date: VARIES

        Source_Currentness_Reference: DATE OF SURVEY

    Source_Citation_Abbreviation: NONE

    Source_Contribution: ESI INFORMATION

Source_Information:

    Source_Citation:

        Citation_Information:

            Originator: WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES (DNR)

            Publication_Date: 2000

            Title: WASHINGTON STATE SHOREZONE INVENTORY

            Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA

            Other_Citation_Details: WASHINGTON STATE DNR, OLYMPIA, WA

    Source_Scale_Denominator: 12,000

    Type_of_Source_Media: CD-ROM

    Source_Time_Period_of_Content:

        Time_Period_Information:

            Single_Date/Time:

                Calendar_Date: 2000

        Source_Currentness_Reference: DATE OF SURVEY

    Source_Citation_Abbreviation: NONE

Source_Contribution: ESI INFORMATION
Process_Step:
Process_Description:

Shoreline for Puget Sound was classified from oblique aerial photographs taken between 2000 and 2002 by Washington Department of Natural Resources (DNR). The classification was done on the Shorezone digital shoreline. Where appropriate, revisions to the existing shoreline were made based on the oblique aerial photos, digital raster graphics, and digital ortho quarter quads from 1990 and 1995. Where necessary, multiple habitats were described for each shoreline segment. All the work was done at 1:12,000 scale.

The above digital and/or hardcopy sources were compiled to create the ESI data layer. Depending on the type of source data, three general approaches are used for compiling the data layer: (1) hardcopy maps are digitized at their source scale; (2) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources; and (3) overflight classifications are digitized from the scanned and registered hardcopy field maps. After the initial shoreline classification, these data are edgematched and checked for logical consistency errors. Review maps are plotted at 1:24,000 scale for verification of polygonal and linear attributes. See the Lineage section for additional information on the type of source data for this data layer. The compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews are conducted to review the maps. If necessary, edits to the ESI data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.

Process_Date: 200605
Process_Contact:
Contact_Information:
Contact_Organization_Primary:
Contact_Organization: NOAA, Office of Response and Restoration
Contact_Person: Jill Petersen
Contact_Address:
Address_Type: Physical address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: Jill.Petersen@noaa.gov

Spatial_Data_Organization_Information:
Direct_Spatial_Reference_Method: Vector
Point_and_Vector_Object_Information:
SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: GT-polygon composed of chains
Point_and_Vector_Object_Count: 1066
SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: Area point

Point_and_Vector_Object_Count: 1067
SDTS_Terms_Description:
    SDTS_Point_and_Vector_Object_Type: Complete chain
    Point_and_Vector_Object_Count: 10698
SDTS_Terms_Description:
    SDTS_Point_and_Vector_Object_Type: Link
    Point_and_Vector_Object_Count: 273245
SDTS_Terms_Description:
    SDTS_Point_and_Vector_Object_Type: Node, planar graph
    Point_and_Vector_Object_Count: 10100

Spatial_Reference_Information:
    Horizontal_Coordinate_System_Definition:
        Geographic:
            Latitude_Resolution: 0.000001
            Longitude_Resolution: 0.000001
            Geographic_Coordinate_Units: Decimal degrees
        Geodetic_Model:
            Horizontal_Datum_Name: North American Datum of 1983
            Ellipsoid_Name: Geodetic Reference System 80
            Semi-major_Axis: 6378137.000000
            Denominator_of_Flattening_Ratio: 298.257222

Entity_and_Attribute_Information:
    Overview_Description:
        Entity_and_Attribute_Overview:
        In addition to the geographic data layers, one relational attribute or data table, SOURCES, is used to store the source data information in the ESI data structure. The geographic data layer containing resource information (in this case, ESI) is linked to the SOURCES table using the SOURCE_ID. The entity-relationship diagram describes the relationships between the attribute tables in the ESI data structure.
    Detailed_Description:
        Entity_Type:
            Entity_Type_Label: ESI.AAT
            Entity_Type_Definition:
            The ESI.AAT table contains attribute information for the vector lines representing linear shoreline features with ESI classification.
            Entity_Type_Definition_Source: Research Planning, Inc.
        Attribute:
            Attribute_Label: ESI
            Attribute_Definition:
            The item ESI contains values representing the ESI shoreline type. In many cases, shorelines are ranked with multiple codes, such as "6B/3A" (listed landward to seaward from left to right). The first code, "6B", is the most landward shoreline type and the second code, "3A", is the shoreline type closest to the water. Singular shoreline types are listed below. No multiple codes are listed, but all multiple codes included in the data set can be assembled from the codes described. The ESI rankings progress from low to high susceptibility to oil spills. To determine the sensitivity of a particular intertidal shoreline habitat, the following factors are

integrated: (1) Shoreline type (substrate, grain size, tidal elevation, origin); (2) Exposure to wave and tidal energy; (3) Biological productivity and sensitivity; (4) Ease of cleanup. Prediction of the behavior and persistence of oil in intertidal habitats is based on an understanding of the dynamics of the coastal environments, not just the substrate type and grain size. The intensity of energy expended upon a shoreline by wave action, tidal currents, and river currents directly affects the persistence of stranded oil. The need for shoreline cleanup activities is determined, in part, by the slowness of natural processes in removal of oil stranded on the shoreline. The potential for biological injury, and ease of cleanup of spilled oil, are also important factors in the ESI ranking. Generally speaking, areas exposed to high levels of physical energy, such as wave action and tidal currents, and low biological activity rank low on the scale, whereas sheltered areas with associated high biological activity have the highest ranking.

Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: 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, Mud, or Clay
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Enumerated_Domain:
  Enumerated_Domain_Value: 3A
  Enumerated_Domain_Value_Definition: Fine- to Medium-grained Sand Beaches
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Enumerated_Domain:
  Enumerated_Domain_Value: 3B
  Enumerated_Domain_Value_Definition: Scarps and Steep Slopes in Sand
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Enumerated_Domain:
  Enumerated_Domain_Value: 4
  Enumerated_Domain_Value_Definition: Coarse-grained Sand Beaches
  Enumerated_Domain_Value_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: 6D
        Enumerated_Domain_Value_Definition: Boulder Rubble
        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 and Sheltered Scarps in Bedrock, Mud, or Clay
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
   Enumerated_Domain:
        Enumerated_Domain_Value: 8B
        Enumerated_Domain_Value_Definition: Sheltered, Solid Man-made
        Structures
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
   Enumerated_Domain:
        Enumerated_Domain_Value: 8C
        Enumerated_Domain_Value_Definition: Sheltered Riprap
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
   Enumerated_Domain:
        Enumerated_Domain_Value: 9A
        Enumerated_Domain_Value_Definition: Sheltered Tidal Flats
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
   Enumerated_Domain:
        Enumerated_Domain_Value: 9B
        Enumerated_Domain_Value_Definition: 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: 10C
        Enumerated_Domain_Value_Definition: Swamps
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
   Enumerated_Domain:
        Enumerated_Domain_Value: U
        Enumerated_Domain_Value_Definition: Unranked
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
   Attribute_Label: LINE
   Attribute_Definition: Type of geographic feature.
   Attribute_Definition_Source: Research Planning, Inc.
   Attribute_Domain_Values:
      Enumerated_Domain:

      Enumerated_Domain_Value: B
      Enumerated_Domain_Value_Definition: Breakwater
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
     Enumerated_Domain:
      Enumerated_Domain_Value: F
      Enumerated_Domain_Value_Definition: Flat
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
     Enumerated_Domain:
      Enumerated_Domain_Value: 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: M
      Enumerated_Domain_Value_Definition: Marsh
      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:
     Source identifier that links to records in the SOURCES data table.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
     Range_Domain:
      Range_Domain_Minimum: 1
      Range_Domain_Maximum: N
   Attribute:
    Attribute_Label: ENVIR
    Attribute_Definition: Type of regional environment.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
     Enumerated_Domain:
      Enumerated_Domain_Value: E
      Enumerated_Domain_Value_Definition: Estuarine
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
     Enumerated_Domain:
      Enumerated_Domain_Value: U
      Enumerated_Domain_Value_Definition: Unranked
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Detailed_Description:
 Entity_Type:
  Entity_Type_Label: ESI.PAT
  Entity_Type_Definition:
   The ESI.PAT table contains attribute information for the vector polygons
   representing polygonal features with ESI classification.

Entity_Type_Definition_Source: Research Planning, Inc.
Attribute:
    Attribute_Label: ESI
    Attribute_Definition: The item ESI contains values representing the ESI polygon type.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: 7
            Enumerated_Domain_Value_Definition: Exposed Tidal Flats
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Enumerated_Domain:
            Enumerated_Domain_Value: 9A
            Enumerated_Domain_Value_Definition: Sheltered Tidal Flats
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Enumerated_Domain:
            Enumerated_Domain_Value: 10A
            Enumerated_Domain_Value_Definition: Salt- and Brackish-water marshes
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Enumerated_Domain:
            Enumerated_Domain_Value: U
            Enumerated_Domain_Value_Definition: Unranked
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
    Attribute_Label: WATER_CODE
    Attribute_Definition: Specifies a polygon as either water or land.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: L
            Enumerated_Domain_Value_Definition: Land
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Enumerated_Domain:
            Enumerated_Domain_Value: W
            Enumerated_Domain_Value_Definition: Water
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
    Attribute_Label: ENVIR
    Attribute_Definition: Type of regional environment.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: E
            Enumerated_Domain_Value_Definition: Estuarine
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Enumerated_Domain:
            Enumerated_Domain_Value: U
            Enumerated_Domain_Value_Definition: Unranked
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Detailed_Description:
    Entity_Type:
        Entity_Type_Label: SOURCES

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

Entity_Type_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: SOURCE_ID

Attribute_Definition:
> Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; and SOURCE_ID in the ESI, HYDRO, and SOCECON data layers.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
> *Range_Domain:*
>> *Range_Domain_Minimum:* 1
>> *Range_Domain_Maximum:* N

Attribute:

Attribute_Label: ORIGINATOR

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

Attribute_Definition_Source: Research Planning, Inc.

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

Attribute:

Attribute_Label: DATE_PUB

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
> *Enumerated_Domain:*
>> *Enumerated_Domain_Value:* YYYYMM
>> *Enumerated_Domain_Value_Definition:* YYYY for year and optionally MM for month
>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:

Attribute_Label: TITLE

Attribute_Definition: Title of source material or data.

Attribute_Definition_Source: Research Planning, Inc.

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

Attribute:

Attribute_Label: DATA_FORMAT

Attribute_Definition: The format of the source material.

Attribute_Definition_Source: Research Planning, Inc.

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

Attribute:

Attribute_Label: PUBLICATION

Attribute_Definition: Additional citation information.

Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Unrepresentable_Domain: Acceptable values change from atlas to atlas.
Attribute:
 Attribute_Label: SCALE
 Attribute_Definition: Description of the source scale.
 Attribute_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Unrepresentable_Domain: Acceptable values change from atlas to atlas.
Attribute:
 Attribute_Label: TIME_PERIOD
 Attribute_Definition:
  Date(s) of data collection that the source material is based upon.
 Attribute_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Distribution_Information:
 Distributor:
  Contact_Information:
   Contact_Person_Primary:
    Contact_Person: John Kaperick
    Contact_Organization: NOAA, Office of Response and Restoration
   Contact_Address:
    Address_Type: Physical Address
    Address: 7600 Sand Point Way N.E.
    City: Seattle
    State_or_Province: Washington
    Postal_Code: 98115-6349
   Contact_Voice_Telephone: (206) 526-6400
   Contact_Facsimile_Telephone: (206) 526-6329
 Resource_Description:
  ESI Atlas for Puget Sound and Strait of Juan de Fuca, Washington
 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 a Geodatabase; ARC export, MOSS, and Shape files; and MARPLOT map folders. An
  ArcMap .mxd file, an ArcView 3.x ESI project, and an 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: 200607
    Metadata_Review_Date: 200607
    Metadata_Contact:
        Contact_Information:
            Contact_Person_Primary:
                Contact_Person: Jill Petersen
                Contact_Organization: NOAA, Office of Response and Restoration
            Contact_Position: GIS Manager
            Contact_Address:
                Address_Type: Physical Address
                Address: 7600 Sand Point Way N.E.
                City: Seattle
                State_or_Province: Washington
                Postal_Code: 98115-6349
            Contact_Voice_Telephone: (206) 526-6944
            Contact_Facsimile_Telephone: (206) 526-6329
            Contact_Electronic_Mail_Address: Jill.Petersen@noaa.gov
    Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
    Metadata_Standard_Version: FGDC-STD-001-1998

Generated by mp version 2.8.21 on Mon Jul 24 13:05:01 2006

Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Puget Sound and Strait of Juan de Fuca, Washington: 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.
            Publication_Date: 200607
            Title:
                Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Puget Sound and Strait of Juan de Fuca, Washington: INDEX (Index Polygons)
            Edition: First
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Puget Sound and Strait of Juan de Fuca, Washington
            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:
                Funding was provided by Navy Region Northwest. This data set was prepared by Concurrent Technologies Corporation, Bremerton, Washington, and Sound GIS, Seattle, Washington with support from 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.

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 Puget Sound and Strait of Juan de Fuca, Washington. This data set comprises a portion of the ESI data for Puget Sound and Strait of Juan de Fuca. ESI data characterize the marine and coastal environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources.

    Purpose:

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

Time_Period_of_Content:

    Time_Period_Information:

        Single_Date/Time:

            Calendar_Date: 2005

    Currentness_Reference:

The INDEX data were compiled during 2005-2006. The currentness date for the data is 2005 and is documented in the Lineage section.

Status:

    Progress: Complete

    Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

    Bounding_Coordinates:

        West_Bounding_Coordinate: -124.75100

        East_Bounding_Coordinate: -122.12600

        North_Bounding_Coordinate: 49.00000

        South_Bounding_Coordinate: 47.00000

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: Puget Sound and Strait of Juan de Fuca, Washington

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 Puget Sound and Strait of Juan de Fuca, Washington ESI data.

Browse_Graphic_File_Type: JPEG

Data_Set_Credit:

This project was funded by Navy Region Northwest and was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 9.1) and SQL SERVER(r) (version 2000). The hardware configuration is PC's with Windows Operating System (2000/XP/2003).

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

Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report:

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

Logical_Consistency_Report:

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

Completeness_Report:

These data represent the boundaries of all hardcopy cartographic products produced as part of the ESI for Puget Sound and Strait of Juan de Fuca, Washington, as well as the digital data

extents.

Positional_Accuracy:

    Horizontal_Positional_Accuracy:

        Horizontal_Positional_Accuracy_Report:

            The polygons in this data layer were generated in ArcInfo from the coordinates of the U.S. Geological Survey (USGS) 1:24,000 topographic map corners. Some small amount of positional error may be present along the arcs forming the boundaries of these polygons, particularly away from the polygon corners. Some boundaries were developed from pre-existing digital and hardcopy sources and reflect the positional accuracy of these original data. See the Lineage and Process_Description sections for more information on the original source data and how these data were integrated or manipulated to create the final data set.

Lineage:

    Source_Information:

        Source_Citation:

            Citation_Information:

                Originator: RESEARCH PLANNING, INC. (RPI)

                Publication_Date: 2005

                Title: RPI INDEX

                Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA

                Other_Citation_Details: UNPUBLISHED

        Source_Scale_Denominator: 24,000

        Type_of_Source_Media: GENERATED BY RPI

        Source_Time_Period_of_Content:

            Time_Period_Information:

                Single_Date/Time:

                    Calendar_Date: 2005

            Source_Currentness_Reference: DATE OF PUBLICATION

        Source_Citation_Abbreviation: NONE

        Source_Contribution: INDEX INFORMATION

    Source_Information:

        Source_Citation:

            Citation_Information:

                Originator: U.S. GEOLOGICAL SURVEY (USGS)

                Publication_Date: VARIES

                Title: USGS DIGITAL RASTER GRAPHICS

                Geospatial_Data_Presentation_Form: RASTER DIGITAL DATA

                Other_Citation_Details: USGS, RESTON, VA.

        Source_Scale_Denominator: 24,000

        Type_of_Source_Media: CD-ROM

        Source_Time_Period_of_Content:

            Time_Period_Information:

                Single_Date/Time:

                    Calendar_Date: VARIES

            Source_Currentness_Reference: DATE OF SURVEY

        Source_Citation_Abbreviation: NONE

        Source_Contribution: INDEX INFORMATION

    Process_Step:

        Process_Description:

            Primarily, 1:24,000 U.S. Geological Survey (USGS) topographic maps were used to provide boundaries for cartographic products. In some cases, the polygons represent

USGS topographic maps that were re-tiled, moved, or extended to provide better cartographic coverage of the study area.

Process_Date: 200605

Process_Contact:

    Contact_Information:

        Contact_Organization_Primary:

            Contact_Organization: NOAA, Office of Response and Restoration

            Contact_Person: Jill Petersen

        Contact_Address:

            Address_Type: Physical address

            Address: 7600 Sand Point Way N.E.

            City: Seattle

            State_or_Province: Washington

            Postal_Code: 98115-6349

        Contact_Voice_Telephone: (206) 526-6944

        Contact_Facsimile_Telephone: (206) 526-6329

        Contact_Electronic_Mail_Address: Jill.Petersen@noaa.gov

---

Spatial_Data_Organization_Information:

    Direct_Spatial_Reference_Method: Vector

    Point_and_Vector_Object_Information:

        SDTS_Terms_Description:

            SDTS_Point_and_Vector_Object_Type: GT-polygon composed of chains

            Point_and_Vector_Object_Count: 112

        SDTS_Terms_Description:

            SDTS_Point_and_Vector_Object_Type: Area point

            Point_and_Vector_Object_Count: 113

        SDTS_Terms_Description:

            SDTS_Point_and_Vector_Object_Type: Complete chain

            Point_and_Vector_Object_Count: 299

        SDTS_Terms_Description:

            SDTS_Point_and_Vector_Object_Type: Link

            Point_and_Vector_Object_Count: 299

        SDTS_Terms_Description:

            SDTS_Point_and_Vector_Object_Type: Node, planar graph

            Point_and_Vector_Object_Count: 188

Spatial_Reference_Information:

    Horizontal_Coordinate_System_Definition:

        Geographic:

            Latitude_Resolution: 0.000001

            Longitude_Resolution: 0.000001

            Geographic_Coordinate_Units: Decimal degrees

        Geodetic_Model:

            Horizontal_Datum_Name: North American Datum of 1983

            Ellipsoid_Name: Geodetic Reference System 80

            Semi-major_Axis: 6378137.000000

            Denominator_of_Flattening_Ratio: 298.257222

Entity_and_Attribute_Information:
> *Detailed_Description:*
>> *Entity_Type:*
>>> *Entity_Type_Label:* INDEX.PAT
>>> *Entity_Type_Definition:*
>>>> The INDEX.PAT table contains attribute information for the vector polygons representing the boundaries of the maps and digital data used in the creation of the ESI.
>>> *Entity_Type_Definition_Source:* Research Planning, Inc.
>> *Attribute:*
>>> *Attribute_Label:* TILE-NAME
>>> *Attribute_Definition:* 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:* 111
>> *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:*
>>>> 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:*
>>>> *Unrepresentable_Domain:* Acceptable values change from atlas to atlas.
>> *Attribute:*
>>> *Attribute_Label:* MAPANGLE
>>> *Attribute_Definition:*
>>>> The value to rotate the final map product so that it is situated straight up and down.
>>> *Attribute_Definition_Source:* Research Planning, Inc.
>>> *Attribute_Domain_Values:*
>>>> *Range_Domain:*
>>>>> *Range_Domain_Minimum:* 0.0000
>>>>> *Range_Domain_Maximum:* 2.8710
>>>>> *Attribute_Units_of_Measure:* Degree
>> *Attribute:*
>>> *Attribute_Label:* PAGESIZE
>>> *Attribute_Definition:*
>>>> The value of the width and height of the map in the final map product.
>>> *Attribute_Definition_Source:* Research Planning, Inc.
>>> *Attribute_Domain_Values:*
>>>> *Enumerated_Domain:*
>>>>> *Enumerated_Domain_Value:* 11,17
>>>>> *Enumerated_Domain_Value_Definition:* Page size= 11" by 17"

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Distribution_Information:
    Distributor:
        Contact_Information:
            Contact_Person_Primary:
                Contact_Person: John Kaperick
                Contact_Organization: NOAA, Office of Response and Restoration
            Contact_Address:
                Address_Type: Physical Address
                Address: 7600 Sand Point Way N.E.
                City: Seattle
                State_or_Province: Washington
                Postal_Code: 98115-6349
            Contact_Voice_Telephone: (206) 526-6400
            Contact_Facsimile_Telephone: (206) 526-6329
    Resource_Description:
        ESI Atlas for Puget Sound and Strait of Juan de Fuca, Washington
    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 a Geodatabase; ARC export, MOSS, and Shape files; and MARPLOT map folders. An
        ArcMap .mxd file, an ArcView 3.x ESI project, and an 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: 200607
    Metadata_Review_Date: 200607
    Metadata_Contact:
        Contact_Information:
            Contact_Person_Primary:
                Contact_Person: Jill Petersen
                Contact_Organization: NOAA, Office of Response and Restoration
            Contact_Position: GIS Manager
            Contact_Address:
                Address_Type: Physical Address
                Address: 7600 Sand Point Way N.E.
                City: Seattle
                State_or_Province: Washington

Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: Jill.Petersen@noaa.gov
Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998

Generated by mp version 2.8.21 on Mon Jul 24 13:40:49 2006

Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Puget Sound and Strait of Juan de Fuca, Washington: 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.
            Publication_Date: 200607
            Title:
                Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Puget Sound and Strait of Juan de Fuca, Washington: MGT (Management Area Polygons)
            Edition: First
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Puget Sound and Strait of Juan de Fuca, Washington
            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:
                Funding was provided by Navy Region Northwest. This data set was prepared by Concurrent Technologies Corporation, Bremerton, Washington, and Sound GIS, Seattle, Washington with support from 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.

Description:

Abstract:

This data set contains polygons that represent the following sensitive human-use
management areas in Puget Sound and the Strait of Juan de Fuca, Washington: aquaculture
sites, commercial fishing areas, Indian reservations, marine sanctuaries, Nature
Conservancy areas, national parks, recreational fishing areas, state parks, subsistence
areas, wildlife refuges, and other 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
Puget Sound and Strait of Juan de Fuca, Washington. 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 Puget Sound and Strait of Juan de Fuca 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: 1989

Ending_Date: 2006

Currentness_Reference:

The data were compiled during 2005-2006. The currentness dates for the data range from
1989 to 2006 and are documented in the Lineage section.

Status:

Progress: Complete

Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -124.75100

East_Bounding_Coordinate: -122.12600

North_Bounding_Coordinate: 49.00000

South_Bounding_Coordinate: 47.00000

Keywords:

Theme:

Theme_Keyword_Thesaurus: None

Theme_Keyword: ESI

Theme_Keyword: Sensitivity maps

Theme_Keyword: Coastal resources

Theme_Keyword: Oil spill planning

Theme_Keyword: Coastal Zone Management

Theme_Keyword: Wildlife

Theme_Keyword: Management areas

Theme_Keyword: Human use resources

Place:

Place_Keyword_Thesaurus: None

Place_Keyword: Puget Sound and Strait of Juan de Fuca, Washington

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 Puget Sound and Strait of Juan de Fuca, Washington ESI data.

Browse_Graphic_File_Type: JPEG

Data_Set_Credit:

This project was funded by Navy Region Northwest and was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 9.1) and SQL SERVER(r) (version 2000). The hardware configuration is PC's with Windows Operating System (2000/XP/2003).

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

Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report:

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

data. For a more detailed evaluation of source data attribute accuracy, contact the sources listed in the Lineage section.

Logical_Consistency_Report:

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

Completeness_Report:

These data represent a synthesis of digital boundaries for management areas. See also the SOCECON (Socioeconomic Resource Points and Lines) data layer, part of the larger Puget Sound and Strait of Juan de Fuca, Washington ESI database, for additional human-use information. These data do not necessarily represent all management areas in Puget Sound and Strait of Juan de Fuca.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

Spatial components for the human-use data layers can come from expert interviews, hardcopy, or digital sources. Most of the spatial components of the human-use data layers are developed from pre-existing digital or hardcopy sources and reflect the positional accuracy of these original data. Some of the spatial components of the human-use data layers are compiled on hardcopy base maps with a scale of 1:24,000. See the Lineage and Process_Description sections for more information on the original data source and how these data were integrated or manipulated to create the final data set.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: JAMESTOWN S'KLALLAM TRIBE

Publication_Date: 2004

Title: JAMESTOWN S'KLALLAM TRIBE GIS DATA

Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA

Other_Citation_Details:

DATA CONTACT: PAM EDENS (JAMESTOWN S'KLALLAM TRIBE, PEDENS@JAMESTOWNTRIBE.ORG)

Type_of_Source_Media: CD-ROM

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 2004

Source_Currentness_Reference: GROUND CONDITION

Source_Citation_Abbreviation: NONE

Source_Contribution: MGT INFORMATION

Source_Information:

Source_Citation:

Citation_Information:

Originator: LUMMI INDIAN BUSINESS COUNCIL

        Publication_Date: 2004
        Title: GIS DATA: LUMMI NATION 2004
        Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
        Other_Citation_Details:
          DATA CONTACT: WILLY LYNCH (LUMMI INDIAN BUSINESS
          COUNCIL, 360-384-2372)
     Type_of_Source_Media: CD-ROM
     Source_Time_Period_of_Content:
      Time_Period_Information:
       Single_Date/Time:
        Calendar_Date: 2004
      Source_Currentness_Reference: GROUND CONDITION
     Source_Citation_Abbreviation: NONE
     Source_Contribution: MGT INFORMATION
   Source_Information:
     Source_Citation:
      Citation_Information:
       Originator: MAKAH TRIBE
       Publication_Date: 2004
       Title: GIS DATA: MAKAH TRIBE
       Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
       Other_Citation_Details: DATA CONTACT: DAVE HERDA (MAKAH
       TRIBE, 360-645-3051)
     Source_Scale_Denominator: VARIES
     Type_of_Source_Media: EMAIL
     Source_Time_Period_of_Content:
      Time_Period_Information:
       Range_of_Dates/Times:
        Beginning_Date: 1994
        Ending_Date: 2000
      Source_Currentness_Reference: GROUND CONDITION
     Source_Citation_Abbreviation: NONE
     Source_Contribution: MGT INFORMATION
   Source_Information:
     Source_Citation:
      Citation_Information:
       Originator: NATIONAL OCEANIC AND ATMOSPHERIC
       ADMINISTRATION (NOAA)
       Publication_Date: 2005
       Title: MARINE MANAGED AREAS OF THE UNITED STATES
       Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
       Other_Citation_Details:
         DATA CONTACT: JOEL G. MURRAY (NATIONAL OCEANIC
         AND ATMOSPHERIC ADMINISTRATION, 301-713-3000 EXT.
         123) <http://www3.mpa.gov/exploreinv/download.aspx>
     Type_of_Source_Media: DOWNLOADABLE DATA
     Source_Time_Period_of_Content:
      Time_Period_Information:
       Range_of_Dates/Times:
        Beginning_Date: 1997
        Ending_Date: 2006

Source_Currentness_Reference: DATE OF PUBLICATION

Source_Citation_Abbreviation: NONE

Source_Contribution: MGT INFORMATION

Source_Information:

Source_Citation:

Citation_Information:

Originator: OLYMPIC COAST NATIONAL MARINE SANCTUARY

Publication_Date: 1997

Title: OLYMPIC COAST NATURAL MARINE SANCTUARY

Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA

Other_Citation_Details:

DATA CONTACT: STEVEN S. INTELMAN (OLYMPIC COAST NATIONAL MARINE SANCTUARY, 360-457-6622 EXT. 22)

Type_of_Source_Media: EMAIL

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1997

Source_Currentness_Reference: DATE OF PUBLICATION

Source_Citation_Abbreviation: NONE

Source_Contribution: MGT INFORMATION

Source_Information:

Source_Citation:

Citation_Information:

Originator: OLYMPIC NATIONAL FOREST

Publication_Date: 1998

Title: ADMINISTRATIVE REGIONS

Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA

Other_Citation_Details:

DATA CONTACT: (OLYMPIC NATIONAL FOREST, 360-956-2400) <http://www.fs.fed.us/r6/data-library/gis/olympic/>

Source_Scale_Denominator: 24000

Type_of_Source_Media: DOWNLOADABLE DATA

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1989

Source_Currentness_Reference: GROUND CONDITION

Source_Citation_Abbreviation: NONE

Source_Contribution: MGT INFORMATION

Source_Information:

Source_Citation:

Citation_Information:

Originator: THE NATURE CONSERVANCY

Publication_Date: 2004

Title: WAFO FEE OWNERSHIP AND CONSERVATION EASEMENTS

Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA

Other_Citation_Details:

DATA CONTACT: JESSE LANGDON (THE NATURE CONSERVANCY, WASHINGTON CHAPTER, 206-343-4345)

Type_of_Source_Media: DOWNLOADABLE DATA

Source_Time_Period_of_Content:
    Time_Period_Information:
        Range_of_Dates/Times:
            Beginning_Date: 2003
            Ending_Date: 2004
    Source_Currentness_Reference: DATE OF PUBLICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: MGT INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: WASHINGTON DEPARTMENT OF ECOLOGY
            Publication_Date: 1998
            Title: WASHINGTON STATE TRIBAL LANDS
            Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
            Other_Citation_Details:
                DATA CONTACT: RICH KIM (WASHINGTON DEPARTMENT OF ECOLOGY, 360-407-6121)
                <http://www.ecy.wa.gov/services/gis/data/data.htm>
    Source_Scale_Denominator: 100000
    Type_of_Source_Media: DOWNLOADABLE DATA
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 1998
        Source_Currentness_Reference: GROUND CONDITION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: MGT INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: WASHINGTON DEPARTMENT OF FISH AND WILDLIFE
            Publication_Date: 2005
            Title:
                MARINE FINFISH, SHELLFISH AND BASELINE GIS COVERAGES, PUBLISHED MAP FILES AND THE WEB VERSION OF TECHNICAL REPORT 79
            Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
            Other_Citation_Details:
                DATA CONTACT: DALE GOMBERT (WASHINGTON DEPARTMENT OF FISH AND WILDLIFE, 425-379-2317)
    Source_Scale_Denominator: VARIES
    Type_of_Source_Media: CD-ROM
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Range_of_Dates/Times:
                Beginning_Date: 1992
                Ending_Date: 2005
         Source_Currentness_Reference: GROUND CONDITION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: MGT INFORMATION

Source_Information:

    Source_Citation:

        Citation_Information:

            Originator: WASHINGTON DEPARTMENT OF NATURAL RESOURCES

            Publication_Date: 2005

            Title:

                WASHINGTON STATE NON-DEPARTMENT OF NATURAL RESOURCES MAJOR PUBLIC LANDS

            Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA

            Other_Citation_Details:

                DATA CONTACT: ELIZABETH EBERLE (WASHINGTON DEPARTMENT OF NATURAL RESOURCES, NDMPL MAINTENANCE CONTACT, 360-902-1222)

                <http://www3.wadnr.gov/dnrapp6/dataweb/dmmatrix.html>

    Source_Scale_Denominator: VARIES

    Type_of_Source_Media: DOWNLOADABLE DATA

    Source_Time_Period_of_Content:

        Time_Period_Information:

            Range_of_Dates/Times:

                Beginning_Date: 2000

                Ending_Date: 2003

            Source_Currentness_Reference: DATE OF PUBLICATION

    Source_Citation_Abbreviation: NONE

    Source_Contribution: MGT INFORMATION

Source_Information:

    Source_Citation:

        Citation_Information:

            Originator: WASHINGTON STATE DEPARTMENT OF HEALTH

            Publication_Date: 2005

            Title: COMMERCIAL SHELLFISH GROWING AREAS

            Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA

            Other_Citation_Details:

                DATA CONTACT: CRAIG ERICKSON (WASHINGTON STATE DEPARTMENT OF HEALTH, 360-236-4271)

                <http://ww4.doh.wa.gov/gis/gisdata.htm>

    Source_Scale_Denominator: 24000

    Type_of_Source_Media: DOWNLOADABLE DATA

    Source_Time_Period_of_Content:

        Time_Period_Information:

            Single_Date/Time:

                Calendar_Date: 2005

            Source_Currentness_Reference: DATE OF PUBLICATION

    Source_Citation_Abbreviation: NONE

    Source_Contribution: MGT INFORMATION

Source_Information:

    Source_Citation:

        Citation_Information:

            Originator: WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

            Publication_Date: 1999

            Title: NATIONAL PARKS OF WASHINGTON STATE

Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
Other_Citation_Details:
>> DATA CONTACT: RON CIHON (WASHINGTON STATE DEPARTMENT OF TRANSPORTATION, 360-709-5510) <http://www.wsdot.wa.gov/mapsdata/geodatacatalog/default.htm>

Source_Scale_Denominator: 24000
Type_of_Source_Media: DOWNLOADABLE DATA
Source_Time_Period_of_Content:
> *Time_Period_Information:*
>> *Single_Date/Time:*
>>> *Calendar_Date:* 1996
> *Source_Currentness_Reference:* GROUND CONDITION
Source_Citation_Abbreviation: NONE
Source_Contribution: MGT INFORMATION
Source_Information:
> *Source_Citation:*
>> *Citation_Information:*
>>> *Originator:* WASHINGTON STATE PARKS AND RECREATION COMMISSION
>>> *Publication_Date:* 2005
>>> *Title:* PARK BOUNDARIES
>>> *Geospatial_Data_Presentation_Form:* VECTOR DIGITAL DATA
>>> *Other_Citation_Details:*
>>>> DATA CONTACT: KATHRYN SCOTT (WASHINGTON STATE PARKS AND RECREATION COMMISSION, 360-902-8691)
> *Type_of_Source_Media:* EMAIL
> *Source_Time_Period_of_Content:*
>> *Time_Period_Information:*
>>> *Single_Date/Time:*
>>>> *Calendar_Date:* 2005
>> *Source_Currentness_Reference:* RECORDING DATE
> *Source_Citation_Abbreviation:* NONE
> *Source_Contribution:* MGT INFORMATION
Process_Step:
> *Process_Description:*
>> Aquaculture: Digital polygons representing aquaculture facilities were provided by Washington State Department of Health (WDOH) and Washington Department of Fish and Wildlife (WDFW). WDOH's growing areas were included where the class was defined as "approved" or "conditional." Cultured mussels from WDFW's Marine Resource Database were also included as aquaculture sites. In order to depict the aquaculture sites as water-bound polygons, they were clipped with the water portion of the HYDRO layer. Any resulting land-based aquaculture sliver polygons were removed from the MGT layer. Where the polygons appeared to follow the shoreline but fell short, they were extended to meet the shoreline.

>> Commercial and Recreational Fishing: Digital polygons representing commercial fishing and recreational fishing areas were provided by Washington Department of Fish and Wildlife's (WDFW) Marine Resource Database. The following layers were included as commercial and recreational fishing areas: demersal, reef, and pelagic (where demersal, reef and pelagic field = 1, respectively). The salmoncm features were included as commercial fishing areas where the "intense" and "everyone" field

= 1. The salmonsp features were included as recreational fishing areas where the "sportsalmo" field = 1. In order to depict the commercial fishing and recreational fishing sites as water-bound polygons, they were clipped with the water portion of the HYDRO layer. Any resulting land-based sliver polygons were removed from the MGT layer. Where the polygons appeared the follow the shoreline but fell short, they were extended to meet the shoreline.

Indian Reservations: Digital polygons representing Indian reservation boundaries were provided by the following groups: Jamestown S'klallam Tribe, Lummi Indian Business Council, Makah Tribe, Washington State Department of Ecology (WDOE), and Washington Department of Natural Resources (WDNR). Only those reservation boundaries from WDOE and WDNR that were not already included from the tribal groups were included.

Management Areas: Digital polygons representing marine managed areas were provided by NOAA's Marine Protected Area (MPA) Center. Additional marine preservation areas were provided by Washington Department of Fish and Wildlife's (WDFW) Marine Resource Database.

Marine Sanctuaries: Digital polygons representing National Estuarine Research Reserve System boundaries were provided by NOAA's MPA Center. The Olympic Coast National Marine Sanctuary (OCNMS) boundary was provided by OCNMS.

Nature Conservancy Areas: Digital polygons representing lands managed by The Nature Conservancy were provided by the Washington Chapter of The Nature Conservancy.

National Parks: The Olympic National Park boundary was provided by Olympic National Forest as a digital polygon feature. The boundaries of National Historic Parks and Reserves in the study area were provided by Washington Department of Transportation.

State Parks: Digital polygons representing state parks were provided by Washington State Parks and Recreation Commission.

Subsistence: Digital polygons representing subsistence areas were gathered from the salmoncm layer provided by WDFW. Only those polygons where the field "treaty" = 1 were included.

Wildlife Refuges: Digital polygons representing wildlife refuge boundaries were provided by the Makah Tribe and NOAA's MPA Center.

The above digital and/or hardcopy sources were compiled by the project biologist to create the MGT data layer. Depending on the type of source data, three general approaches are used for compiling the data layer: (1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles and digitized; (2) hardcopy maps are digitized at their source scale; (3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer.

Process_Date: 200603

Process_Contact:
    Contact_Information:
        Contact_Organization_Primary:
            Contact_Organization: Concurrent Technologies Corporation
            Contact_Person: Joy Haydt
        Contact_Address:
            Address_Type: Physical address
            Address: 5780 W. Werner Rd.
            City: Bremerton
            State_or_Province: Washington
            Postal_Code: 98312
        Contact_Voice_Telephone: (360) 782-5517
        Contact_Facsimile_Telephone: (360) 782-5594
        Contact_Electronic_Mail_Address: haydtj@ctc.com
Process_Step:
    Process_Description:
        The compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. If necessary, edits to the MGT data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.
    Process_Date: 200605
    Process_Contact:
        Contact_Information:
            Contact_Organization_Primary:
                Contact_Organization: NOAA
                Contact_Person: Jill Petersen
            Contact_Address:
                Address_Type: Physical address
                Address: 7600 Sand Point Way N.E.
                City: Seattle
                State_or_Province: Washington
                Postal_Code: 98115-6349
            Contact_Voice_Telephone: (206) 526-6944
            Contact_Facsimile_Telephone: (206) 526-6329
            Contact_Electronic_Mail_Address: Jill.Petersen@noaa.gov

---

Spatial_Data_Organization_Information:
    Direct_Spatial_Reference_Method: Vector
    Point_and_Vector_Object_Information:
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: GT-polygon composed of chains
            Point_and_Vector_Object_Count: 3292
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Area point
            Point_and_Vector_Object_Count: 3293
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Complete chain
            Point_and_Vector_Object_Count: 7501
        SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 316046
SDTS_Terms_Description:
    SDTS_Point_and_Vector_Object_Type: Node, planar graph
    Point_and_Vector_Object_Count: 4684

Spatial_Reference_Information:
    Horizontal_Coordinate_System_Definition:
        Geographic:
            Latitude_Resolution: 0.000001
            Longitude_Resolution: 0.000001
            Geographic_Coordinate_Units: Decimal degrees
        Geodetic_Model:
            Horizontal_Datum_Name: North American Datum of 1983
            Ellipsoid_Name: Geodetic Reference System 80
            Semi-major_Axis: 6378137.000000
            Denominator_of_Flattening_Ratio: 298.257222

Entity_and_Attribute_Information:
    Overview_Description:
        Entity_and_Attribute_Overview:
            In addition to the geographic data layers, two relational attribute or data tables, SOC_DAT
            and SOURCES, are used to store the complex socioeconomic data in the ESI data
            structure. The geographic data layer containing socioeconomic data resource information
            (in this case, MGT) is linked to the Socioeconomic Resources table (SOC_DAT) using the
            unique ID and the lookup table SOC_LUT, or it can be linked directly using HUNUM.
            HUNUM is a unique reference number concatenated with the atlas number (for Puget
            Sound and Strait of Juan de Fuca, the number is 79). ID is a unique combination of the
            atlas number (79), 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 aquaculture sites, commercial fishing areas, Indian reservations, marine
                sanctuaries, Nature Conservancy areas, national parks, recreational fishing areas,
                state parks, subsistence areas, and wildlife refuges. Note that all attribute
                information is stored in a series of relational files, described below. See the
                Browse_Graphic section for a link to the entity-relationship diagram, which
                describes the relationships between attribute tables in the ESI data structure.
            Entity_Type_Definition_Source: Research Planning, Inc.
        Attribute:
            Attribute_Label: TYPE
            Attribute_Definition:
                The human-use features depicted on the maps are those that could be impacted by an

oil spill or could provide access for response operations.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: AQ
  Enumerated_Domain_Value_Definition: Aquaculture Site
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: CF
  Enumerated_Domain_Value_Definition: Commercial Fishing Area
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: IR
  Enumerated_Domain_Value_Definition: Indian Reservation
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: MA
  Enumerated_Domain_Value_Definition: Management Area
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: MS
  Enumerated_Domain_Value_Definition: Marine Sanctuary
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: MR
  Enumerated_Domain_Value_Definition:
   Multiple Records - Signifies that multiple types overlap in the polygon
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: NC
  Enumerated_Domain_Value_Definition: Nature Conservancy Area
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: NP
  Enumerated_Domain_Value_Definition: National Park
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: P
  Enumerated_Domain_Value_Definition: Regional or State Park
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: RF

        Enumerated_Domain_Value_Definition: Recreational Fishing Area

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

      Enumerated_Domain:

        Enumerated_Domain_Value: S

        Enumerated_Domain_Value_Definition: Subsistence Area

        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 (79), 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: 0791100002

        Range_Domain_Maximum: 0791103391

Attribute:

    Attribute_Label: HUNUM

    Attribute_Definition:

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

    Attribute_Definition_Source: NOAA

    Attribute_Domain_Values:

      Range_Domain:

        Range_Domain_Minimum: 079000100

        Range_Domain_Maximum: 079003970

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: 079000100
    Range_Domain_Maximum: 079003970

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 (79), 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: 0791000001
      Range_Domain_Maximum: 0791103391

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: 079000100
        Range_Domain_Maximum: 079003970
  Attribute:
    Attribute_Label: TYPE
    Attribute_Definition: Identifies the feature type
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
      Enumerated_Domain:
        Enumerated_Domain_Value: AIRPORT
        Enumerated_Domain_Value_Definition: Airport
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
      Enumerated_Domain:
        Enumerated_Domain_Value: ACCESS
        Enumerated_Domain_Value_Definition: Access Location
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
      Enumerated_Domain:
        Enumerated_Domain_Value: AQUACULTURE

Enumerated_Domain_Value_Definition: Aquaculture Site
                        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
            Enumerated_Domain:
                        Enumerated_Domain_Value: ARTIFICIAL REEF
                        Enumerated_Domain_Value_Definition: Artificial Reef
                        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
            Enumerated_Domain:
                        Enumerated_Domain_Value: ARCHAEOLOGICAL SITE
                        Enumerated_Domain_Value_Definition: Archaeological Site
                        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
            Enumerated_Domain:
                        Enumerated_Domain_Value: BEACH
                        Enumerated_Domain_Value_Definition: Beach
                        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
            Enumerated_Domain:
                        Enumerated_Domain_Value: BOAT RAMP
                        Enumerated_Domain_Value_Definition: Boat Ramp
                        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
            Enumerated_Domain:
                        Enumerated_Domain_Value: COMMERCIAL FISHING
                        Enumerated_Domain_Value_Definition: Commercial Fishing
                        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
            Enumerated_Domain:
                        Enumerated_Domain_Value: COAST GUARD
                        Enumerated_Domain_Value_Definition: U.S. Coast Guard Station
                        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
            Enumerated_Domain:
                        Enumerated_Domain_Value: DIVING SITE
                        Enumerated_Domain_Value_Definition: Diving Site
                        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
            Enumerated_Domain:
                        Enumerated_Domain_Value: EQUIPMENT
                        Enumerated_Domain_Value_Definition: Equipment Storage Site
                        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
            Enumerated_Domain:
                        Enumerated_Domain_Value: FERRY
                        Enumerated_Domain_Value_Definition: Ferry Terminal
                        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: HAZARDOUS WASTE SITE
      Enumerated_Domain_Value_Definition: Hazardous Waste Site
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
   Enumerated_Domain:
      Enumerated_Domain_Value: INDIAN RESERVATION
      Enumerated_Domain_Value_Definition: Indian Reservation
      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: LOG STORAGE
      Enumerated_Domain_Value_Definition: Log Storage
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
   Enumerated_Domain:
      Enumerated_Domain_Value: MANAGEMENT AREA
      Enumerated_Domain_Value_Definition: Management Area
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
   Enumerated_Domain:
      Enumerated_Domain_Value: MARINA
      Enumerated_Domain_Value_Definition: Marina
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
   Enumerated_Domain:
      Enumerated_Domain_Value: MARINE SANCTUARY
      Enumerated_Domain_Value_Definition: Marine Sanctuary
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
   Enumerated_Domain:
      Enumerated_Domain_Value: NATIONAL PARK
      Enumerated_Domain_Value_Definition: National Park
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
   Enumerated_Domain:
      Enumerated_Domain_Value: NATURE CONSERVANCY
      Enumerated_Domain_Value_Definition: Nature Conservancy Area
      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: REGIONAL OR STATE PARK
        Enumerated_Domain_Value_Definition: Regional or State Park
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: SUBSISTENCE
        Enumerated_Domain_Value_Definition: Subsistence Area
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: WILDLIFE REFUGE
        Enumerated_Domain_Value_Definition: Wildlife Refuge
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
    Attribute_Label: NAME
    Attribute_Definition: The feature name.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Unrepresentable_Domain: Acceptable values change from atlas to atlas.
Attribute:
    Attribute_Label: CONTACT
    Attribute_Definition: Contact person or entity.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Unrepresentable_Domain: Acceptable values change from atlas to atlas.
Attribute:
    Attribute_Label: PHONE
    Attribute_Definition: Contact telephone number.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Unrepresentable_Domain: Acceptable values change from atlas to atlas
Attribute:
    Attribute_Label: G_SOURCE
    Attribute_Definition:
        Geographic source identifier that links records in the SOC_DAT data table to
        records in the SOURCES data table.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Range_Domain:
            Range_Domain_Minimum: 1
            Range_Domain_Maximum: N
Attribute:
    Attribute_Label: A_SOURCE
    Attribute_Definition:
        Attribute source identifier that links records in the SOC_DAT data table to records
        in the SOURCES data table.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Range_Domain:

Range_Domain_Minimum: 1

Range_Domain_Maximum: N

Detailed_Description:

Entity_Type:

Entity_Type_Label: SOURCES

Entity_Type_Definition:

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

Entity_Type_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: SOURCE_ID

Attribute_Definition:

Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; and SOURCE_ID in the ESI, HYDRO, and SOCECON data layers.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 1

Range_Domain_Maximum: N

Attribute:

Attribute_Label: ORIGINATOR

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: DATE_PUB

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: YYYYMM

Enumerated_Domain_Value_Definition: YYYY for year and optionally MM for month

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: TITLE

Attribute_Definition: Title of source material or data.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: DATA_FORMAT

Attribute_Definition: The format of the source material.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: PUBLICATION

Attribute_Definition: Additional citation information.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: SCALE

Attribute_Definition: Description of the source scale.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: TIME_PERIOD

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Distribution_Information:

Distributor:

Contact_Information:

Contact_Person_Primary:

Contact_Person: John Kaperick

Contact_Organization: NOAA, Office of Response and Restoration

Contact_Address:

Address_Type: Physical Address

Address: 7600 Sand Point Way N.E.

City: Seattle

State_or_Province: Washington

Postal_Code: 98115-6349

Contact_Voice_Telephone: (206) 526-6400

Contact_Facsimile_Telephone: (206) 526-6329

Resource_Description:

ESI Atlas for Puget Sound and Strait of Juan de Fuca, Washington

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 a Geodatabase; ARC export, MOSS, and Shape files; and MARPLOT map folders. An ArcMap .mxd file, an ArcView 3.x ESI project, and an 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: 200607
    Metadata_Review_Date: 200607
    Metadata_Contact:
        Contact_Information:
            Contact_Person_Primary:
                Contact_Person: Jill Petersen
                Contact_Organization: NOAA, Office of Response and Restoration
            Contact_Position: GIS Manager
            Contact_Address:
                Address_Type: Physical Address
                Address: 7600 Sand Point Way N.E.
                City: Seattle
                State_or_Province: Washington
                Postal_Code: 98115-6349
            Contact_Voice_Telephone: (206) 526-6944
            Contact_Facsimile_Telephone: (206) 526-6329
            Contact_Electronic_Mail_Address: Jill.Petersen@noaa.gov
    Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
    Metadata_Standard_Version: FGDC-STD-001-1998

Generated by mp version 2.8.21 on Mon Jul 24 22:44:33 2006

Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Puget Sound and Strait of Juan de Fuca, Washington: 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.
            Publication_Date: 200607
            Title:
                Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Puget Sound and Strait of Juan de Fuca, Washington: SOCECON (Socioeconomic Resource Points and Lines)
            Edition: First
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Puget Sound and Strait of Juan de Fuca, Washington
            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:
                Funding was provided by Navy Region Northwest. This data set was prepared by Concurrent Technologies Corporation, Bremerton, Washington, and Sound GIS, Seattle, Washington with support from 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.

Description:

Abstract:

This data set contains points that represent the following sensitive human-use socioeconomic sites in Puget Sound and the Strait of Juan de Fuca, Washington: access locations, airports, aquaculture sites, archaeological sites, artificial reefs, beaches, boat ramps, U.S. Coast Guard stations, dive sites, spill response equipment storage sites, ferry terminals, hatcheries, hazardous waste sites, locks and dams, marinas, and parks. Also included are lines that represent the international boundary, bridges, and ferry routes. 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 Puget Sound and Strait of Juan de Fuca, Washington. 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 Puget Sound and the Strait of Juan de Fuca 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: 1996

Ending_Date: 2006

Currentness_Reference:

The SOCECON data were compiled during 2005-2006. The currentness dates for the data range from 1996 to 2006 and are documented in the Lineage section.

Status:

Progress: Complete

Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -124.75100

East_Bounding_Coordinate: -122.12600

North_Bounding_Coordinate: 49.00000

South_Bounding_Coordinate: 47.00000

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:* Puget Sound and Strait of Juan de Fuca, Washington

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 Puget Sound and Strait of Juan de Fuca, Washington ESI data.
>
> *Browse_Graphic_File_Type:* JPEG

Data_Set_Credit:

> This project was funded by Navy Region Northwest and was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.

Native_Data_Set_Environment:

> The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 9.1) and SQL SERVER(r) (version 2000). The hardware configuration is PC's with Windows Operating System (2000/XP/2003).
>
> The Spatial_Data_Organization_Information section refers only to the source files in the ARC export format. The following files are included in the data set: birds.e00, esi.e00, fish.e00, fishl.e00, habitatl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mampt.e00, mgt.e00, nests.e00, socecon.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

Data_Quality_Information:

> *Attribute_Accuracy:*
>
> > *Attribute_Accuracy_Report:*
> >
> > > A multi-stage error checking process is used to verify both attribute accuracy and logical consistency throughout data production. The process includes a standardized data entry methodology, hardcopy data review by in-house and external resource experts, a final Quality Assurance/Quality Control (QA/QC) process, and multiple automated logical consistency checks. Quantitative data (such as densities, counts, abundances, or

concentrations) provided by resource experts for inclusion in the data set may vary widely in attribute accuracy, depending upon the methodology used to collect and compile such data. For a more detailed evaluation of source data attribute accuracy, contact the sources listed in the Lineage section.

Logical_Consistency_Report:

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

Completeness_Report:

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

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

Spatial components for the human-use data layers can come from expert interviews, hardcopy, or digital sources. Most of the spatial components of the human-use data layers are developed from pre-existing digital or hardcopy sources and reflect the positional accuracy of these original data. Some of the spatial components of the human-use data layers are compiled on hardcopy base maps with a scale of 1:24,000. See the Lineage and Process_Description sections for more information on the original data source and how these data were integrated or manipulated to create the final data set.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator:

DEAN, TOM AND RAYNA HOLTZ, BIANCA PERLA (VASHON ISLAND LAND TRUST)

Publication_Date: 2004

Title: ARCHAEOLOGICAL SITES

Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE

Other_Citation_Details:

UNPUBLISHED. CONTACT: TOM DEAN (VASHON ISLAND LAND TRUST, 206-463-2644)

Type_of_Source_Media: PERSONAL COMMUNICATION

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 2004

Source_Currentness_Reference: DATE OF COMMUNICATION

Source_Citation_Abbreviation: NONE

Source_Contribution: SOCECON INFORMATION

Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: DIVE SITE REVIEWS
            Publication_Date: 2005
            Title: DIVING THE NORTHWEST: DIVE SITE REVIEWS
            Geospatial_Data_Presentation_Form: WEBSITE
            Other_Citation_Details:
                DATA CONTACT: MICHAEL PARKER
                (PARKER@U.WASHINGTON.EDU)
                <http://staff.washington.edu/parker/scuba/reviews.htm>
    Type_of_Source_Media: ONLINE
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 2005
        Source_Currentness_Reference: DATE OF WEBSITE ACCESS
    Source_Citation_Abbreviation: NONE
    Source_Contribution: SOCECON INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: HAGEMAN, KEN (PARK MANAGER, FORT CASEY STATE
            PARK)
            Publication_Date: 2004
            Title: ARCHAEOLOGICAL SITES
            Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
            Other_Citation_Details:
                UNPUBLISHED. CONTACT: KEN HAGEMAN (FORT CASEY
                STATE PARK, 360-678-4519)
    Type_of_Source_Media: PERSONAL COMMUNICATION
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 2004
        Source_Currentness_Reference: DATE OF COMMUNICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: SOCECON INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: HARTT, JACK (PARK MANAGER, DECEPTION PASS
            STATE PARK)
             Publication_Date: 2004
            Title: ARCHAEOLOGICAL SITES
            Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
            Other_Citation_Details:
                UNPUBLISHED. CONTACT: JACK HARTT (DECEPTION PASS
                STATE PARK, 360-675-2417)
    Type_of_Source_Media: PERSONAL COMMUNICATION
    Source_Time_Period_of_Content:

Time_Period_Information:
    Single_Date/Time:
        Calendar_Date: 2004
    Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: SOCECON INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: HINTON, DOUG (PARK MANAGER, DOSEWALLIPS STATE PARK)
            Publication_Date: 2004
            Title: ARCHAEOLOGICAL SITES
            Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
            Other_Citation_Details:
                UNPUBLISHED. CONTACT: DOUG HINTON (DOSEWALLIPS STATE PARK, 360-796-4415)
    Type_of_Source_Media: PERSONAL COMMUNICATION
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 2004
        Source_Currentness_Reference: DATE OF COMMUNICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: SOCECON INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: JOHNSON, ROY (PARK RANGER, CAMANO ISLAND STATE PARK)
            Publication_Date: 2004
            Title: ARCHAEOLOGICAL SITES
            Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
            Other_Citation_Details:
                UNPUBLISHED. CONTACT: ROY JOHNSON (CAMANO ISLAND STATE PARK, 360-387-3031)
    Type_of_Source_Media: PERSONAL COMMUNICATION
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 2004
        Source_Currentness_Reference: DATE OF COMMUNICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: SOCECON INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator:
                KALINA, WILLIAM B. (NAVAL MAGAZINE INDIAN ISLAND, NATURAL RESOURCES MANAGER), PORT HADLOCK, WA
            Publication_Date: 2004

Title: INDIAN ISLAND ARCHAEOLOGICAL SITES

Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE

Other_Citation_Details:

UNPUBLISHED. CONTACT: BILL KALINA (NAVMAG INDIAN ISLAND, 360-396-5353

Type_of_Source_Media: PERSONAL COMMUNICATION

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 2004

Source_Currentness_Reference: DATE OF COMMUNICATION

Source_Citation_Abbreviation: NONE

Source_Contribution: SOCECON INFORMATION

Source_Information:

Source_Citation:

Citation_Information:

Originator: LUMMI INDIAN BUSINESS COUNCIL

Publication_Date: 2004

Title: GIS DATA: LUMMI NATION 2004

Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA

Other_Citation_Details:

DATA CONTACT: WILLY LYNCH (LUMMI INDIAN BUSINESS COUNCIL, 360-384-2372)

Type_of_Source_Media: CD-ROM

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 2004

Source_Currentness_Reference: GROUND CONDITION

Source_Citation_Abbreviation: NONE

Source_Contribution: SOCECON INFORMATION

Source_Information:

Source_Citation:

Citation_Information:

Originator: MCBEE, STEVE (PARK MANAGER, DASH POINT STATE PARK)

Publication_Date: 2004

Title: ARCHAEOLOGICAL SITES

Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE

Other_Citation_Details:

UNPUBLISHED. CONTACT: STEVE MCBEE (DASH POINT STATE PARK, 253-661-4955)

Type_of_Source_Media: PERSONAL COMMUNICATION

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 2004

Source_Currentness_Reference: DATE OF COMMUNICATION

Source_Citation_Abbreviation: NONE

Source_Contribution: SOCECON INFORMATION

Source_Information:

Source_Citation:
  Citation_Information:
    Originator:
      MILLER, JOHN (ENGINEERING FIELD ACTIVITY NORTHWEST [EFA NW]) POULSBO, WA
    Publication_Date: 2004
    Title: ARCHAEOLOGICAL SITES AND LOG STORAGE
    Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
    Other_Citation_Details: UNPUBLISHED. CONTACT: JOHN MILLER (EFA NW, 360-396-0065)
Type_of_Source_Media: PERSONAL COMMUNICATION
Source_Time_Period_of_Content:
  Time_Period_Information:
    Single_Date/Time:
      Calendar_Date: 2004
  Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: SOCECON INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: MORRIS, TED (PARK MANAGER, BIRCH BAY STATE PARK)
      Publication_Date: 2004
      Title: ARCHAEOLOGICAL SITES
      Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
      Other_Citation_Details:
        UNPUBLISHED. CONTACT: TED MORRIS (BIRCH BAY STATE PARK, 360-371-2800)
  Type_of_Source_Media: PERSONAL COMMUNICATION
  Source_Time_Period_of_Content:
    Time_Period_Information:
      Single_Date/Time:
        Calendar_Date: 2004
    Source_Currentness_Reference: DATE OF COMMUNICATION
  Source_Citation_Abbreviation: NONE
  Source_Contribution: SOCECON INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: PACIFIC NW SCUBA
      Publication_Date: 2005
      Title:
        PACIFIC NORTHWEST SCUBA: DIRECTIONS TO DIVE SITES AND DIVE SITE MAPS
      Geospatial_Data_Presentation_Form: WEBSITE
      Other_Citation_Details:
        DATA CONTACT: JANNA NICHOLS (JANNAN@PNWSCUBA.COM)
        <http://www.pnwscuba.com/directions.htm>
  Type_of_Source_Media: ONLINE

    Source_Time_Period_of_Content:
     Time_Period_Information:
      Single_Date/Time:
       Calendar_Date: 2005
     Source_Currentness_Reference: DATE OF WEBSITE ACCESS
    Source_Citation_Abbreviation: NONE
    Source_Contribution: SOCECON INFORMATION
   Source_Information:
    Source_Citation:
     Citation_Information:
      Originator: REGIONAL RESPONSE TEAM NORTHWEST AREA
      COMMITTEE
      Publication_Date: 2005
      Title: NW SPILL RESPONSE EQUIPMENT LIST
      Geospatial_Data_Presentation_Form: DATABASE
      Other_Citation_Details:
      <http://www.rrt10nwac.com/equipment_spreadsheet.htm>
    Type_of_Source_Media: DOWNLOADABLE DATA
    Source_Time_Period_of_Content:
     Time_Period_Information:
      Single_Date/Time:
       Calendar_Date: 2005
     Source_Currentness_Reference: DATE OF PUBLICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: SOCECON INFORMATION
   Source_Information:
    Source_Citation:
     Citation_Information:
      Originator: SCHMITT, JOE (CLALLAM COUNTY MARINE
      RESOURCES COMMITTEE [MRC])
      Publication_Date: 2004
      Title: BEACHES, ACCESS POINTS, AND BOAT RAMP
      Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
      Other_Citation_Details: UNPUBLISHED DATA
    Type_of_Source_Media: PERSONAL COMMUNICATION
    Source_Time_Period_of_Content:
     Time_Period_Information:
      Single_Date/Time:
       Calendar_Date: 2004
     Source_Currentness_Reference: DATE OF COMMUNICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: SOCECON INFORMATION
   Source_Information:
    Source_Citation:
     Citation_Information:
      Originator:
       SCHOUTEN, ARNOLD (ISLANDS' OIL SPILL ASSOCIATION
       [IOSA], SAN JUAN COUNTY) AND IAN MILLER (SURFRIDER)
      Publication_Date: 2004
      Title: LOG STORAGE, BEACHES, AND BOAT RAMP
      Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE

        Other_Citation_Details: UNPUBLISHED. CONTACT: ARNOLD
        SCHOUTEN (IOSA, 360-452-9546)
    Type_of_Source_Media: PERSONAL COMMUNICATION
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 2004
        Source_Currentness_Reference: DATE OF COMMUNICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: SOCECON INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: SHOREDIVING.COM
            Publication_Date: 2005
            Title: SHORE DIVING SITE LISTING FOR WASHINGTON, USA WEST
            Geospatial_Data_Presentation_Form: WEBSITE
            Other_Citation_Details:
                DATA CONTACT: BRENT MCGEE, EDITOR
                (SHORE_DIVING@YAHOO.COM)
                <http://www.shorediving.com/Earth/USA_West/Washington/index.htm>
    Type_of_Source_Media: ONLINE
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
               Calendar_Date: 2005
        Source_Currentness_Reference: DATE OF WEBSITE ACCESS
    Source_Citation_Abbreviation: NONE
    Source_Contribution: SOCECON INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: STREAMNET
            Publication_Date: 2005
            Title: DAM FACILITIES
            Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
            Other_Citation_Details:
                DATA CONTACT: REGIONAL STREAMNET GIS SPECIALIST
                (STREAMNETGIS@PSMFC.ORG)
    Source_Scale_Denominator: 100000
    Type_of_Source_Media: EMAIL
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
               Calendar_Date: 2002
        Source_Currentness_Reference: GROUND CONDITION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: SOCECON INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:

Originator: STREAMNET

Publication_Date: 2002

Title: PACIFIC NORTHWEST HATCHERY FACILITIES

Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA

Other_Citation_Details:

DATA CONTACT: REGIONAL STREAMNET GIS SPECIALIST (STREAMNETGIS@PSMFC.ORG)

Source_Scale_Denominator: 100000

Type_of_Source_Media: DOWNLOADABLE DATA

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 2002

Source_Currentness_Reference: DATE OF PUBLICATION

Source_Citation_Abbreviation: NONE

Source_Contribution: SOCECON INFORMATION

Source_Information:

Source_Citation:

Citation_Information:

Originator: US COAST GUARD (USCG) SECTOR PORTLAND

Publication_Date: 2005

Title: US COAST GUARD STATIONS

Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA

Other_Citation_Details:

DATA CONTACT: TRACY D. FERGUSON (USCG SECTOR PORTLAND, 503-240-2467)

Type_of_Source_Media: EMAIL

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 2005

Source_Currentness_Reference: DATE OF COMMUNICATION

Source_Citation_Abbreviation: NONE

Source_Contribution: SOCECON INFORMATION

Source_Information:

Source_Citation:

Citation_Information:

Originator: WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

Publication_Date: 2005

Title: BOAT-ACCESS ARTIFICIAL REEF LOCATIONS

Geospatial_Data_Presentation_Form: HARD-COPY TEXT

Other_Citation_Details:

UNPUBLISHED. CONTACT: WAYNE PALSSON, WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

Type_of_Source_Media: EMAIL

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 2005

Source_Currentness_Reference: DATE OF COMMUNICATION

Source_Citation_Abbreviation: NONE

Source_Contribution: SOCECON INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: WASHINGTON STATE DEPARTMENT OF ECOLOGY
            Publication_Date: 2003
            Title: FACILITY/SITES (FEDERAL SUPERFUND CLEANUP SITES)
            Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
            Other_Citation_Details:
                DATA CONTACT: RICH KIM (WASHINGTON DEPARTMENT OF
                ECOLOGY, 360-407-6121)
                <http://www.ecy.wa.gov/services/gis/data/data.htm>
    Source_Scale_Denominator: 100000
    Type_of_Source_Media: ONLINE
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Range_of_Dates/Times:
                Beginning_Date: 1996
                Ending_Date: 2006
        Source_Currentness_Reference: DATE OF PUBLICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: SOCECON INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: WASHINGTON STATE DEPARTMENT OF ECOLOGY
            Publication_Date: 2005
            Title: PUBLIC COASTAL ACCESS
            Geospatial_Data_Presentation_Form: EXCEL SPREADSHEET
            Other_Citation_Details:
                DATA CONTACT: JESSICA ARCHER (WASHINGTON STATE
                DEPARTMENT OF ECOLOGY, 360-407-6159)
    Type_of_Source_Media: EMAIL
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            Single_Date/Time:
                Calendar_Date: 2005
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    Source_Citation_Abbreviation: NONE
    Source_Contribution: SOCECON INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: WASHINGTON STATE DEPARTMENT OF
            TRANSPORTATION
            Publication_Date: 2004
            Title: STATE ROUTE GIS ROAD LOG, FERRY TERMINALS
            Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
            Other_Citation_Details:
                DATA CONTACT: ALLEN BLAKE (WASHINGTON STATE
                DEPARTMENT OF TRANSPORTATION, 360-570-2363)

<http://www.wsdot.wa.gov/mapsdata/geodatacatalog/default.htm>
Source_Scale_Denominator: 24K/500K
Type_of_Source_Media: DOWNLOADABLE DATA
Source_Time_Period_of_Content:
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        Single_Date/Time:
            Calendar_Date: 2004
    Source_Currentness_Reference: GROUND CONDITION
Source_Citation_Abbreviation: NONE
Source_Contribution: SOCECON INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: WASHINGTON STATE DEPARTMENT OF
            TRANSPORTATION
            Publication_Date: 2005
            Title: NON-MILITARY AIRPORTS OF WASHINGTON
            Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
            Other_Citation_Details:
                DATA CONTACT: JOHN SHAMBAUGH (WASHINGTON STATE
                DEPARTMENT OF TRANSPORTATION, 360-651-6306)
    Type_of_Source_Media: EMAIL
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 2005
        Source_Currentness_Reference: DATE OF PUBLICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: SOCECON INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: WASHINGTON STATE INTERAGENCY COMMITTEE FOR
            OUTDOOR RECREATION
            Publication_Date: 2003
            Title: MOTORIZED BOAT LAUNCHES OF WASHINGTON STATE
            Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
            Other_Citation_Details:
                DATA CONTACT: BOB EULISS (WASHINGTON STATE
                INTERAGENCY COMMITTEE FOR OUTDOOR RECREATION,
                360-902-3015)
    Type_of_Source_Media: EMAIL
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Single_Date/Time:
                Calendar_Date: 1997
        Source_Currentness_Reference: GROUND CONDITION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: SOCECON INFORMATION
Source_Information:
    Source_Citation:

    Citation_Information:
     Originator: WASHINGTON DEPARTMENT OF NATURAL RESOURCES
     Publication_Date: 2004
     Title: ALO.AQUATIC_BOUNDARY
     Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
     Other_Citation_Details:
      DATA CONTACT: FRANK FISCHER (WASHINGTON
      DEPARTMENT OF NATURAL RESOURCES, 360-902-1206)
      <http://www3.wadnr.gov/dnrapp6/dataweb/dmmatrix.html>
   Type_of_Source_Media: DOWNLOADABLE DATA
   Source_Time_Period_of_Content:
    Time_Period_Information:
     Single_Date/Time:
      Calendar_Date: 2004
    Source_Currentness_Reference: DATE OF PUBLICATION
   Source_Citation_Abbreviation: NONE
   Source_Contribution: SOCECON LINES INFORMATION
  Source_Information:
   Source_Citation:
    Citation_Information:
     Originator: WASHINGTON STATE DEPARTMENT OF
     TRANSPORTATION
     Publication_Date: 1999
     Title: FERRY ROUTES OF WASHINGTON STATE
     Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
     Other_Citation_Details:
      DATA CONTACT: RON CIHON (WASHINGTON STATE
      DEPARTMENT OF TRANSPORTATION, 360-709-5510)
   Source_Scale_Denominator: 24000
   Type_of_Source_Media: DOWNLOADABLE DATA
   Source_Time_Period_of_Content:
    Time_Period_Information:
     Single_Date/Time:
      Calendar_Date: 1999
    Source_Currentness_Reference: GROUND CONDITION
   Source_Citation_Abbreviation: NONE
   Source_Contribution: SOCECON LINES INFORMATION
  Source_Information:
   Source_Citation:
    Citation_Information:
     Originator: WASHINGTON STATE DEPARTMENT OF
     TRANSPORTATION
     Publication_Date: 2004
     Title: STATE ROUTE BRIDGES OF WASHINGTON
     Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
     Other_Citation_Details:
      DATA CONTACT: RICHARD C. DANIELS (WASHINGTON
      STATE DEPARTMENT OF TRANSPORTATION, 360-705-7799)
   Source_Scale_Denominator: 24000
   Type_of_Source_Media: DOWNLOADABLE DATA
   Source_Time_Period_of_Content:

Time_Period_Information:
　　Single_Date/Time:
　　　　Calendar_Date: 2004
　　Source_Currentness_Reference: GROUND CONDITION
　Source_Citation_Abbreviation: NONE
　Source_Contribution: SOCECON LINES INFORMATION
Process_Step:
　Process_Description:

Access locations: Three sources of data were used to depict locations where the shoreline can be accessed by foot or by vehicle: (1) Washington State Department of Ecology BEACH database (Ecology), (2) Lummi Indian Business Council, and (3) a local resource manager.

From Ecology's BEACH database, we extracted points depicting access locations. Approximately 79% of these points were repositioned to ensure that the locations more closely matched their actual position on land. The positions used in this database were identified using the HYDRO layer and 1-meter black-and-white digital orthophotographs. Not all access points identified in the BEACH database were included.

Access points provided by the Lummi Indian Business Council were repositioned to fall within the land portion of the HYDRO layer. Four additional access points were provided by a local resource expert. These points were collected on, and digitized off of, hardcopy base maps with a scale of 1:24,000.

Airports: Digital points representing non-military airports were provided by Washington State Department of Transportation (WSDOT).

Aquaculture sites: Digital points representing aquaculture sites (net pens) were acquired from the StreamNet website.

Archaeological sites: Local resource managers provided locations of archaeological sites on hardcopy 1:24,000 scale base maps. These data were digitized off of the hardcopy maps to produce point features.

Artificial reefs: Geographic coordinates for artificial reefs were provided by Washington Department of Fish and Wildlife via personal communication. The latitude and longitude coordinates were used to generate digital point features.

Beaches: Three sources of data were used to depict locations of recreational beaches: (1) Washington State Department of Ecology BEACH database (Ecology), (2) Lummi Indian Business Council, (3) local resource experts.

Approximately 88% of points included from Ecology's BEACH database were repositioned to ensure that each location more closely matched its actual position on land. The positions used in this database were identified using the HYDRO layer and 1-meter black-and-white digital orthophotographs. Not all beaches identified in the BEACH database were included.

Beach points provided by the Lummi Indian Business Council were repositioned to fall within the land portion of the HYDRO layer. Four additional beach points were collected from local resource experts using hardcopy base maps with a scale of

1:24,000. These points were digitized off of the hardcopy maps.

Boat Ramps: Four sources of data were used to depict locations of boat ramps: (1) Washington State Interagency Committee for Outdoor Recreation (IAC), (2) Washington State Department of Ecology BEACH database (Ecology), (3) Lummi Indian Business Council, and (4) local resource experts.

Digital points provided by the IAC and Ecology's BEACH database were repositioned to ensure that each location more closely matched its actual position on land. The positions used in this database were identified using the HYDRO layer and 1-meter black-and-white digital orthophotographs. Not all boat ramps identified in both datasets were included.

Digital points provided by Lummi Indian Business Council were repositioned to fall within the land portion of the HYDRO layer, where necessary. Additional boat ramp points were provided by local resource experts using hardcopy base maps with a scale of 1:24,000. These points were digitized off of the hardcopy maps.

Bridges: Digital lines were provided by Washington State Department of Transportation. Due to cartographic limitations, not all bridges identified in the original dataset were included.

Coast Guard stations: Digital points representing U.S. Coast Guard stations were provided by the Portland Sector of the U.S. Coast Guard.

Diving sites: Geographic coordinates for diving sites were collected from three locally well-known diving information websites. The latitude and longitude coordinates were used to generate digital point features. Many of the points represent land-based dive site entry locations.

Equipment: Two sources of digital data points were used to depict locations of storage for, or availability of, spill response equipment: (1) Regional Response Team Northwest Area Committee and (2) Lummi Indian Business Council. Additional boat ramp points were provided by a local resource expert using hardcopy base maps with a scale of 1:24,000.

Ferry routes: Digital lines representing paths of ferry travel were provided by Washington State Department of Transportation.

Ferry terminals: Digital points representing ferry docking areas/terminals were provided by Washington State Department of Transportation and Washington State Department of Ecology (BEACH database).

Hatcheries: Two sources of digital data points were used to depict locations of hatcheries: (1) StreamNet website and (2) Lummi Indian Business Council.

Hazardous waste: Digital points representing Federal (Superfund) Cleanup Sites (FCS) were provided by Washington State Department of Ecology. All spatial duplicates were removed.

International Boundary: The line that marks the boundary between the United States (Washington) and Canada (British Columbia) was provided by Washington Department of Natural Resources.

Locks and dams: Digital points representing locks and/or dams were provided by the StreamNet website. Only those dams associated with streams were included.

Log Storage: Local resource managers provided locations of log storage sites on hardcopy 1:24,000 scale base maps. These data were digitized off of the hardcopy maps to produce point features.

Marinas: Four sources of data were used to depict locations of marinas: (1) Washington State Interagency Committee for Outdoor Recreation (IAC), (2) Washington State Department of Ecology BEACH database (Ecology), (3) Lummi Indian Business Council, and (4) a local resource expert.

Digital points provided by the IAC and Ecology's BEACH database were repositioned to ensure that each location more closely matched its actual position on land. The positions used in this database were identified using the HYDRO layer and 1-meter black-and-white digital orthophotographs. Not all marinas identified in both datasets were included.

Digital points provided by Lummi Indian Business Council were repositioned to fall within the land portion of the HYDRO layer, where necessary. These points were digitized off of the hardcopy maps.

Parks: Digital points representing parks were provided by Washington State Department of Ecology (BEACH database).

The above digital and/or hardcopy sources were compiled by the project biologist to create the SOCECON data layer. Depending on the type of source data, three general approaches are used for compiling the data layer: (1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles and digitized; (2) hardcopy maps are digitized at their source scale; (3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer.

Process_Date: 200603
Process_Contact:
    Contact_Information:
        Contact_Organization_Primary:
            Contact_Organization: Concurrent Technologies Corporation
            Contact_Person: Joy Haydt
        Contact_Address:
            Address_Type: Physical address
            Address: 5780 W. Werner Rd.
            City: Bremerton
            State_or_Province: Washington
            Postal_Code: 98312
        Contact_Voice_Telephone: (360) 782-5517
        Contact_Facsimile_Telephone: (360) 782-5594
        Contact_Electronic_Mail_Address: haydtj@ctc.com
Process_Step:
  Process_Description:
    The compiled ESI, biology, and human-use data are plotted onto hardcopy draft

maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. If necessary, edits to the SOCECON data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.

Process_Date: 200605
Process_Contact:
   Contact_Information:
      Contact_Organization_Primary:
         Contact_Organization: NOAA
         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: 1132
      SDTS_Terms_Description:
         SDTS_Point_and_Vector_Object_Type: Complete chain
         Point_and_Vector_Object_Count: 159
      SDTS_Terms_Description:
         SDTS_Point_and_Vector_Object_Type: Link
         Point_and_Vector_Object_Count: 1431
      SDTS_Terms_Description:
         SDTS_Point_and_Vector_Object_Type: Node, planar graph
         Point_and_Vector_Object_Count: 278

Spatial_Reference_Information:
   Horizontal_Coordinate_System_Definition:
      Geographic:
         Latitude_Resolution: 0.000001
         Longitude_Resolution: 0.000001
         Geographic_Coordinate_Units: Decimal degrees
      Geodetic_Model:
         Horizontal_Datum_Name: North American Datum of 1983
         Ellipsoid_Name: Geodetic Reference System 80
         Semi-major_Axis: 6378137.000000
         Denominator_of_Flattening_Ratio: 298.257222

Entity_and_Attribute_Information:

    Overview_Description:

        Entity_and_Attribute_Overview:

            In addition to the geographic data layers, two relational attribute or data tables, SOC_DAT and SOURCES, are used to store the complex socioeconomic data in the ESI data structure. The geographic data layer containing socioeconomic data resource information (in this case, SOCECON) is linked to the Socioeconomic Resources table (SOC_DAT) using the unique ID and the lookup table SOC_LUT, or it can be linked directly using HUNUM. HUNUM is a unique reference number concatenated with the atlas number (for Puget Sound and Strait of Juan de Fuca, the number is 79). ID is a unique combination of the atlas number (79), an element specific number (SOCECON = 10), and a unique record number. SOC_DAT and the other relational data tables are described below in detail. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way these tables relate to the geographic data layers and other attribute tables in the ESI data structure.

    Detailed_Description:

        Entity_Type:

            Entity_Type_Label: SOCECON.PAT

            Entity_Type_Definition:

                The SOCECON.PAT table contains attribute information for the vector points representing access locations, airports, aquaculture sites, archaeological sites, artificial reefs, beaches, boat ramps, U.S. Coast Guard stations, dive sites, spill response equipment storage sites, ferry terminals, hatcheries, hazardous waste sites, locks and dams, marinas, and parks. 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: A

                    Enumerated_Domain_Value_Definition: Airport

                    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

            Attribute_Domain_Values:

                Enumerated_Domain:

                    Enumerated_Domain_Value: A2

                    Enumerated_Domain_Value_Definition: Access Location

                    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

            Attribute_Domain_Values:

                Enumerated_Domain:

                    Enumerated_Domain_Value: AQ

                    Enumerated_Domain_Value_Definition: Aquaculture Site

                    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

            Attribute_Domain_Values:

                Enumerated_Domain:

Enumerated_Domain_Value: AR
Enumerated_Domain_Value_Definition: Artificial Reef
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: AS
Enumerated_Domain_Value_Definition: Archaeological Site
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: B
Enumerated_Domain_Value_Definition: Beach
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 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: U.S. Coast Guard Station
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: DV
Enumerated_Domain_Value_Definition: Diving Site
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: EQ
Enumerated_Domain_Value_Definition: Equipment Storage Site
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: F
Enumerated_Domain_Value_Definition: Ferry Terminal
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: HW
Enumerated_Domain_Value_Definition: Hazardous Waste Site
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: LS

Enumerated_Domain_Value_Definition: Log Storage

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: P

Enumerated_Domain_Value_Definition: Regional or State Park

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 (79), element number (10), and record number.

Attribute_Definition_Source: NOAA

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 0791000001

Range_Domain_Maximum: 0791001132

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: 079002004

Range_Domain_Maximum: 079003323

Detailed_Description:

Entity_Type:

Entity_Type_Label: SOCECON.AAT

Entity_Type_Definition:

The SOCECON.AAT table contains attribute information for the vector lines representing the international boundary, bridges, and ferry routes. 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: FR

　　Enumerated_Domain_Value_Definition: Ferry Route

　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

　Enumerated_Domain:

　　Enumerated_Domain_Value: IB

　　Enumerated_Domain_Value_Definition: International Border

　　Enumerated_Domain_Value_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:

　Attribute_Label: SOURCE_ID

　Attribute_Definition:

　　Spatial data source for the data layer lines that link to records in the SOURCES data table.

　Attribute_Definition_Source: Research Planning, Inc.

　Attribute_Domain_Values:

　　Range_Domain:

　　　Range_Domain_Minimum: 1

　　　Range_Domain_Maximum: N

Detailed_Description:

　Entity_Type:

　　Entity_Type_Label: 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: 079000100

　　　　Range_Domain_Maximum: 079003970

　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 (79), 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: 0791000001
  Range_Domain_Maximum: 0791103391
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: 079000100
    Range_Domain_Maximum: 079003970
 Attribute:
  Attribute_Label: TYPE
  Attribute_Definition: Identifies the feature type
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
   Enumerated_Domain:
    Enumerated_Domain_Value: AIRPORT
    Enumerated_Domain_Value_Definition: Airport
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
   Enumerated_Domain:
    Enumerated_Domain_Value: ACCESS
    Enumerated_Domain_Value_Definition: Access Location
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
   Enumerated_Domain:
    Enumerated_Domain_Value: AQUACULTURE
    Enumerated_Domain_Value_Definition: Aquaculture Site
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
   Enumerated_Domain:
    Enumerated_Domain_Value: ARTIFICIAL REEF
    Enumerated_Domain_Value_Definition: Artificial Reef
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:

Enumerated_Domain:
    Enumerated_Domain_Value: ARCHAEOLOGICAL SITE
    Enumerated_Domain_Value_Definition: Archaeological Site
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: BEACH
        Enumerated_Domain_Value_Definition: Beach
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: BOAT RAMP
        Enumerated_Domain_Value_Definition: Boat Ramp
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: COMMERCIAL FISHING
        Enumerated_Domain_Value_Definition: Commercial Fishing
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: COAST GUARD
        Enumerated_Domain_Value_Definition: U.S. Coast Guard Station
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: DIVING SITE
        Enumerated_Domain_Value_Definition: Diving Site
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: EQUIPMENT
        Enumerated_Domain_Value_Definition: Equipment Storage Site
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: FERRY
        Enumerated_Domain_Value_Definition: Ferry Terminal
        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: HAZARDOUS WASTE SITE
        Enumerated_Domain_Value_Definition: Hazardous Waste Site
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:

Enumerated_Domain_Value: INDIAN RESERVATION

Enumerated_Domain_Value_Definition: Indian Reservation

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: LOG STORAGE

Enumerated_Domain_Value_Definition: Log Storage

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: MANAGEMENT AREA

Enumerated_Domain_Value_Definition: Management Area

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: MARINA

Enumerated_Domain_Value_Definition: Marina

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: MARINE SANCTUARY

Enumerated_Domain_Value_Definition: Marine Sanctuary

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: NATIONAL PARK

Enumerated_Domain_Value_Definition: National Park

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: NATURE CONSERVANCY

Enumerated_Domain_Value_Definition: Nature Conservancy Area

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: REGIONAL OR STATE PARK

Enumerated_Domain_Value_Definition: Regional or State Park

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: SUBSISTENCE

Enumerated_Domain_Value_Definition: Subsistence Area

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: WILDLIFE REFUGE

Enumerated_Domain_Value_Definition: Wildlife Refuge

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: NAME

Attribute_Definition: The feature name.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: CONTACT

Attribute_Definition: Contact person or entity.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: PHONE

Attribute_Definition: Contact telephone number.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas

Attribute:

Attribute_Label: G_SOURCE

Attribute_Definition:

Geographic source identifier that links records in the SOC_DAT data table to records in the SOURCES data table.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 1

Range_Domain_Maximum: N

Attribute:

Attribute_Label: A_SOURCE

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 1

Range_Domain_Maximum: N

Detailed_Description:

Entity_Type:

Entity_Type_Label: SOURCES

Entity_Type_Definition:

The data table SOURCES contains the primary sources used to create the ESI data set. See the Browse_Graphic section for a link to the entity-relationship diagram,

which describes the way this table relates to other attribute tables in the ESI data structure.

Entity_Type_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: SOURCE_ID

Attribute_Definition:

Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; and SOURCE_ID in the ESI, HYDRO, and SOCECON data layers.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 1

Range_Domain_Maximum: N

Attribute:

Attribute_Label: ORIGINATOR

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: DATE_PUB

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: YYYYMM

Enumerated_Domain_Value_Definition: YYYY for year and optionally MM for month

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: TITLE

Attribute_Definition: Title of source material or data.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: DATA_FORMAT

Attribute_Definition: The format of the source material.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: PUBLICATION

Attribute_Definition: Additional citation information.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:
    Attribute_Label: SCALE
    Attribute_Definition: Description of the source scale.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Unrepresentable_Domain: Acceptable values change from atlas to atlas.
Attribute:
    Attribute_Label: TIME_PERIOD
    Attribute_Definition:
        Date(s) of data collection that the source material is based upon.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Distribution_Information:
    Distributor:
        Contact_Information:
            Contact_Person_Primary:
                Contact_Person: John Kaperick
                Contact_Organization: NOAA, Office of Response and Restoration
            Contact_Address:
                Address_Type: Physical Address
                Address: 7600 Sand Point Way N.E.
                City: Seattle
                State_or_Province: Washington
                Postal_Code: 98115-6349
            Contact_Voice_Telephone: (206) 526-6400
            Contact_Facsimile_Telephone: (206) 526-6329
    Resource_Description:
        ESI Atlas for Puget Sound and Strait of Juan de Fuca, Washington
    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 a Geodatabase; ARC export, MOSS, and Shape files; and MARPLOT map folders. An
        ArcMap .mxd file, an ArcView 3.x ESI project, and an 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: 200607

Metadata_Review_Date: 200607
Metadata_Contact:
 Contact_Information:
  Contact_Person_Primary:
   Contact_Person: Jill Petersen
   Contact_Organization: NOAA, Office of Response and Restoration
  Contact_Position: GIS Manager
  Contact_Address:
   Address_Type: Physical Address
   Address: 7600 Sand Point Way N.E.
   City: Seattle
   State_or_Province: Washington
   Postal_Code: 98115-6349
  Contact_Voice_Telephone: (206) 526-6944
  Contact_Facsimile_Telephone: (206) 526-6329
  Contact_Electronic_Mail_Address: Jill.Petersen@noaa.gov
 Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
 Metadata_Standard_Version: FGDC-STD-001-1998

Generated by mp version 2.8.21 on Mon Jul 24 22:48:25 2006

Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Puget Sound and Strait of Juan de Fuca, Washington: 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.
>>> *Publication_Date:* 200607
>>> *Title:*
>>>> Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Puget Sound and Strait of Juan de Fuca, Washington: BIRDS (Bird Polygons)
>>> *Edition:* First
>>> *Geospatial_Data_Presentation_Form:* Vector digital data
>>> *Series_Information:*
>>>> *Series_Name:* None
>>>> *Issue_Identification:* Puget Sound and Strait of Juan de Fuca, Washington
>>> *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:*
>>>> Funding was provided by Navy Region Northwest. This data set was prepared by Concurrent Technologies Corporation, Bremerton, Washington, and Sound GIS, Seattle, Washington with support from 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.

Description:

    Abstract:

This data set contains sensitive biological resource data for wading birds, shorebirds, waterfowl, diving birds, seabirds, raptors, gulls, and terns in Puget Sound and Strait of Juan de Fuca, Washington. Vector polygons in this data set represent locations of bird 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 Puget Sound and Strait of Juan de Fuca, Washington. 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 Puget Sound and Strait of Juan de Fuca 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: 1990

            Ending_Date: 2006

    Currentness_Reference:

The biological data were compiled during 2005-2006. The currentness dates for the data range from 1990 to 2006 and are documented in the Lineage section.

Status:

    Progress: Complete

    Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

    Bounding_Coordinates:

        West_Bounding_Coordinate: -124.75100

        East_Bounding_Coordinate: -122.12600

        North_Bounding_Coordinate: 49.00000

        South_Bounding_Coordinate: 47.00000

Keywords:

    Theme:

        Theme_Keyword_Thesaurus: None

        Theme_Keyword: ESI

        Theme_Keyword: Sensitivity maps

        Theme_Keyword: Coastal resources

        Theme_Keyword: Oil spill planning

        Theme_Keyword: Coastal Zone Management

        Theme_Keyword: Wildlife

        Theme_Keyword: Birds

    Place:

        Place_Keyword_Thesaurus: None

        Place_Keyword: Puget Sound and Strait of Juan de Fuca, Washington

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 Puget Sound and Strait of Juan de Fuca, Washington ESI data.

Browse_Graphic_File_Type: JPEG

Data_Set_Credit:

This project was funded by Navy Region Northwest and supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 9.1) and SQL SERVER(r) (version 2000). The hardware configuration is PC's with Windows Operating System (2000/XP/2003).

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, habitatl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mampt.e00, mgt.e00, nests.e00, socecon.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report:

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

Logical_Consistency_Report:

A multi-stage error checking process, described in the above Attribute_Accuracy_Report, is used to verify both attribute accuracy and logical consistency throughout data production. This

process includes multiple automated logical consistency checks that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and SQL SERVER(r) to ARC/INFO(r) consistencies. A final review is made by the GIS manager, where the data are written to CD-ROM and the metadata are written.

After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks. In the process of checking for topological and database consistencies, new ID's and RARNUM's or HUNUM's are also generated. The new ID's are a combination of atlas number, element number, and record number. In addition, the value used to represent the element is modified to reflect the type of feature being mapped. In the case of an element that is normally represented by a point or polygon, a value of 20 is added to the standard element value for mapping of linear features. In the case where an element usually mapped as a polygon is represented by a point, a value of 30 is added to the regular element value. The RARNUM's are also modified to include the atlas number, so multiple atlases can be combined and RARNUM's remain unique. RARNUM's are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUM's are also modified to include the atlas number.

Completeness_Report:

These data represent a synthesis of digital data on bird resting, migratory staging, feeding, and wintering concentration areas. This information was adapted from Washington Department of Fish and Wildlife's (WDFW) Priority Habitats digital data and Puget Sound Ambient Monitoring Program's Marine Bird Surveys. Contact WDFW for additional information on these databases. See also the NESTS (Nest Points) data layer, part of the larger Puget Sound and Strait of Juan de Fuca, Washington ESI database, for additional bird information. These data do not necessarily represent all bird occurrences in Puget Sound and Strait of Juan de Fuca. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 1, Common loon, Gavia immer; 3, Red-throated loon, Gavia stellata; 7, Western grebe, Aechmophorus occidentalis; 26, Bufflehead, Bucephala albeola; 27, Long-tailed duck, Clangula hyemalis; 28, Harlequin duck, Histrionicus histrionicus; 31, Pacific loon, Gavia pacifica; 47, Pigeon guillemot, Cepphus columba; 50, Rhinoceros auklet, Cerorhinca monocerata; 79, Cormorant, Phalacrocorax sp.; 104, Murre, Uria sp.; 106, Ancient murrelet, Synthliboramphus antiquus; 136, Caspian tern, Sterna caspia; 299, Scaup, Aythya spp.; 300, Goldeneye, Bucephala spp.; 302, Scoters, Melanitta spp.; 1001, Gulls, n/a; 1002, Shorebirds, n/a; 1003, Waterfowl, n/a.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

Spatial components for the biological data layers can come from expert interviews, hardcopy, or digital sources. Some of the spatial components of the biological data layers may have been developed using regional experts who estimate concentration areas. It is difficult to estimate the positional accuracy of such data, except to state that they are compiled on hardcopy base maps with a scale of 1:24,000. Some of the spatial components of the biological data sets are developed from pre-existing digital or hardcopy sources and reflect the positional accuracy of these original data. See the Lineage and Process_Description sections for more information on the original data source and how these data were integrated or manipulated to create the final data set. Note that biological resource data by their very nature are considered "fuzzy", and this should be understood when considering the positional accuracy of vector digital objects representing these resources.

Lineage:

Source_Information:

Source_Citation:
    Citation_Information:
        Originator: DAVE NYSEWANDER (WASHINGTON DEPARTMENT OF FISH AND WILDLIFE)
        Publication_Date: 2006
        Title: SEASONALITY INFORMATION FOR MARINE BIRD DENSITY ATLAS
        Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
        Other_Citation_Details: UNPUBLISHED
Type_of_Source_Media: PERSONAL COMMUNICATION
Source_Time_Period_of_Content:
    Time_Period_Information:
        Single_Date/Time:
            Calendar_Date: 2006
    Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: BIRDS INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: WASHINGTON DEPARTMENT OF FISH AND WILDLIFE
            Publication_Date: 2005
            Title: MARINE BIRD DENSITY ATLAS
            Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
            Other_Citation_Details:
                MARINE BIRD AND MAMMAL COMPONENT, PUGET SOUND AMBIENT MONITORING PROGRAM, WASHINGTON DEPARTMENT OF FISH AND WILDLIFE, 600 CAPITOL WAY NORTH, OLYMPIA, WASHINGTON, 98501. DATA CONTACT: DAVE NYSEWANDER, 360-902-8134; <http://wdfw.wa.gov/mapping/psamp/>
    Type_of_Source_Media: EMAIL
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Range_of_Dates/Times:
                Beginning_Date: 1992
                Ending_Date: 2004
        Source_Currentness_Reference: GROUND CONDITION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: BIRDS INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: WASHINGTON DEPARTMENT OF FISH AND WILDLIFE
            Publication_Date: 2005
            Title: PRIORITY HABITATS AND SPECIES DATABASE
            Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
            Other_Citation_Details:
                WASHINGTON DEPARTMENT OF FISH AND WILDLIFE, 600 CAPITOL WAY NORTH, OLYMPIA, WASHINGTON, 98501
    Source_Scale_Denominator: VARIES

Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:
    Time_Period_Information:
        Range_of_Dates/Times:
            Beginning_Date: 1990
            Ending_Date: 2004
    Source_Currentness_Reference: GROUND CONDITION
Source_Citation_Abbreviation: NONE
Source_Contribution: BIRDS INFORMATION
Process_Step:
    Process_Description:

Two main sources of data were used to depict bird distribution for this data layer: (1) Washington Department of Fish and Wildlife's (WDFW) Priority Habitats and Species database, and (2) WDFW's Marine Bird Density Atlas.

From the WDFW Priority Habitats and Species data, we extracted polygons depicting concentration areas for harlequin duck, shorebirds, and waterfowl. From the WDFW Marine Bird Density Atlas, we extracted the 1-minute survey cells with the three highest density categories for each species and species group. Concentration and seasonality information was provided by resource experts, or was extracted from published sources, reports, and survey data.

The above digital and/or hardcopy sources were compiled by the project biologist to create the BIRDS data layer. Depending on the type of source data, three general approaches are used for compiling a biology data layer: (1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles and digitized; (2) hardcopy maps are digitized at their source scale; (3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer.

    Process_Date: 200603
    Process_Contact:
        Contact_Information:
            Contact_Organization_Primary:
                Contact_Organization: Concurrent Technologies Corporation
                Contact_Person: Allison Bailey
            Contact_Address:
                Address_Type: Physical address
                Address: 5780 W. Werner Road
                City: Bremerton
                State_or_Province: Washington
                Postal_Code: 98312
            Contact_Voice_Telephone: (206) 459-2301
            Contact_Voice_Telephone: (360) 782-5500
            Contact_Facsimile_Telephone: (360) 782-5594
            Contact_Electronic_Mail_Address: allison@soundgis.com
Process_Step:
    Process_Description:

The compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a

second set of interviews is conducted to review the maps. If necessary, edits to the
BIRDS data layer are made based on the recommendations of the resource experts,
and final hardcopy maps and digital data are created.

Process_Date: 200605
Process_Contact:
    Contact_Information:
        Contact_Organization_Primary:
            Contact_Organization: NOAA
            Contact_Person: Jill Petersen
        Contact_Address:
            Address_Type: Physical address
            Address: 7600 Sand Point Way N.E.
            City: Seattle
            State_or_Province: Washington
            Postal_Code: 98115-6349
        Contact_Voice_Telephone: (206) 526-6944
        Contact_Facsimile_Telephone: (206) 526-6329
        Contact_Electronic_Mail_Address: Jill.Petersen@noaa.gov

---

Spatial_Data_Organization_Information:
    Direct_Spatial_Reference_Method: Vector
    Point_and_Vector_Object_Information:
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: GT-polygon composed of chains
            Point_and_Vector_Object_Count: 2851
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Area point
            Point_and_Vector_Object_Count: 2852
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Complete chain
            Point_and_Vector_Object_Count: 6861
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Link
            Point_and_Vector_Object_Count: 196483
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Node, planar graph
            Point_and_Vector_Object_Count: 4610

Spatial_Reference_Information:
    Horizontal_Coordinate_System_Definition:
        Geographic:
            Latitude_Resolution: 0.000001
            Longitude_Resolution: 0.000001
            Geographic_Coordinate_Units: Decimal degrees
        Geodetic_Model:
            Horizontal_Datum_Name: North American Datum of 1983
            Ellipsoid_Name: Geodetic Reference System 80
            Semi-major_Axis: 6378137.000000
            Denominator_of_Flattening_Ratio: 298.257222

Entity_and_Attribute_Information:

  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 Puget Sound and Strait of Juan de Fuca atlas, the number is 79), an element/layer specific number (BIRDS are layer 1, FISH are layer 2, etc.), and a unique record number. The RARNUM represents a unique combination of species, seasonalities, concentrations, and source information. For each of these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases. BIORES and the other relational data tables are described below in detail. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way these tables relate to the geographic data layers and other attribute tables in the ESI data structure.

Due to the complexity of the relational database model, the data items are also post-processed into a flat file format. This table, called BIOFILE, may be used in place of the relational files described below to ease simple data queries. The items in the flat file are ELEMENT, SUBELEMENT, NAME, GEN_SPEC, S, F, NHP, DATE_PUB, CONC, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC, BREED1, BREED2, BREED3, BREED4, BREED5, RARNUM, G_SOURCE, S_SOURCE, and BREED. All of these items are the same as their counterparts in the individual data tables described below, except the BREED1-BREED5 and BREED items. BREED is a newly generated variable used to link to the BREED_DT data table, a modified, more compact version of the relational BREED data table. BREED1-BREED5 give a text summary of when each life stage occurs within the associated map object. The life stages referred to are the same as those listed in the Detailed_Description of the BREED data table. The link to the BIOFILE may be made through the BIO_LUT, using ID to link to RARNUM, or BIOFILE may be linked directly to the RARNUM in each of the geographic layer's attribute data tables. As mentioned, BREED_DT is an auxiliary support data table to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item.

A second supporting data table is SOURCES. This is the same as the source file described above, and the link from the flat file is both G_SOURCE and S_SOURCE. It should be noted that although the flat file eases data query, it is not a normalized database structure, and actual updates performed by the states and other responsible agencies should be done using the relational data tables. The entity-relationship diagram, describing relationships between attribute tables in the ESI data structure, does NOT include the BIOFILE data table, and this data table is NOT described in detail below.

  Detailed_Description:

  Entity_Type:

  Entity_Type_Label: BIRDS.PAT

  Entity_Type_Definition:

The BIRDS.PAT table contains attribute information for the vector polygons in this

data set representing locations of bird 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 (79), 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: 0790100002

Range_Domain_Maximum: 0790103466

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: 079000004

Range_Domain_Maximum: 079000398

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: 079000001

Range_Domain_Maximum: 079000797

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 (79), 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:* 0790100002
>> *Range_Domain_Maximum:* 0793400327

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:* 079000001
>>>> *Range_Domain_Maximum:* 079000797

> *Attribute:*

>> *Attribute_Label:* SPECIES_ID

>> *Attribute_Definition:*

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

>> *Attribute_Definition_Source:* Research Planning, Inc.

>> *Attribute_Domain_Values:*

>>> *Range_Domain:*
>>>> *Range_Domain_Minimum:* 1
>>>> *Range_Domain_Maximum:* N

> *Attribute:*

>> *Attribute_Label:* CONC

>> *Attribute_Definition:*

>>> The field CONC refers to "concentration," abundance, or density values. No concentration data were available for birds, 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: alcid
    Enumerated_Domain_Value_Definition: Alcid
    Enumerated_Domain_Value_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: cephalopod
    Enumerated_Domain_Value_Definition: Cephalopod
    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: echinoderm
    Enumerated_Domain_Value_Definition: Echinoderm

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: 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: kelp
        Enumerated_Domain_Value_Definition: Kelp
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: m_benthic
        Enumerated_Domain_Value_Definition: Marine benthic fish
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: m_pelagic
        Enumerated_Domain_Value_Definition: Marine pelagic fish
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: pelagic
        Enumerated_Domain_Value_Definition: Pelagic bird
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: pinniped
        Enumerated_Domain_Value_Definition: Pinniped
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: 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: sea otter
        Enumerated_Domain_Value_Definition: Sea otter
        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: shrimp
        Enumerated_Domain_Value_Definition: Shrimps
        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_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: 0
        Enumerated_Domain_Value_Definition: Date unspecified
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: EL_SPE
Attribute_Definition:
    Concatenation of ELEMENT and SPECIES_ID. This item links records in the
    SPECIES data table to records in the BIORES and STATUS data tables.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:

Enumerated_Domain_Value: E#####
Enumerated_Domain_Value_Definition:
Where E is the first character of ELEMENT and the next five characters
are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1;
EL_SPE = 'B00001').
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Detailed_Description:
Entity_Type:
Entity_Type_Label: SEASONAL
Entity_Type_Definition:
The data table SEASONAL contains information on the seasonal presence of each
species associated with each spatial vector object. See the Browse_Graphic section
for a link to the entity-relationship diagram, which describes the way this table
relates to other attribute tables in the ESI data structure.
Entity_Type_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: ELEMENT
Attribute_Definition: Major categories of biological data.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: BIRD
Enumerated_Domain_Value_Definition: Birds
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: FISH
Enumerated_Domain_Value_Definition: Fish
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: HABITAT
Enumerated_Domain_Value_Definition: Habitats and Plants
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: INVERT
Enumerated_Domain_Value_Definition: Invertebrates
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: M_MAMMAL
Enumerated_Domain_Value_Definition: Marine Mammals
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: REPTILE
Enumerated_Domain_Value_Definition: Reptiles and Amphibians
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:

      Enumerated_Domain_Value: T_MAMMAL

      Enumerated_Domain_Value_Definition: Terrestrial Mammals

      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

 Attribute_Label: SPECIES_ID

 Attribute_Definition:

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

 Attribute_Definition_Source: Research Planning, Inc.

 Attribute_Domain_Values:

   Range_Domain:

     Range_Domain_Minimum: 1

     Range_Domain_Maximum: N

Attribute:

 Attribute_Label: SEASON_ID

 Attribute_Definition:

   Numeric identifier for the unique monthly presence and life history characteristics
   of each species at a given location.

 Attribute_Definition_Source: Research Planning, Inc.

 Attribute_Domain_Values:

   Range_Domain:

     Range_Domain_Minimum: 1

     Range_Domain_Maximum: N

Attribute:

 Attribute_Label: JAN

 Attribute_Definition: January

 Attribute_Definition_Source: Research Planning, Inc.

 Attribute_Domain_Values:

   Enumerated_Domain:

     Enumerated_Domain_Value: X

     Enumerated_Domain_Value_Definition: Present in January

     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

 Attribute_Label: FEB

 Attribute_Definition: February

 Attribute_Definition_Source: Research Planning, Inc.

 Attribute_Domain_Values:

   Enumerated_Domain:

     Enumerated_Domain_Value: X

     Enumerated_Domain_Value_Definition: Present in February

     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

 Attribute_Label: MAR

 Attribute_Definition: March

 Attribute_Definition_Source: Research Planning, Inc.

 Attribute_Domain_Values:

   Enumerated_Domain:

     Enumerated_Domain_Value: X

     Enumerated_Domain_Value_Definition: Present in March

     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

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

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

Attribute:

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

Attribute:

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

Attribute:

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

Attribute:

Attribute_Label: EL_SPE_SEA
Attribute_Definition:
Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links
records in the SEASONAL data table to records in the BIORES and BREED data
tables.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: E#######
Enumerated_Domain_Value_Definition:
Where E is the first character of ELEMENT, the next five characters are
SPECIES_ID, and the last two characters are SEASON_ID (e.g.
ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1;
EL_SPE_SEA = 'B0000101').
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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

Entity_Type_Definition_Source: Research Planning, Inc.

Attribute:

    Attribute_Label: EL_SPE_SEA

    Attribute_Definition:

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

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: E#######

            Enumerated_Domain_Value_Definition:

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

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

    Attribute_Label: MONTH

    Attribute_Definition:

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

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Range_Domain:

            Range_Domain_Minimum: 1

            Range_Domain_Maximum: 12

Attribute:

    Attribute_Label: BREED1

    Attribute_Definition:

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

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: Y

            Enumerated_Domain_Value_Definition: Life-history stage or activity present

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: N

            Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: -

            Enumerated_Domain_Value_Definition:

Breed category not used or not appropriate for record(s) in question
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: BREED2

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

Attribute_Definition_Source: Research Planning, Inc.

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

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: N
Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: -
Enumerated_Domain_Value_Definition:
Breed category not used or not appropriate for record(s) in question
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: BREED3

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

Attribute_Definition_Source: Research Planning, Inc.

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

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: N
Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: -

Enumerated_Domain_Value_Definition:
Breed category not used or not appropriate for record(s) in question
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: BREED4
Attribute_Definition:
Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED4 = fledging; "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 HABITAT or T_MAMMAL elements.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Y
Enumerated_Domain_Value_Definition: Life-history stage or activity present
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: N
Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: -
Enumerated_Domain_Value_Definition:
Breed category not used or not appropriate for record(s) in question
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: BREED5
Attribute_Definition:
Life history stage or activity type, where: if ELEMENT is "FISH" then BREED5 = adults; if ELEMENT is "INVERT" then BREED5 = adults; if ELEMENT is "REPTILE" then BREED5 = adults. This attribute is not used for BIRD, M_MAMMAL, HABITAT, or T_MAMMAL elements.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Y
Enumerated_Domain_Value_Definition: Life-history stage or activity present
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: N
Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: -

Enumerated_Domain_Value_Definition:
>> Breed category not used or not appropriate for record(s) in question
>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Detailed_Description:
> *Entity_Type:*
>> *Entity_Type_Label:* SOURCES
>> *Entity_Type_Definition:*
>>> The data table SOURCES contains the primary sources used to create the ESI data set. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.
>> *Entity_Type_Definition_Source:* Research Planning, Inc.
> *Attribute:*
>> *Attribute_Label:* SOURCE_ID
>> *Attribute_Definition:*
>>> Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; and SOURCE_ID in the ESI, HYDRO, and SOCECON data layers.
>> *Attribute_Definition_Source:* Research Planning, Inc.
>> *Attribute_Domain_Values:*
>>> *Range_Domain:*
>>>> *Range_Domain_Minimum:* 1
>>>> *Range_Domain_Maximum:* N
> *Attribute:*
>> *Attribute_Label:* ORIGINATOR
>> *Attribute_Definition:* Author or developer of source material or data set.
>> *Attribute_Definition_Source:* Research Planning, Inc.
>> *Attribute_Domain_Values:*
>>> *Unrepresentable_Domain:* Acceptable values change from atlas to atlas.
> *Attribute:*
>> *Attribute_Label:* DATE_PUB
>> *Attribute_Definition:*
>>> Date of source material, publication, or date of personal communication with expert source.
>> *Attribute_Definition_Source:* Research Planning, Inc.
>> *Attribute_Domain_Values:*
>>> *Enumerated_Domain:*
>>>> *Enumerated_Domain_Value:* YYYYMM
>>>> *Enumerated_Domain_Value_Definition:* YYYY for year and optionally MM for month
>>>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
> *Attribute:*
>> *Attribute_Label:* TITLE
>> *Attribute_Definition:* Title of source material or data.
>> *Attribute_Definition_Source:* Research Planning, Inc.
>> *Attribute_Domain_Values:*
>>> *Unrepresentable_Domain:* Acceptable values change from atlas to atlas.
> *Attribute:*
>> *Attribute_Label:* DATA_FORMAT
>> *Attribute_Definition:* The format of the source material.

Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Unrepresentable_Domain: Acceptable values change from atlas to atlas.
Attribute:
    Attribute_Label: PUBLICATION
    Attribute_Definition: Additional citation information.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Unrepresentable_Domain: Acceptable values change from atlas to atlas.
Attribute:
    Attribute_Label: SCALE
    Attribute_Definition: Description of the source scale.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Unrepresentable_Domain: Acceptable values change from atlas to atlas.
Attribute:
    Attribute_Label: TIME_PERIOD
    Attribute_Definition:
        Date(s) of data collection that the source material is based upon.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Unrepresentable_Domain: Acceptable values change from atlas to atlas.
Detailed_Description:
    Entity_Type:
        Entity_Type_Label: STATUS
        Entity_Type_Definition:
            The data table STATUS identifies the species that are listed as either threatened or endangered by a state, federal, or international authority. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.
        Entity_Type_Definition_Source: Research Planning, Inc.
    Attribute:
        Attribute_Label: ELEMENT
        Attribute_Definition: Major categories of biological data.
        Attribute_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: BIRD
                Enumerated_Domain_Value_Definition: Birds
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: FISH
                Enumerated_Domain_Value_Definition: Fish
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: HABITAT
                Enumerated_Domain_Value_Definition: Habitats and Plants
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:

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

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

Attribute:
Attribute_Label: STATE
Attribute_Definition: Two-letter state abbreviation.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute_Label: COUNTRY
Attribute_Definition: Three-letter country abbreviation.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Unrepresentable_Domain: Acceptable values change from atlas to atlas.

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

Enumerated_Domain:
    Enumerated_Domain_Value: T
    Enumerated_Domain_Value_Definition: Threatened on state list
    Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: C
        Enumerated_Domain_Value_Definition: Species of Special Concern
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
    Attribute_Label: F
    Attribute_Definition: Federal threatened or endangered status.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: E
            Enumerated_Domain_Value_Definition: Endangered on federal list
            Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: T
            Enumerated_Domain_Value_Definition: Threatened on federal list
            Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: C
            Enumerated_Domain_Value_Definition: Species of Special Concern
            Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
    Attribute_Label: I
    Attribute_Definition: International threatened or endangered status.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: E
            Enumerated_Domain_Value_Definition: Endangered on international list
            Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: T
            Enumerated_Domain_Value_Definition: Threatened on international list
            Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: C
            Enumerated_Domain_Value_Definition: Species of Special Concern
            Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
    Attribute_Label: S_DATE
    Attribute_Definition:
        Publication date of source material used to assign state status values for each

species, if used.
> *Attribute_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
>> *Enumerated_Domain:*
>>> *Enumerated_Domain_Value:* YYYYMM
>>> *Enumerated_Domain_Value_Definition:* YYYY for year and optionally MM for month
>>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

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

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

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

Distribution_Information:
> *Distributor:*
>> *Contact_Information:*

Contact_Person_Primary:
    Contact_Person: John Kaperick
    Contact_Organization: NOAA, Office of Response and Restoration
Contact_Address:
    Address_Type: Physical Address
    Address: 7600 Sand Point Way N.E.
    City: Seattle
    State_or_Province: Washington
    Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6400
Contact_Facsimile_Telephone: (206) 526-6329

Resource_Description:
ESI Atlas for Puget Sound and Strait of Juan de Fuca, Washington

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 a Geodatabase; ARC export, MOSS, and Shape files; and MARPLOT map folders. An ArcMap .mxd file, an ArcView 3.x ESI project, and an 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: 200607
    Metadata_Review_Date: 200607
    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

Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Puget Sound and Strait of Juan de Fuca, Washington: 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.
            Publication_Date: 200607
            Title:
                Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Puget Sound and Strait of Juan de Fuca, Washington: NESTS (Nest Points)
            Edition: First
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Puget Sound and Strait of Juan de Fuca, Washington
            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:
                Funding was provided by Navy Region Northwest. This data set was prepared by Concurrent Technologies Corporation, Bremerton, Washington, and Sound GIS, Seattle, Washington with support from 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.

Description:

    Abstract:

        This data set contains sensitive biological resource data for bald eagle, great blue heron, and seabird nesting sites in Puget Sound and Strait of Juan de Fuca, Washington. Vector points in this data set represent the 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 Puget Sound and Strait of Juan de Fuca. 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 Puget Sound and Strait of Juan de Fuca 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: 1978

            Ending_Date: 2005

    Currentness_Reference:

        The biological data were compiled during 2005-2006. The currentness dates for the data range from 1978 to 2005 and are documented in the Lineage section.

Status:

    Progress: Complete

    Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

    Bounding_Coordinates:

        West_Bounding_Coordinate: -124.75100

        East_Bounding_Coordinate: -122.12600

        North_Bounding_Coordinate: 49.00000

        South_Bounding_Coordinate: 47.00000

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: Nests

        Theme_Keyword: Birds

    Place:

Place_Keyword_Thesaurus: None

Place_Keyword: Puget Sound and Strait of Juan de Fuca, Washington

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 Puget Sound and Strait of Juan de Fuca, Washington ESI data.

Browse_Graphic_File_Type: JPEG

Data_Set_Credit:

This project was funded by Navy Region Northwest and supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 9.1) and SQL SERVER(r) (version 2000). The hardware configuration is PC's with Windows Operating System (2000/XP/2003).

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, habitatl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mampt.e00, mgt.e00, nests.e00, socecon.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report:

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

Logical_Consistency_Report:

A multi-stage error checking process, described in the above Attribute_Accuracy_Report, is used to verify both attribute accuracy and logical consistency throughout data production. This process includes multiple automated logical consistency checks that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and SQL SERVER(r) to ARC/INFO(r) consistencies. A final review is made by the GIS manager, where the data are written to CD-ROM and the metadata are written.

After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks. In the process of checking for topological and database consistencies, new ID's and RARNUM's or HUNUM's are also generated. The new ID's are a combination of atlas number, element number, and record number. In addition, the value used to represent the element is modified to reflect the type of feature being mapped. In the case of an element that is normally represented by a point or polygon, a value of 20 is added to the standard element value for mapping of linear features. In the case where an element usually mapped as a polygon is represented by a point, a value of 30 is added to the regular element value. The RARNUM's are also modified to include the atlas number, so multiple atlases can be combined and RARNUM's remain unique. RARNUM's are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUM's are also modified to include the atlas number.

Completeness_Report:

These data represent a synthesis of data on bird nesting sites. This information was adapted from Washington Department of Fish and Wildlife's (WDFW) Wildlife Heritage Database and Seabird Colony Database. Contact WDFW for additional information on these databases. See also the BIRDS (Bird Polygons) data layer, part of the larger Puget Sound and Strait of Juan de Fuca, Washington ESI database, for additional bird information. These data do not necessarily represent all nest occurrences in Puget Sound and Strait of Juan de Fuca. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 54, Great blue heron, Ardea herodias; 76, Bald eagle, Haliaeetus leucocephalus; 1022, Seabirds, n/a.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

Spatial components for the biological data layers can come from expert interviews, hardcopy, or digital sources. Some of the spatial components of the biological data layers may have been developed using regional experts who estimate concentration areas. It is difficult to estimate the positional accuracy of such data, except to state that they are compiled on hardcopy base maps with a scale of 1:24,000. Some of the spatial components of the biological data sets are developed from pre-existing digital or hardcopy sources and reflect the positional accuracy of these original data. See the Lineage and Process_Description sections for more information on the original data source and how these data were integrated or manipulated to create the final data set. Note that biological resource data by their very nature are considered "fuzzy", and this should be understood when considering the positional accuracy of vector digital objects representing these resources.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: QUINN, T. AND R. MILNER

Publication_Date: 2004

Title:

GREAT BLUE HERON (ARDEA HERODIAS), IN MANAGEMENT RECOMMENDATIONS FOR WASHINGTON'S PRIORITY SPECIES, VOLUME IV: BIRDS

Geospatial_Data_Presentation_Form: REPORT

Other_Citation_Details:

EDITORS: E.M. LARSEN, J.M. AZERRAD, AND N. NORDSTROM. ONLINE: <http://wdfw.wa.gov/hab/phs/vol4/gbheron.htm>

Type_of_Source_Media: ONLINE

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 2004

Source_Currentness_Reference: DATE OF PUBLICATION

Source_Citation_Abbreviation: NONE

Source_Contribution: NESTS INFORMATION

Source_Information:

Source_Citation:

Citation_Information:

Originator: U.S. GEOLOGICAL SURVEY

Publication_Date: 1989

Title: CATALOG OF WASHINGTON SEABIRD COLONIES

Geospatial_Data_Presentation_Form: REPORT

Other_Citation_Details:

SPEICH, S.M. AND T.R. WAHL. 1989. CATALOG OF WASHINGTON SEABIRD COLONIES. U.S. FISH AND WILDLIFE SERVICE BIOLOGICAL REPORT 88(6). 510 PP.; <http://www.nwrc.usgs.gov/wdb/pub/diglib/washington_seabird.htm>

Type_of_Source_Media: ONLINE

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1989

Source_Currentness_Reference: DATE OF PUBLICATION

Source_Citation_Abbreviation: NONE

Source_Contribution: NESTS INFORMATION

Source_Information:

Source_Citation:

Citation_Information:

Originator: WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

Publication_Date: 2005

Title: WILDLIFE HERITAGE DATABASE

Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA

Other_Citation_Details:

DATA CONTACT: GRETCHEN BLATZ (WASHINGTON DEPARTMENT OF FISH AND WILDLIFE, 600 CAPITOL WAY NORTH, OLYMPIA, WA 98501-1091, 360-902-2484)

Type_of_Source_Media: CD-ROM

Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1978

Ending_Date: 2005
Source_Currentness_Reference: GROUND CONDITION
Source_Citation_Abbreviation: NONE
Source_Contribution: NESTS INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: WASHINGTON DEPARTMENT OF FISH AND WILDLIFE
Publication_Date: 2005
Title: SEABIRD COLONY DATABASE
Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
Other_Citation_Details:
WASHINGTON DEPARTMENT OF FISH AND WILDLIFE, 600
CAPITOL WAY NORTH, OLYMPIA, WASHINGTON, 98501
Source_Scale_Denominator: VARIES
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 1989
Source_Currentness_Reference: DATE OF PUBLICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: NESTS INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: WATSON, J.W. AND E.A. RODRICK
Publication_Date: 2004
Title:
BALD EAGLE (HELIAEETUS LEUCOCEPHALUS), IN
MANAGEMENT RECOMMENDATIONS FOR WASHINGTON'S
PRIORITY SPECIES, VOLUME IV: BIRDS
Geospatial_Data_Presentation_Form: REPORT
Other_Citation_Details:
EDITORS: E.M. LARSEN, J.M. AZERRAD, AND N. NORDSTROM.
ONLINE: <http://wdfw.wa.gov/hab/phs/vol4/baldeagle.pdf>
Type_of_Source_Media: ONLINE
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 2004
Source_Currentness_Reference: DATE OF PUBLICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: NESTS INFORMATION
Process_Step:
Process_Description:
Two main sources of data were used to depict bird distribution for this data layer:
(1) Washington Department of Fish and Wildlife's (WDFW) Wildlife Heritage
database, and (2) WDFW's Seabird Colony database. From the WDFW Wildlife
Heritage data, we extracted points depicting bald eagle and great blue heron nesting
sites. From the WDFW Marine Seabird Colony database, we extracted all colony

locations and then grouped all species into a single seabird category. Nest locations were reviewed with the HYDRO (Hydrography Lines and Polygons) layer to assure that all nests occurred on land. Some nest locations were adjusted to conform to the HYDRO layer. Concentration and seasonality information was provided by resource experts, or was extracted from published sources, reports, and survey data.

The above digital and/or hardcopy sources were compiled by the project biologist to create the NESTS data layer. Depending on the type of source data, three general approaches are used for compiling a biology data layer: (1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles and digitized; (2) hardcopy maps are digitized at their source scale; (3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer.

Process_Date: 200603
Process_Contact:
    Contact_Information:
        Contact_Organization_Primary:
            Contact_Organization: Concurrent Technologies Corporation
            Contact_Person: Allison Bailey
        Contact_Address:
            Address_Type: Physical address
            Address: 5780 W. Werner Road
            City: Bremerton
            State_or_Province: Washington
            Postal_Code: 98312
        Contact_Voice_Telephone: (206) 459-2301
        Contact_Voice_Telephone: (360) 782-5500
        Contact_Facsimile_Telephone: (360) 782-5594
        Contact_Electronic_Mail_Address: allison@soundgis.com
Process_Step:
    Process_Description:
        The compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews are conducted to review the maps. If necessary, edits to the NESTS data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.
    Process_Date: 200605
    Process_Contact:
        Contact_Information:
            Contact_Organization_Primary:
                Contact_Organization: NOAA
                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: 1559

Spatial_Reference_Information:
    Horizontal_Coordinate_System_Definition:
        Geographic:
            Latitude_Resolution: 0.000001
            Longitude_Resolution: 0.000001
            Geographic_Coordinate_Units: Decimal degrees
        Geodetic_Model:
            Horizontal_Datum_Name: North American Datum of 1983
            Ellipsoid_Name: Geodetic Reference System 80
            Semi-major_Axis: 6378137.000000
            Denominator_of_Flattening_Ratio: 298.257222

Entity_and_Attribute_Information:
    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 Puget Sound and Strait of Juan de Fuca, Washington atlas, the number is 79), an element/layer specific number (BIRDS are layer 1, FISH are layer 2, etc.), and a unique record number. The RARNUM represents a unique combination of species, seasonalities, concentrations, and source information. For each of these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases. BIORES and the other relational data tables are described below in detail. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way these tables relate to the geographic data layers and other attribute tables in the ESI data structure.

            Due to the complexity of the relational database model, the data items are also post-processed into a flat file format. This table, called BIOFILE, may be used in place of the relational files described below to ease simple data queries. The items in the flat file are ELEMENT, SUBELEMENT, NAME, GEN_SPEC, S, F, NHP, DATE_PUB, CONC, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC, BREED1, BREED2, BREED3, BREED4, BREED5, RARNUM, G_SOURCE, S_SOURCE, and BREED. All of these items are the same as their counterparts in the individual data tables described below, except the BREED1-BREED5 and BREED items. BREED is a newly

generated variable used to link to the BREED_DT data table, a modified, more compact version of the relational BREED data table. BREED1-BREED5 give a text summary of when each life stage occurs within the associated map object. The life stages referred to are the same as those listed in the Detailed_Description of the BREED data table. The link to the BIOFILE may be made through the BIO_LUT, using ID to link to RARNUM, or BIOFILE may be linked directly to the RARNUM in each of the geographic layer's attribute data tables. As mentioned, BREED_DT is an auxiliary support data table to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item.

A second supporting data table is SOURCES. This is the same as the source file described above, and the link from the flat file is both G_SOURCE and S_SOURCE. It should be noted that although the flat file eases data query, it is not a normalized database structure, and actual updates performed by the states and other responsible agencies should be done using the relational data tables. The entity-relationship diagram, describing relationships between attribute tables in the ESI data structure, does NOT include the BIOFILE data table, and this data table is NOT described in detail below.

Detailed_Description:
    Entity_Type:
        Entity_Type_Label: NESTS.PAT
        Entity_Type_Definition:
            The NESTS.PAT table contains attribute information for the vector points in this data set representing locations of 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 (79), element number (5), and record number.
        Attribute_Definition_Source: NOAA
        Attribute_Domain_Values:
            Range_Domain:
                Range_Domain_Minimum: 0790500001
                Range_Domain_Maximum: 0790500559
    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: 079000001
                Range_Domain_Maximum: 079000003
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: 079000001

Range_Domain_Maximum: 079000797

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 (79), 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: 0790100002

Range_Domain_Maximum: 0793400327

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: 079000001

Range_Domain_Maximum: 079000797

Attribute:

    Attribute_Label: SPECIES_ID

    Attribute_Definition:

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

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Range_Domain:

            Range_Domain_Minimum: 1

            Range_Domain_Maximum: N

Attribute:

    Attribute_Label: CONC

    Attribute_Definition:

        The field CONC refers to "concentration," abundance, or density values. No
        concentration data were available for birds, so the CONC 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: alcid
        Enumerated_Domain_Value_Definition: Alcid
        Enumerated_Domain_Value_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: cephalopod

    Enumerated_Domain_Value_Definition: Cephalopod
    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: echinoderm
    Enumerated_Domain_Value_Definition: Echinoderm
    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: 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: kelp
    Enumerated_Domain_Value_Definition: Kelp
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: m_benthic
    Enumerated_Domain_Value_Definition: Marine benthic fish
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: m_pelagic
    Enumerated_Domain_Value_Definition: Marine pelagic fish
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: pelagic
    Enumerated_Domain_Value_Definition: Pelagic bird

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: pinniped
  Enumerated_Domain_Value_Definition: Pinniped
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: 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: sea otter
  Enumerated_Domain_Value_Definition: Sea otter
  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: shrimp
  Enumerated_Domain_Value_Definition: Shrimps
  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_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: 0
        Enumerated_Domain_Value_Definition: Date unspecified
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
    Attribute_Label: EL_SPE
    Attribute_Definition:
        Concatenation of ELEMENT and SPECIES_ID. This item links records in the
        SPECIES data table to records in the BIORES and STATUS data tables.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: E#####
            Enumerated_Domain_Value_Definition:
                Where E is the first character of ELEMENT and the next five characters
                are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1;
                EL_SPE = 'B00001').
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Detailed_Description:
    Entity_Type:
        Entity_Type_Label: SEASONAL
        Entity_Type_Definition:
            The data table SEASONAL contains information on the seasonal presence of each
            species associated with each spatial vector object. See the Browse_Graphic section
            for a link to the entity-relationship diagram, which describes the way this table
            relates to other attribute tables in the ESI data structure.
        Entity_Type_Definition_Source: Research Planning, Inc.
    Attribute:
        Attribute_Label: ELEMENT
        Attribute_Definition: Major categories of biological data.
        Attribute_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: BIRD
                Enumerated_Domain_Value_Definition: Birds
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: FISH
                Enumerated_Domain_Value_Definition: Fish
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:

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

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

Attribute:
    Attribute_Label: SEASON_ID
    Attribute_Definition:
        Numeric identifier for the unique monthly presence and life history characteristics
        of each species at a given location.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Range_Domain:
            Range_Domain_Minimum: 1
            Range_Domain_Maximum: N

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

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

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

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

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

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

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

Attribute:
    Attribute_Label: JUL
    Attribute_Definition: July
    Attribute_Definition_Source: Research Planning, Inc.

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

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

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

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

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

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

Attribute:

Attribute_Label: EL_SPE_SEA

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: E#######

Enumerated_Domain_Value_Definition:

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

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Detailed_Description:

Entity_Type:

Entity_Type_Label: BREED

Entity_Type_Definition:

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

Entity_Type_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: EL_SPE_SEA

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: E#######

Enumerated_Domain_Value_Definition:

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

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: MONTH

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 1

Range_Domain_Maximum: 12

Attribute:

Attribute_Label: BREED1

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: Y

        Enumerated_Domain_Value_Definition: Life-history stage or activity present

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: N

        Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: -

        Enumerated_Domain_Value_Definition:

            Breed category not used or not appropriate for record(s) in question

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

    Attribute_Label: BREED2

    Attribute_Definition:

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

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: Y

            Enumerated_Domain_Value_Definition: Life-history stage or activity present

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: N

            Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: -

            Enumerated_Domain_Value_Definition:

                Breed category not used or not appropriate for record(s) in question

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

    Attribute_Label: BREED3

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

Attribute_Definition_Source: Research Planning, Inc.

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

Attribute_Domain_Values:
> *Enumerated_Domain:*
>> *Enumerated_Domain_Value:* N
>> *Enumerated_Domain_Value_Definition:* Life-history stage or activity not
>> present or not reported
>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute_Domain_Values:
> *Enumerated_Domain:*
>> *Enumerated_Domain_Value:* -
>> *Enumerated_Domain_Value_Definition:*
>>> Breed category not used or not appropriate for record(s) in question
>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:

Attribute_Label: BREED4

Attribute_Definition:
> Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED4 =
> fledging; 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 HABITAT or T_MAMMAL elements.

Attribute_Definition_Source: Research Planning, Inc.

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

Attribute_Domain_Values:
> *Enumerated_Domain:*
>> *Enumerated_Domain_Value:* N
>> *Enumerated_Domain_Value_Definition:* Life-history stage or activity not
>> present or not reported
>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute_Domain_Values:
> *Enumerated_Domain:*
>> *Enumerated_Domain_Value:* -
>> *Enumerated_Domain_Value_Definition:*
>>> Breed category not used or not appropriate for record(s) in question
>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:

Attribute_Label: BREED5
Attribute_Definition:
    Life history stage or activity type, where: if ELEMENT is "FISH" then BREED5 =
    adults; if ELEMENT is "INVERT" then BREED5 = adults; if ELEMENT is
    "REPTILE" then BREED5 = adults. This attribute is not used for BIRD,
    M_MAMMAL, HABITAT, or T_MAMMAL elements.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: Y
        Enumerated_Domain_Value_Definition: Life-history stage or activity present
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: N
        Enumerated_Domain_Value_Definition: Life-history stage or activity not
        present or not reported
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: -
        Enumerated_Domain_Value_Definition:
            Breed category not used or not appropriate for record(s) in question
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Detailed_Description:
    Entity_Type:
        Entity_Type_Label: SOURCES
        Entity_Type_Definition:
            The data table SOURCES contains the primary sources used to create the ESI data
            set. See the Browse_Graphic section for a link to the entity-relationship diagram,
            which describes the way this table relates to other attribute tables in the ESI data
            structure.
        Entity_Type_Definition_Source: Research Planning, Inc.
    Attribute:
        Attribute_Label: SOURCE_ID
        Attribute_Definition:
            Source identifier that links records in the SOURCES data table to the items
            G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and
            S_SOURCE in the BIORES table; and SOURCE_ID in the ESI, HYDRO, and
            SOCECON data layers.
        Attribute_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Range_Domain:
                Range_Domain_Minimum: 1
                Range_Domain_Maximum: N
    Attribute:
        Attribute_Label: ORIGINATOR
        Attribute_Definition: Author or developer of source material or data set.
        Attribute_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

    Attribute_Label: DATE_PUB

    Attribute_Definition:

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

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: YYYYMM

            Enumerated_Domain_Value_Definition: YYYY for year and optionally MM for month

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

    Attribute_Label: TITLE

    Attribute_Definition: Title of source material or data.

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

    Attribute_Label: DATA_FORMAT

    Attribute_Definition: The format of the source material.

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

    Attribute_Label: PUBLICATION

    Attribute_Definition: Additional citation information.

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

    Attribute_Label: SCALE

    Attribute_Definition: Description of the source scale.

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

    Attribute_Label: TIME_PERIOD

    Attribute_Definition:

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

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Detailed_Description:

    Entity_Type:

    Entity_Type_Label: STATUS

    Entity_Type_Definition:

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

Entity_Type_Definition_Source: Research Planning, Inc.
Attribute:
 Attribute_Label: ELEMENT
 Attribute_Definition: Major categories of biological data.
 Attribute_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: BIRD
   Enumerated_Domain_Value_Definition: Birds
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: FISH
   Enumerated_Domain_Value_Definition: Fish
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: HABITAT
   Enumerated_Domain_Value_Definition: Habitats and Plants
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: INVERT
   Enumerated_Domain_Value_Definition: Invertebrates
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: M_MAMMAL
   Enumerated_Domain_Value_Definition: Marine Mammals
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: REPTILE
   Enumerated_Domain_Value_Definition: Reptiles and Amphibians
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: T_MAMMAL
   Enumerated_Domain_Value_Definition: Terrestrial Mammals
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
 Attribute_Label: SPECIES_ID
 Attribute_Definition:
  Numeric identifier for each species that is unique within each element and refers to a
  nationwide master ESI species list maintained at NOAA.
 Attribute_Definition_Source: Research Planning, Inc.
 Attribute_Domain_Values:
  Range_Domain:
   Range_Domain_Minimum: 1
   Range_Domain_Maximum: N
Attribute:

Attribute_Label: STATE
Attribute_Definition: Two-letter state abbreviation.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Unrepresentable_Domain: Acceptable values change from atlas to atlas.
Attribute:
Attribute_Label: COUNTRY
Attribute_Definition: Three-letter country abbreviation.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Unrepresentable_Domain: Acceptable values change from atlas to atlas.
Attribute:
Attribute_Label: S
Attribute_Definition: State threatened or endangered status.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: E
        Enumerated_Domain_Value_Definition: Endangered on state list
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: T
        Enumerated_Domain_Value_Definition: Threatened on state list
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: C
        Enumerated_Domain_Value_Definition: Species of Special Concern
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute:
Attribute_Label: F
Attribute_Definition: Federal threatened or endangered status.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: E
        Enumerated_Domain_Value_Definition: Endangered on federal list
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: T
        Enumerated_Domain_Value_Definition: Threatened on federal list
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: C
        Enumerated_Domain_Value_Definition: Species of Special Concern
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute:
Attribute_Label: I

Attribute_Definition: International threatened or endangered status.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: E
        Enumerated_Domain_Value_Definition: Endangered on international list
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: T
        Enumerated_Domain_Value_Definition: Threatened on international list
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: C
        Enumerated_Domain_Value_Definition: Species of Special Concern
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute:
    Attribute_Label: S_DATE
    Attribute_Definition:
        Publication date of source material used to assign state status values for each
        species, if used.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: YYYYMM
            Enumerated_Domain_Value_Definition: YYYY for year and optionally MM
            for month
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
    Attribute_Label: F_DATE
    Attribute_Definition:
        Publication date of source material used to assign federal status values for each
        species, if used.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: YYYYMM
            Enumerated_Domain_Value_Definition: YYYY for year and optionally MM
            for month
             Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
    Attribute_Label: I_DATE
    Attribute_Definition:
        Publication date of source material used to assign international status values for each
        species, if used.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: YYYYMM
            Enumerated_Domain_Value_Definition: YYYY for year and optionally MM

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

Distribution_Information:
 Distributor:
  Contact_Information:
   Contact_Person_Primary:
    Contact_Person: John Kaperick
    Contact_Organization: NOAA, Office of Response and Restoration
   Contact_Address:
    Address_Type: Physical Address
    Address: 7600 Sand Point Way N.E.
    City: Seattle
    State_or_Province: Washington
    Postal_Code: 98115-6349
   Contact_Voice_Telephone: (206) 526-6400
   Contact_Facsimile_Telephone: (206) 526-6329
 Resource_Description:
  ESI Atlas for Puget Sound and Strait of Juan de Fuca, Washington
 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 a Geodatabase; ARC export, MOSS, and Shape files; and MARPLOT map folders. An ArcMap .mxd file, an ArcView 3.x ESI project, and an 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: 200607
    Metadata_Review_Date: 200607
    Metadata_Contact:
        Contact_Information:
            Contact_Person_Primary:
                Contact_Person: Jill Petersen
                Contact_Organization: NOAA, Office of Response and Restoration
            Contact_Position: GIS Manager
            Contact_Address:
                Address_Type: Physical Address
                Address: 7600 Sand Point Way N.E.
                City: Seattle
                State_or_Province: Washington
                Postal_Code: 98115-6349
            Contact_Voice_Telephone: (206) 526-6944
            Contact_Facsimile_Telephone: (206) 526-6329
            Contact_Electronic_Mail_Address: Jill.Petersen@noaa.gov
    Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
    Metadata_Standard_Version: FGDC-STD-001-1998

Generated by mp version 2.8.21 on Mon Jul 24 12:24:28 2006

Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Puget Sound and Strait of Juan de Fuca, Washington: 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.
>>> *Publication_Date:* 200607
>>> *Title:*
>>>> Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Puget Sound and Strait of Juan de Fuca, Washington: FISH (Fish Polygons)
>>> *Edition:* First
>>> *Geospatial_Data_Presentation_Form:* Vector digital data
>>> *Series_Information:*
>>>> *Series_Name:* None
>>>> *Issue_Identification:* Puget Sound and Strait of Juan de Fuca, Washington
>>> *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:*
>>>> Funding was provided by Navy Region Northwest. This data set was prepared by Concurrent Technologies Corporation, Bremerton, Washington, and Sound GIS, Seattle, Washington with support from 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.

Description:

    Abstract:

        This data set contains sensitive biological resource data for forage fish in Puget Sound and Strait of Juan de Fuca, Washington. Vector polygons in this data set represent herring spawning and pre-spawner holding areas. Species-specific abundance, seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer.

        This data set comprises a portion of the Environmental Sensitivity Index (ESI) data for Puget Sound and Strait of Juan de Fuca, Washington. 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 Puget Sound and Strait of Juan de Fuca 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: 1992

            Ending_Date: 2005

    Currentness_Reference:

        The biological data were compiled during 2005-2006. The currentness dates for the data range from 1992 to 2005 and are documented in the Lineage section.

Status:

    Progress: Complete

    Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

    Bounding_Coordinates:

        West_Bounding_Coordinate: -124.75100

        East_Bounding_Coordinate: -122.12600

        North_Bounding_Coordinate: 49.00000

        South_Bounding_Coordinate: 47.00000

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: Puget Sound and Strait of Juan de Fuca, Washington

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 Puget Sound and Strait of Juan de Fuca, Washington ESI data.

Browse_Graphic_File_Type: JPEG

Data_Set_Credit:

This project was funded by Navy Region Northwest and supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 9.1) and SQL SERVER(r) (version 2000). The hardware configuration is PC's with Windows Operating System (2000/XP/2003).

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, habitatl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mampt.e00, mgt.e00, nests.e00, socecon.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report:

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

Logical_Consistency_Report:

A multi-stage error checking process, described in the above Attribute_Accuracy_Report, is used to verify both attribute accuracy and logical consistency throughout data production. This process includes multiple automated logical consistency checks that test the files for missing or

duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and SQL SERVER(r) to ARC/INFO(r) consistencies. A final review is made by the GIS manager, where the data are written to CD-ROM and the metadata are written.

After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks. In the process of checking for topological and database consistencies, new ID's and RARNUM's or HUNUM's are also generated. The new ID's are a combination of atlas number, element number, and record number. In addition, the value used to represent the element is modified to reflect the type of feature being mapped. In the case of an element that is normally represented by a point or polygon, a value of 20 is added to the standard element value for mapping of linear features. In the case where an element usually mapped as a polygon is represented by a point, a value of 30 is added to the regular element value. The RARNUM's are also modified to include the atlas number, so multiple atlases can be combined and RARNUM's remain unique. RARNUM's are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUM's are also modified to include the atlas number.

Completeness_Report:
These data represent a synthesis of data on herring spawn and pre-spawner holding areas. The information was adapted from WDFW's Marine Species database. See also the FISHL (Fish Lines) data layer, part of the larger Puget Sound and Strait of Juan de Fuca, Washington ESI database, for additional fish information. These data do not necessarily represent all forage fish occurrences in Puget Sound and Strait of Juan de Fuca. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 66, Pacific herring, Clupea pallasii pallasii.
Positional_Accuracy:
   Horizontal_Positional_Accuracy:
      Horizontal_Positional_Accuracy_Report:
         Spatial components for the biological data layers can come from expert interviews, hardcopy, or digital sources. Some of the spatial components of the biological data layers may have been developed using regional experts who estimate concentration areas. It is difficult to estimate the positional accuracy of such data, except to state that they are compiled on hardcopy base maps with a scale of 1:24,000. Some of the spatial components of the biological data sets are developed from pre-existing digital or hardcopy sources and reflect the positional accuracy of these original data. See the Lineage and Process_Description sections for more information on the original data source and how these data were integrated or manipulated to create the final data set. Note that biological resource data by their very nature are considered "fuzzy", and this should be understood when considering the positional accuracy of vector digital objects representing these resources.
Lineage:
   Source_Information:
      Source_Citation:
         Citation_Information:
            Originator: STICK, K.C.
            Publication_Date: 2005
            Title: 2004 WASHINGTON STATE HERRING STOCK STATUS REPORT
            Geospatial_Data_Presentation_Form: REPORT
            Other_Citation_Details:
               WASHINGTON DEPARTMENT OF FISH AND WILDLIFE, FISH PROGRAM, FISH MANAGEMENT DIVISION. OLYMPIA, WA. ONLINE:

<http://wdfw.wa.gov/fish/papers/herring_status_report/2004_herring_stoc

Type_of_Source_Media: ONLINE
Source_Time_Period_of_Content:
    Time_Period_Information:
        Single_Date/Time:
            Calendar_Date: 2005
    Source_Currentness_Reference: DATE OF PUBLICATIONS
Source_Citation_Abbreviation: NONE
Source_Contribution: FISH INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: WASHINGTON DEPARTMENT OF FISH AND WILDLIFE
            Publication_Date: 2005
            Title:
                MARINE FINFISH, SHELLFISH AND BASELINE GIS
                COVERAGES, PUBLISHED MAP FILES AND THE WEB VERSION
                OF TECHNICAL REPORT 79
            Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
            Other_Citation_Details:
                DATA CONTACT: DALE GOMBERT (WASHINGTON
                DEPARTMENT OF FISH AND WILDLIFE, 425-379-2317)
    Source_Scale_Denominator: VARIES
    Type_of_Source_Media: CD-ROM
    Source_Time_Period_of_Content:
        Time_Period_Information:
            Range_of_Dates/Times:
                Beginning_Date: 1992
                Ending_Date: 2005
        Source_Currentness_Reference: GROUND CONDITION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: FISH INFORMATION
Process_Step:
    Process_Description:
        The data source used to depict herring locations for this data layer was the
        Washington Department of Fish and Wildlife's (WDFW) Marine Species database.
        From this database, we extracted polygons delineating herring spawn areas and
        pre-spawner holding areas. Due to variation in shoreline delineation, the FISH
        polygons were clipped to the water portions of the HYDRO (Hydrography Lines
        and Polygons) layer. Concentration and seasonality information was provided by
        resource experts, or was extracted from published sources, reports, and survey data.

        The above digital and/or hardcopy sources were compiled by the project biologist to
        create the FISH data layer. Depending on the type of source data, three general
        approaches are used for compiling a biology data layer: (1) information gathered
        during initial interviews and from hardcopy sources are compiled onto U.S.
        Geological Survey 1:24,000 topographic quadrangles and digitized; (2) hardcopy
        maps are digitized at their source scale; (3) digital data layers are evaluated and used
        "as is" or integrated with the hardcopy data sources. See the Lineage section for
        additional information on the type of source data for this data layer.

Process_Date: 200603
Process_Contact:
 Contact_Information:
 Contact_Organization_Primary:
 Contact_Organization: Concurrent Technologies Corporation
 Contact_Person: Allison Bailey
 Contact_Address:
 Address_Type: Physical address
 Address: 5780 W. Werner Road
 City: Bremerton
 State_or_Province: Washington
 Postal_Code: 98312
 Contact_Voice_Telephone: (206) 459-2301
 Contact_Voice_Telephone: (360) 782-5500
 Contact_Facsimile_Telephone: (360) 782-5594
 Contact_Electronic_Mail_Address: allison@soundgis.com
Process_Step:
 Process_Description:
 The compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. If necessary, edits to the FISH data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.
 Process_Date: 200605
 Process_Contact:
 Contact_Information:
 Contact_Organization_Primary:
 Contact_Organization: NOAA
 Contact_Person: Jill Petersen
 Contact_Address:
 Address_Type: Physical address
 Address: 7600 Sand Point Way N.E.
 City: Seattle
 State_or_Province: Washington
 Postal_Code: 98115-6349
 Contact_Voice_Telephone: (206) 526-6944
 Contact_Facsimile_Telephone: (206) 526-6329
 Contact_Electronic_Mail_Address: Jill.Petersen@noaa.gov

Spatial_Data_Organization_Information:
 Direct_Spatial_Reference_Method: Vector
 Point_and_Vector_Object_Information:
 SDTS_Terms_Description:
 SDTS_Point_and_Vector_Object_Type: GT-polygon composed of chains
 Point_and_Vector_Object_Count: 116
 SDTS_Terms_Description:
 SDTS_Point_and_Vector_Object_Type: Area point
 Point_and_Vector_Object_Count: 117
 SDTS_Terms_Description:
 SDTS_Point_and_Vector_Object_Type: Complete chain

Point_and_Vector_Object_Count: 161
SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 41130
SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 159

Spatial_Reference_Information:
Horizontal_Coordinate_System_Definition:
Geographic:
Latitude_Resolution: 0.000001
Longitude_Resolution: 0.000001
Geographic_Coordinate_Units: Decimal degrees
Geodetic_Model:
Horizontal_Datum_Name: North American Datum of 1983
Ellipsoid_Name: Geodetic Reference System 80
Semi-major_Axis: 6378137.000000
Denominator_of_Flattening_Ratio: 298.257222

Entity_and_Attribute_Information:
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 Puget Sound and Strait of Juan de Fuca atlas, the number is 79), an element/layer specific number (BIRDS are layer 1, FISH are layer 2, etc.), and a unique record number. The RARNUM represents a unique combination of species, seasonalities, concentrations, and source information. For each of these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases. BIORES and the other relational data tables are described below in detail. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way these tables relate to the geographic data layers and other attribute tables in the ESI data structure.

Due to the complexity of the relational database model, the data items are also post-processed into a flat file format. This table, called BIOFILE, may be used in place of the relational files described below to ease simple data queries. The items in the flat file are ELEMENT, SUBELEMENT, NAME, GEN_SPEC, S, F, NHP, DATE_PUB, CONC, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC, BREED1, BREED2, BREED3, BREED4, BREED5, RARNUM, G_SOURCE, S_SOURCE, and BREED. All of these items are the same as their counterparts in the individual data tables described below, except the BREED1-BREED5 and BREED items. BREED is a newly generated variable used to link to the BREED_DT data table, a modified, more compact version of the relational BREED data table. BREED1-BREED5 give a text summary of

when each life stage occurs within the associated map object. The life stages referred to are the same as those listed in the Detailed_Description of the BREED data table. The link to the BIOFILE may be made through the BIO_LUT, using ID to link to RARNUM, or BIOFILE may be linked directly to the RARNUM in each of the geographic layer's attribute data tables. As mentioned, BREED_DT is an auxiliary support data table to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item. A second supporting data table is SOURCES. This is the same as the source file described above, and the link from the flat file is both G_SOURCE and S_SOURCE. It should be noted that although the flat file eases data query, it is not a normalized database structure, and actual updates performed by the states and other responsible agencies should be done using the relational data tables. The entity-relationship diagram, describing relationships between attribute tables in the ESI data structure, does NOT include the BIOFILE data table, and this data table is NOT described in detail below.

Detailed_Description:
    Entity_Type:
        Entity_Type_Label: FISH.PAT
        Entity_Type_Definition:
            The FISH.PAT table contains attribute information for the vector polygons in this data set representing herring spawning and pre-spawner holding 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 (79), 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: 0790200002
                Range_Domain_Maximum: 0790200117
    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: 079000399
                Range_Domain_Maximum: 079000400
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: 079000001

Range_Domain_Maximum: 079000797

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 (79), 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: 0790100002

Range_Domain_Maximum: 0793400327

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: 079000001

Range_Domain_Maximum: 079000797

Attribute:

Attribute_Label: SPECIES_ID

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 1

Range_Domain_Maximum: N

Attribute:

Attribute_Label: CONC

Attribute_Definition:

The field CONC refers to "concentration," abundance, or density values. No concentration data were available for 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: alcid
       Enumerated_Domain_Value_Definition: Alcid
       Enumerated_Domain_Value_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: cephalopod
       Enumerated_Domain_Value_Definition: Cephalopod
       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: echinoderm
        Enumerated_Domain_Value_Definition: Echinoderm
        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: 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: kelp
        Enumerated_Domain_Value_Definition: Kelp
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: m_benthic
        Enumerated_Domain_Value_Definition: Marine benthic fish
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: m_pelagic
        Enumerated_Domain_Value_Definition: Marine pelagic fish
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: pelagic
        Enumerated_Domain_Value_Definition: Pelagic bird
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:
    Enumerated_Domain_Value: pinniped
    Enumerated_Domain_Value_Definition: Pinniped
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: 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: sea otter
        Enumerated_Domain_Value_Definition: Sea otter
        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: shrimp
        Enumerated_Domain_Value_Definition: Shrimps
        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_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: 0
        Enumerated_Domain_Value_Definition: Date unspecified
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
    Attribute_Label: EL_SPE
    Attribute_Definition:
        Concatenation of ELEMENT and SPECIES_ID. This item links records in the
        SPECIES data table to records in the BIORES and STATUS data tables.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: E#####
            Enumerated_Domain_Value_Definition:
                Where E is the first character of ELEMENT and the next five characters
                are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1;
                EL_SPE = 'B00001').
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Detailed_Description:
    Entity_Type:
        Entity_Type_Label: SEASONAL
        Entity_Type_Definition:
            The data table SEASONAL contains information on the seasonal presence of each
            species associated with each spatial vector object. See the Browse_Graphic section
            for a link to the entity-relationship diagram, which describes the way this table
            relates to other attribute tables in the ESI data structure.
        Entity_Type_Definition_Source: Research Planning, Inc.
    Attribute:
        Attribute_Label: ELEMENT
        Attribute_Definition: Major categories of biological data.
        Attribute_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: BIRD
                Enumerated_Domain_Value_Definition: Birds
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: FISH
                Enumerated_Domain_Value_Definition: Fish
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: HABITAT

Enumerated_Domain_Value_Definition: Habitats and Plants

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: INVERT

Enumerated_Domain_Value_Definition: Invertebrates

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: M_MAMMAL

Enumerated_Domain_Value_Definition: Marine Mammals

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: REPTILE

Enumerated_Domain_Value_Definition: Reptiles and Amphibians

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: T_MAMMAL

Enumerated_Domain_Value_Definition: Terrestrial Mammals

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: SPECIES_ID

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 1

Range_Domain_Maximum: N

Attribute:

Attribute_Label: SEASON_ID

Attribute_Definition:

Numeric identifier for the unique monthly presence and life history characteristics of each species at a given location.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 1

Range_Domain_Maximum: N

Attribute:

Attribute_Label: JAN

Attribute_Definition: January

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: X

Enumerated_Domain_Value_Definition: Present in January

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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

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

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

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

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

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

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

> *Attribute:*
>> *Attribute_Label:* EL_SPE_SEA
>> *Attribute_Definition:*

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: E#######

Enumerated_Domain_Value_Definition:

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

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Detailed_Description:

Entity_Type:

Entity_Type_Label: BREED

Entity_Type_Definition:

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

Entity_Type_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: EL_SPE_SEA

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: E#######

Enumerated_Domain_Value_Definition:

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

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: MONTH

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 1

Range_Domain_Maximum: 12

Attribute:

Attribute_Label: BREED1

Attribute_Definition:

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED1 = nesting; if ELEMENT is "FISH" then BREED1 = spawning; if ELEMENT is

"INVERT" then BREED1 = spawning; if ELEMENT is "REPTILE" then BREED1 = nesting; if ELEMENT is "M_MAMMAL" then BREED1 = mating. This attribute is not used for HABITAT or T_MAMMAL element.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: Y

        Enumerated_Domain_Value_Definition: Life-history stage or activity present

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: N

        Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: -

        Enumerated_Domain_Value_Definition:

            Breed category not used or not appropriate for record(s) in question

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

    Attribute_Label: BREED2

    Attribute_Definition:

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

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: Y

            Enumerated_Domain_Value_Definition: Life-history stage or activity present

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: N

            Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: -

            Enumerated_Domain_Value_Definition:

                Breed category not used or not appropriate for record(s) in question

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

    Attribute_Label: BREED3

    Attribute_Definition:

        Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED3 =

hatching; if ELEMENT is "FISH" then BREED3 = larvae; if ELEMENT is "INVERT" then BREED3 = larvae; if ELEMENT is "REPTILE" then BREED3 = internesting; if ELEMENT is "M_MAMMAL" then BREED3 = pupping. This attribute is not used for HABITAT or T_MAMMAL elements.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

   Enumerated_Domain:

      Enumerated_Domain_Value: Y

      Enumerated_Domain_Value_Definition: Life-history stage or activity present

      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

   Enumerated_Domain:

      Enumerated_Domain_Value: N

      Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported

      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

   Enumerated_Domain:

      Enumerated_Domain_Value: -

      Enumerated_Domain_Value_Definition:

         Breed category not used or not appropriate for record(s) in question

      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

   Attribute_Label: BREED4

   Attribute_Definition:

      Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED4 = fledging; 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 HABITAT or T_MAMMAL elements.

   Attribute_Definition_Source: Research Planning, Inc.

   Attribute_Domain_Values:

      Enumerated_Domain:

         Enumerated_Domain_Value: Y

         Enumerated_Domain_Value_Definition: Life-history stage or activity present

         Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

   Attribute_Domain_Values:

      Enumerated_Domain:

         Enumerated_Domain_Value: N

         Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported

         Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

   Attribute_Domain_Values:

      Enumerated_Domain:

         Enumerated_Domain_Value: -

         Enumerated_Domain_Value_Definition:

            Breed category not used or not appropriate for record(s) in question

         Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

   Attribute_Label: BREED5

   Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Y

Enumerated_Domain_Value_Definition: Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: N

Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: -

Enumerated_Domain_Value_Definition:

Breed category not used or not appropriate for record(s) in question

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Detailed_Description:

Entity_Type:

Entity_Type_Label: SOURCES

Entity_Type_Definition:

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

Entity_Type_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: SOURCE_ID

Attribute_Definition:

Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; and SOURCE_ID in the ESI, HYDRO, and SOCECON data layers.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 1

Range_Domain_Maximum: N

Attribute:

Attribute_Label: ORIGINATOR

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: DATE_PUB

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: YYYYMM

Enumerated_Domain_Value_Definition: YYYY for year and optionally MM for month

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: TITLE

Attribute_Definition: Title of source material or data.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: DATA_FORMAT

Attribute_Definition: The format of the source material.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: PUBLICATION

Attribute_Definition: Additional citation information.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: SCALE

Attribute_Definition: Description of the source scale.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: TIME_PERIOD

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Detailed_Description:

Entity_Type:

Entity_Type_Label: STATUS

Entity_Type_Definition:

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

Entity_Type_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: ELEMENT
Attribute_Definition: Major categories of biological data.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: BIRD
  Enumerated_Domain_Value_Definition: Birds
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: FISH
  Enumerated_Domain_Value_Definition: Fish
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: HABITAT
  Enumerated_Domain_Value_Definition: Habitats and Plants
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: INVERT
  Enumerated_Domain_Value_Definition: Invertebrates
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: M_MAMMAL
  Enumerated_Domain_Value_Definition: Marine Mammals
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: REPTILE
  Enumerated_Domain_Value_Definition: Reptiles and Amphibians
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: T_MAMMAL
  Enumerated_Domain_Value_Definition: Terrestrial Mammals
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: SPECIES_ID
Attribute_Definition:
 Numeric identifier for each species that is unique within each element and refers to a
 nationwide master ESI species list maintained at NOAA.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Range_Domain:
  Range_Domain_Minimum: 1
  Range_Domain_Maximum: N
Attribute:
Attribute_Label: STATE
Attribute_Definition: Two-letter state abbreviation.

Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　　Unrepresentable_Domain: Acceptable values change from atlas to atlas.
Attribute:
　Attribute_Label: COUNTRY
　Attribute_Definition: Three-letter country abbreviation.
　Attribute_Definition_Source: Research Planning, Inc.
　Attribute_Domain_Values:
　　Unrepresentable_Domain: Acceptable values change from atlas to atlas.
Attribute:
　Attribute_Label: S
　Attribute_Definition: State threatened or endangered status.
　Attribute_Definition_Source: Research Planning, Inc.
　Attribute_Domain_Values:
　　Enumerated_Domain:
　　　Enumerated_Domain_Value: E
　　　Enumerated_Domain_Value_Definition: Endangered on state list
　　　Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
　Attribute_Domain_Values:
　　Enumerated_Domain:
　　　Enumerated_Domain_Value: T
　　　Enumerated_Domain_Value_Definition: Threatened on state list
　　　Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
　Attribute_Domain_Values:
　　Enumerated_Domain:
　　　Enumerated_Domain_Value: C
　　　Enumerated_Domain_Value_Definition: Species of Special Concern
　　　Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute:
　Attribute_Label: F
　Attribute_Definition: Federal threatened or endangered status.
　Attribute_Definition_Source: Research Planning, Inc.
　Attribute_Domain_Values:
　　Enumerated_Domain:
　　　Enumerated_Domain_Value: E
　　　Enumerated_Domain_Value_Definition: Endangered on federal list
　　　Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
　Attribute_Domain_Values:
　　Enumerated_Domain:
　　　Enumerated_Domain_Value: T
　　　Enumerated_Domain_Value_Definition: Threatened on federal list
　　　Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
　Attribute_Domain_Values:
　　Enumerated_Domain:
　　　Enumerated_Domain_Value: C
　　　Enumerated_Domain_Value_Definition: Species of Special Concern
　　　Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute:
　Attribute_Label: I
　Attribute_Definition: International threatened or endangered status.
　Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
>   *Enumerated_Domain:*
>>   *Enumerated_Domain_Value:* E
>>   *Enumerated_Domain_Value_Definition:* Endangered on international list
>>   *Enumerated_Domain_Value_Definition_Source:* NOAA ESI Guidelines

Attribute_Domain_Values:
>   *Enumerated_Domain:*
>>   *Enumerated_Domain_Value:* T
>>   *Enumerated_Domain_Value_Definition:* Threatened on international list
>>   *Enumerated_Domain_Value_Definition_Source:* NOAA ESI Guidelines

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

Attribute:

>   *Attribute_Label:* S_DATE
>   *Attribute_Definition:*
>>   Publication date of source material used to assign state status values for each
>>   species, if used.
>   *Attribute_Definition_Source:* Research Planning, Inc.
>   *Attribute_Domain_Values:*
>>   *Enumerated_Domain:*
>>>   *Enumerated_Domain_Value:* YYYYMM
>>>   *Enumerated_Domain_Value_Definition:* YYYY for year and optionally MM
>>>   for month
>>>   *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:

>   *Attribute_Label:* F_DATE
>   *Attribute_Definition:*
>>   Publication date of source material used to assign federal status values for each
>>   species, if used.
>   *Attribute_Definition_Source:* Research Planning, Inc.
>   *Attribute_Domain_Values:*
>>   *Enumerated_Domain:*
>>>   *Enumerated_Domain_Value:* YYYYMM
>>>   *Enumerated_Domain_Value_Definition:* YYYY for year and optionally MM
>>>   for month
>>>   *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:

>   *Attribute_Label:* I_DATE
>   *Attribute_Definition:*
>>   Publication date of source material used to assign international status values for each
>>   species, if used.
>   *Attribute_Definition_Source:* Research Planning, Inc.
>   *Attribute_Domain_Values:*
>>   *Enumerated_Domain:*
>>>   *Enumerated_Domain_Value:* YYYYMM
>>>   *Enumerated_Domain_Value_Definition:* YYYY for year and optionally MM
>>>   for month
>>>   *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

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

Distribution_Information:
> *Distributor:*
>> *Contact_Information:*
>>> *Contact_Person_Primary:*
>>>> *Contact_Person:* John Kaperick
>>>> *Contact_Organization:* NOAA, Office of Response and Restoration
>>> *Contact_Address:*
>>>> *Address_Type:* Physical Address
>>>> *Address:* 7600 Sand Point Way N.E.
>>>> *City:* Seattle
>>>> *State_or_Province:* Washington
>>>> *Postal_Code:* 98115-6349
>>> *Contact_Voice_Telephone:* (206) 526-6400
>>> *Contact_Facsimile_Telephone:* (206) 526-6329
> *Resource_Description:*
>> ESI Atlas for Puget Sound and Strait of Juan de Fuca, Washington
> *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 a Geodatabase; ARC export, MOSS, and Shape files; and MARPLOT map folders. An ArcMap .mxd file, an ArcView 3.x ESI project, and an 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: 200607
Metadata_Review_Date: 200607
Metadata_Contact:
    Contact_Information:
        Contact_Person_Primary:
            Contact_Person: Jill Petersen
            Contact_Organization: NOAA, Office of Response and Restoration
        Contact_Position: GIS Manager
        Contact_Address:
            Address_Type: Physical Address
            Address: 7600 Sand Point Way N.E.
            City: Seattle
            State_or_Province: Washington
            Postal_Code: 98115-6349
        Contact_Voice_Telephone: (206) 526-6944
        Contact_Facsimile_Telephone: (206) 526-6329
        Contact_Electronic_Mail_Address: Jill.Petersen@noaa.gov
Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998

Generated by mp version 2.8.21 on Mon Jul 24 12:28:16 2006

Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Puget Sound and Strait of Juan de Fuca, Washington: 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.
>>> *Publication_Date:* 200607
>>> *Title:*
>>>> Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Puget Sound and Strait of Juan de Fuca, Washington: FISHL (Fish Lines)
>>> *Edition:* First
>>> *Geospatial_Data_Presentation_Form:* Vector digital data
>>> *Series_Information:*
>>>> *Series_Name:* None
>>>> *Issue_Identification:* Puget Sound and Strait of Juan de Fuca, Washington
>>> *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:*
>>>> Funding was provided by Navy Region Northwest. This data set was prepared by Concurrent Technologies Corporation, Bremerton, Washington, and Sound GIS, Seattle, Washington with support from 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.

Description:

    Abstract:

This data set contains sensitive biological resource data for marine, estuarine, and anadromous fish in Puget Sound and Strait of Juan de Fuca, Washington. Vector lines in this data set represent anadromous fish spawning runs and spawning beaches for forage fish. 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 Puget Sound and Strait of Juan de Fuca, Washington. 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 Puget Sound and Strait of Juan de Fuca 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: 1990

            Ending_Date: 2005

    Currentness_Reference:

The biological data were compiled during 2005-2006. The currentness dates for the data range from 1990 to 2005 and are documented in the Lineage section.

Status:

    Progress: Complete

    Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

    Bounding_Coordinates:

        West_Bounding_Coordinate: -124.75100

        East_Bounding_Coordinate: -122.12600

        North_Bounding_Coordinate: 49.00000

        South_Bounding_Coordinate: 47.00000

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: Puget Sound and Strait of Juan de Fuca, Washington

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 Puget Sound and Strait of Juan de Fuca, Washington ESI data.
>
> *Browse_Graphic_File_Type:* JPEG

Data_Set_Credit:

> This project was funded by Navy Region Northwest and supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.

Native_Data_Set_Environment:

> The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 9.1) and SQL SERVER(r) (version 2000). The hardware configuration is PC's with Windows Operating System (2000/XP/2003).
>
> 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, habitatl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mampt.e00, mgt.e00, nests.e00, socecon.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

Data_Quality_Information:

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

process includes multiple automated logical consistency checks that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and SQL SERVER(r) to ARC/INFO(r) consistencies. A final review is made by the GIS manager, where the data are written to CD-ROM and the metadata are written.

After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks. In the process of checking for topological and database consistencies, new ID's and RARNUM's or HUNUM's are also generated. The new ID's are a combination of atlas number, element number, and record number. In addition, the value used to represent the element is modified to reflect the type of feature being mapped. In the case of an element that is normally represented by a point or polygon, a value of 20 is added to the standard element value for mapping of linear features. In the case where an element usually mapped as a polygon is represented by a point, a value of 30 is added to the regular element value. The RARNUM's are also modified to include the atlas number, so multiple atlases can be combined and RARNUM's remain unique. RARNUM's are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUM's are also modified to include the atlas number.

Completeness_Report:

These data represent a synthesis of digital data on salmonid and forage fish spawning areas. This information was adapted from Washington Department of Fish and Wildlife's (WDFW) Marine Species database and WDFW's Washington Lakes and Rivers Information System database. Contact WDFW for additional information on these databases. See also the FISH (Fish Polygons) data layer, part of the larger Puget Sound and Strait of Juan de Fuca ESI database, for additional fish information. These data do not necessarily represent all marine, estuarine, and anadromous fish occurrences in Puget Sound and Strait of Juan de Fuca. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 9, Rock sole, Lepidopsetta bilineata; 69, Coho salmon, Oncorhynchus kisutch; 70, Pink salmon, Oncorhynchus gorbuscha; 71, Sockeye salmon, Oncorhynchus nerka; 75, Surf smelt, Hypomesus pretiosus; 80, Pacific sand lance, Ammodytes hexapterus; 490, Chinook salmon (fall), Oncorhynchus tshawytscha (fall); 493, Chinook salmon (spring), Oncorhynchus tshawytscha (spring); 962, Steelhead (summer), Oncorhynchus mykiss (summer); 963, Steelhead (winter), Oncorhynchus mykiss (winter); 965, Chinook salmon (summer), Oncorhynchus tshawytscha (summer); 993, Chum salmon (summer), Oncorhynchus keta (summer); 994, Chum salmon (fall), Oncorhynchus keta (fall); 1080, Native char, Salvelinus spp.; 1081, Chum salmon (winter), Oncorhynchus keta (winter).

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

Spatial components for the biological data layers can come from expert interviews, hardcopy, or digital sources. Some of the spatial components of the biological data layers may have been developed using regional experts who estimate concentration areas. It is difficult to estimate the positional accuracy of such data, except to state that they are compiled on hardcopy base maps with a scale of 1:24,000. Some of the spatial components of the biological data sets are developed from pre-existing digital or hardcopy sources and reflect the positional accuracy of these original data. See the Lineage and Process_Description sections for more information on the original data source and how these data were integrated or manipulated to create the final data set. Note that biological resource data by their very nature are considered "fuzzy", and this should be understood when considering the positional accuracy of vector digital objects representing these resources.

Lineage:

Source_Information:
 Source_Citation:
  Citation_Information:
   Originator:
    BUSBY, P.J., T.C. WAINWRIGHT, G.J. BRYANT, L.J.
    LIERHEIMER, R.S. WAPLES, F.W. WAKNITZ, AND I.V.
    LAGOMARSINO
   Publication_Date: 1996
   Title:
    STATUS REVIEW OF WEST COAST STEELHEAD FROM
    WASHINGTON, IDAHO, OREGON, AND CALIFORNIA
   Geospatial_Data_Presentation_Form: REPORT
   Other_Citation_Details:
    U.S. DEPARTMENT OF COMMERCE, NOAA TECHNICAL
    MEMORANDUM NMFS-NWFSC-27, 261 PP.
 Type_of_Source_Media: PAPER
 Source_Time_Period_of_Content:
  Time_Period_Information:
   Single_Date/Time:
    Calendar_Date: 1996
  Source_Currentness_Reference: DATE OF PUBLICATION
 Source_Citation_Abbreviation: NONE
 Source_Contribution: FISHL INFORMATION
Source_Information:
 Source_Citation:
  Citation_Information:
   Originator:
    JOHNSON, O.W., W.S. GRANT, R.G. KOPE, K. NEELY, F.W.
    WAKNITZ, R.S. WAPLES
   Publication_Date: 1997
   Title:
    STATUS REVIEW OF CHUM SALMON FROM WASHINGTON,
    OREGON, AND CALIFORNIA
   Geospatial_Data_Presentation_Form: REPORT
   Other_Citation_Details:
    U.S. DEPARTMENT OF COMMERCE, NOAA TECHNICAL
    MEMORANDUM NMFS-NWFSC-32, 280 PP.
 Type_of_Source_Media: PAPER
 Source_Time_Period_of_Content:
  Time_Period_Information:
   Single_Date/Time:
    Calendar_Date: 1997
  Source_Currentness_Reference: DATE OF PUBLICATION
 Source_Citation_Abbreviation: NONE
 Source_Contribution: FISHL INFORMATION
Source_Information:
 Source_Citation:
  Citation_Information:
   Originator:
    MYERS, J.M., R.G. KOPE, G.J. BRYANT, D. TEEL, L.J.
    LIERHEIMER, T.C. WAINWRIGHT, W.S. GRANT, F.W.

WAKNITZ, K. NEELY, S.T. LINDLEY, AND R.S. WAPLES

Publication_Date: 1998

Title:

STATUS REVIEW OF CHINOOK SALMON FROM
WASHINGTON, IDAHO, OREGON, AND CALIFORNIA

Geospatial_Data_Presentation_Form: REPORT

Other_Citation_Details:

U.S. DEPARTMENT OF COMMERCE, NOAA TECHNICAL
MEMORANDUM NMFS-NWFSC-35, 443 PP.

Type_of_Source_Media: PAPER

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1998

Source_Currentness_Reference: DATE OF PUBLICATION

Source_Citation_Abbreviation: NONE

Source_Contribution: FISHL INFORMATION

Source_Information:

Source_Citation:

Citation_Information:

Originator:

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION,
NATIONAL OCEAN SERVICE

Publication_Date: 1990

Title:

DISTRIBUTION AND ABUNDANCE OF FISHES AND
INVERTEBRATES IN WEST COAST ESTUARIES VOLUME 1:
DATA SUMMARIES

Geospatial_Data_Presentation_Form: BOOK

Other_Citation_Details:

AUTHORS: MONACO, M.E., D.M. NELSON, R.L. EMMETT, AND
S.A. HINTON; 240 PP.

Type_of_Source_Media: PAPER

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1990

Source_Currentness_Reference: DATE OF PUBLICATION

Source_Citation_Abbreviation: NONE

Source_Contribution: FISHL INFORMATION

Source_Information:

Source_Citation:

Citation_Information:

Originator: WASHINGTON DEPARTMENT OF FISH AND WILDLIFE
(WDFW)

Publication_Date: 2005

Title: WASHINGTON LAKES AND RIVERS INFORMATION SYSTEM
(WLRIS)

Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA

Other_Citation_Details:

DATA CONTACT: MARTIN HUDSON, SPATIAL DATA

MANAGER, WDFW, FISH PROGRAM, BIOLOGICAL DATA
SYSTEMS, OLYMPIA, WA 98501

Source_Scale_Denominator: 24000

Type_of_Source_Media: CD-ROM

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 2004

Source_Currentness_Reference: GROUND CONDITION

Source_Citation_Abbreviation: NONE

Source_Contribution: FISHL INFORMATION

Source_Information:

Source_Citation:

Citation_Information:

Originator: WASHINGTON DEPARTMENT OF FISH AND WILDLIFE
(WDFW)

Publication_Date: 2005

Title:

MARINE FINFISH, SHELLFISH AND BASELINE GIS
COVERAGES, PUBLISHED MAP FILES AND THE WEB VERSION
OF TECHNICAL REPORT 79

Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA

Other_Citation_Details:

DATA CONTACT: DALE GOMBERT (WASHINGTON
DEPARTMENT OF FISH AND WILDLIFE, 425-379-2317)

Source_Scale_Denominator: VARIES

Type_of_Source_Media: CD-ROM

Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1992

Ending_Date: 2005

Source_Currentness_Reference: GROUND CONDITION

Source_Citation_Abbreviation: NONE

Source_Contribution: FISHL INFORMATION

Source_Information:

Source_Citation:

Citation_Information:

Originator: WASHINGTON DEPARTMENT OF FISH AND WILDLIFE
(WDFW)

Publication_Date: 2000

Title: FINAL BULL TROUT AND DOLLY VARDEN MANAGEMENT
PLAN

Geospatial_Data_Presentation_Form: REPORT

Other_Citation_Details:

OLYMPIA, WASHINGTON, ONLINE:
<http://wdfw.wa.gov/fish/bulltrt/bulldoly.htm>

Type_of_Source_Media: ONLINE

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

    Calendar_Date: 2000
   Source_Currentness_Reference: DATE OF PUBLICATION
  Source_Citation_Abbreviation: NONE
  Source_Contribution: FISHL INFORMATION
Process_Step:
 Process_Description:

   Two sources of data were used to depict anadromous species and forage fish locations for this data layer: (1) Washington Department of Fish and Wildlife's (WDFW) Marine Species database, and (2) WDFW's Washington Lakes and Rivers Information System database.

   From the WDFW Marine Species database, we extracted lines delineating smelt, sand lance, and rock sole spawning beaches. From WDFW's Washington Lakes and Rivers Information System database, we processed the ARC/INFO route and event data to determine the combination of anadromous species that were associated with each line segment. Concentration and seasonality information was provided by resource experts, or was extracted from published sources, reports, and survey data.

   The above digital and/or hardcopy sources were compiled by the project biologist to create the FISHL data layer. Depending on the type of source data, three general approaches are used for compiling a biology data layer: (1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles and digitized; (2) hardcopy maps are digitized at their source scale; (3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer.

 Process_Date: 200603
 Process_Contact:
  Contact_Information:
   Contact_Organization_Primary:
    Contact_Organization: Concurrent Technologies Corporation
    Contact_Person: Allison Bailey
   Contact_Address:
    Address_Type: Physical address
    Address: 5780 W. Werner Road
    City: Bremerton
    State_or_Province: Washington
    Postal_Code: 98312
   Contact_Voice_Telephone: (206) 459-2301
   Contact_Voice_Telephone: (360) 782-5500
   Contact_Facsimile_Telephone: (360) 782-5594
   Contact_Electronic_Mail_Address: allison@soundgis.com
Process_Step:
 Process_Description:
   The compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. If necessary, edits to the FISHL data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.
 Process_Date: 200605

Process_Contact:
  Contact_Information:
    Contact_Organization_Primary:
      Contact_Organization: NOAA
      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: 6995
    SDTS_Terms_Description:
      SDTS_Point_and_Vector_Object_Type: Link
      Point_and_Vector_Object_Count: 124077
    SDTS_Terms_Description:
      SDTS_Point_and_Vector_Object_Type: Node, planar graph
      Point_and_Vector_Object_Count: 7844

Spatial_Reference_Information:
  Horizontal_Coordinate_System_Definition:
    Geographic:
      Latitude_Resolution: 0.000001
      Longitude_Resolution: 0.000001
      Geographic_Coordinate_Units: Decimal degrees
    Geodetic_Model:
      Horizontal_Datum_Name: North American Datum of 1983
      Ellipsoid_Name: Geodetic Reference System 80
      Semi-major_Axis: 6378137.000000
      Denominator_of_Flattening_Ratio: 298.257222

Entity_and_Attribute_Information:
  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 Puget Sound and Strait of Juan de Fuca atlas, the number is 79), 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 in this data set representing anadromous fish spawning runs and forage fish spawning beaches. 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 (79), 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: 0792200001

Range_Domain_Maximum: 0792206995

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: 079000401

Range_Domain_Maximum: 079000639

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: 079000001

Range_Domain_Maximum: 079000797

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 (79), 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: 0790100002

Range_Domain_Maximum: 0793400327

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: 079000001

    Range_Domain_Maximum: 079000797

 Attribute:

  Attribute_Label: SPECIES_ID

  Attribute_Definition:

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

  Attribute_Definition_Source: Research Planning, Inc.

  Attribute_Domain_Values:

   Range_Domain:

    Range_Domain_Minimum: 1

    Range_Domain_Maximum: N

 Attribute:

  Attribute_Label: CONC

  Attribute_Definition:

   The field CONC refers to "concentration," abundance, or density values. No concentration data were available for 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: alcid
  Enumerated_Domain_Value_Definition: Alcid
  Enumerated_Domain_Value_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: cephalopod
  Enumerated_Domain_Value_Definition: Cephalopod
  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: echinoderm
  Enumerated_Domain_Value_Definition: Echinoderm
  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: 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: kelp
　　Enumerated_Domain_Value_Definition: Kelp
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: m_benthic
　　Enumerated_Domain_Value_Definition: Marine benthic fish
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: m_pelagic
　　Enumerated_Domain_Value_Definition: Marine pelagic fish
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: pelagic
　　Enumerated_Domain_Value_Definition: Pelagic bird
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: pinniped
　　Enumerated_Domain_Value_Definition: Pinniped
　　Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
　Enumerated_Domain:
　　Enumerated_Domain_Value: 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: sea otter
　　Enumerated_Domain_Value_Definition: Sea otter
　　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: shrimp
　　Enumerated_Domain_Value_Definition: Shrimps
　　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_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: 0
            Enumerated_Domain_Value_Definition: Date unspecified
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
    Attribute_Label: EL_SPE
    Attribute_Definition:
        Concatenation of ELEMENT and SPECIES_ID. This item links records in the
        SPECIES data table to records in the BIORES and STATUS data tables.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: E#####
            Enumerated_Domain_Value_Definition:
                Where E is the first character of ELEMENT and the next five characters
                are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1;
                EL_SPE = 'B00001').
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Detailed_Description:
    Entity_Type:
        Entity_Type_Label: SEASONAL
        Entity_Type_Definition:

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

Entity_Type_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: ELEMENT

Attribute_Definition: Major categories of biological data.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: BIRD

        Enumerated_Domain_Value_Definition: Birds

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: FISH

        Enumerated_Domain_Value_Definition: Fish

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: HABITAT

        Enumerated_Domain_Value_Definition: Habitats and Plants

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: INVERT

        Enumerated_Domain_Value_Definition: Invertebrates

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: M_MAMMAL

        Enumerated_Domain_Value_Definition: Marine Mammals

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: REPTILE

        Enumerated_Domain_Value_Definition: Reptiles and Amphibians

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: T_MAMMAL

        Enumerated_Domain_Value_Definition: Terrestrial Mammals

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: SPECIES_ID

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Range_Domain:
    Range_Domain_Minimum: 1
    Range_Domain_Maximum: N

Attribute:
  Attribute_Label: SEASON_ID
  Attribute_Definition:
    Numeric identifier for the unique monthly presence and life history characteristics
    of each species at a given location.
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum: 1
      Range_Domain_Maximum: N

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

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

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

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

Attribute:
  Attribute_Label: MAY

Attribute_Definition: May
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: X
  Enumerated_Domain_Value_Definition: Present in May
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: JUN
Attribute_Definition: June
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: X
  Enumerated_Domain_Value_Definition: Present in June
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: JUL
Attribute_Definition: July
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: X
  Enumerated_Domain_Value_Definition: Present in July
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: AUG
Attribute_Definition: August
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: X
  Enumerated_Domain_Value_Definition: Present in August
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: SEP
Attribute_Definition: September
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: X
  Enumerated_Domain_Value_Definition: Present in September
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: OCT
Attribute_Definition: October
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: X
  Enumerated_Domain_Value_Definition: Present in October

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: NOV

Attribute_Definition: November

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: X

Enumerated_Domain_Value_Definition: Present in November

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: DEC

Attribute_Definition: December

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: X

Enumerated_Domain_Value_Definition: Present in December

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: EL_SPE_SEA

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: E#######

Enumerated_Domain_Value_Definition:

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

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Detailed_Description:

Entity_Type:

Entity_Type_Label: BREED

Entity_Type_Definition:

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

Entity_Type_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: EL_SPE_SEA

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

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

Attribute:

Attribute_Label: MONTH
Attribute_Definition:
Two-digit calendar month. Each life history stage or activity type for a particular species can have up to 12 records to account for each month of the year.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum: 1
Range_Domain_Maximum: 12

Attribute:

Attribute_Label: BREED1
Attribute_Definition:
Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED1 = nesting; if ELEMENT is "FISH" then BREED1 = spawning; if ELEMENT is "INVERT" then BREED1 = spawning; if ELEMENT is "REPTILE" then BREED1 = nesting; if ELEMENT is "M_MAMMAL" then BREED1 = mating. This attribute is not used for HABITAT or T_MAMMAL elements.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Y
Enumerated_Domain_Value_Definition: Life-history stage or activity present
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: N
Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: -
Enumerated_Domain_Value_Definition:
Breed category not used or not appropriate for record(s) in question
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: Y

        Enumerated_Domain_Value_Definition: Life-history stage or activity present

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: N

        Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: -

        Enumerated_Domain_Value_Definition:

            Breed category not used or not appropriate for record(s) in question

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: BREED3

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: Y

        Enumerated_Domain_Value_Definition: Life-history stage or activity present

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: N

        Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: -

        Enumerated_Domain_Value_Definition:

            Breed category not used or not appropriate for record(s) in question

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: BREED4

Attribute_Definition:

    Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED4 = fledging; 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 HABITAT or T_MAMMAL elements.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Y

Enumerated_Domain_Value_Definition: Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: N

Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: -

Enumerated_Domain_Value_Definition:

Breed category not used or not appropriate for record(s) in question

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: BREED5

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Y

Enumerated_Domain_Value_Definition: Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: N

Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: -

Enumerated_Domain_Value_Definition:

Breed category not used or not appropriate for record(s) in question

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Detailed_Description:

Entity_Type:

Entity_Type_Label: SOURCES

Entity_Type_Definition:

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

structure.

Entity_Type_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: SOURCE_ID

Attribute_Definition:

Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; and SOURCE_ID in the ESI, HYDRO, and SOCECON data layers.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 1

Range_Domain_Maximum: N

Attribute:

Attribute_Label: ORIGINATOR

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: DATE_PUB

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: YYYYMM

Enumerated_Domain_Value_Definition: YYYY for year and optionally MM for month

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: TITLE

Attribute_Definition: Title of source material or data.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: DATA_FORMAT

Attribute_Definition: The format of the source material.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: PUBLICATION

Attribute_Definition: Additional citation information.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

     Attribute_Label: SCALE
     Attribute_Definition: Description of the source scale.
     Attribute_Definition_Source: Research Planning, Inc.
     Attribute_Domain_Values:
      Unrepresentable_Domain: Acceptable values change from atlas to atlas.
    Attribute:
     Attribute_Label: TIME_PERIOD
     Attribute_Definition:
      Date(s) of data collection that the source material is based upon.
     Attribute_Definition_Source: Research Planning, Inc.
     Attribute_Domain_Values:
      Unrepresentable_Domain: Acceptable values change from atlas to atlas.
  Detailed_Description:
    Entity_Type:
     Entity_Type_Label: STATUS
     Entity_Type_Definition:
      The data table STATUS identifies the species that are listed as either threatened or
      endangered by a state, federal, or international authority. See the Browse_Graphic
      section for a link to the entity-relationship diagram, which describes the way this
      table relates to other attribute tables in the ESI data structure.
     Entity_Type_Definition_Source: Research Planning, Inc.
    Attribute:
     Attribute_Label: ELEMENT
     Attribute_Definition: Major categories of biological data.
     Attribute_Definition_Source: Research Planning, Inc.
     Attribute_Domain_Values:
      Enumerated_Domain:
       Enumerated_Domain_Value: BIRD
       Enumerated_Domain_Value_Definition: Birds
       Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
     Attribute_Domain_Values:
      Enumerated_Domain:
       Enumerated_Domain_Value: FISH
       Enumerated_Domain_Value_Definition: Fish
       Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
     Attribute_Domain_Values:
      Enumerated_Domain:
       Enumerated_Domain_Value: HABITAT
       Enumerated_Domain_Value_Definition: Habitats and Plants
       Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
     Attribute_Domain_Values:
      Enumerated_Domain:
       Enumerated_Domain_Value: INVERT
       Enumerated_Domain_Value_Definition: Invertebrates
       Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
     Attribute_Domain_Values:
      Enumerated_Domain:
       Enumerated_Domain_Value: M_MAMMAL
       Enumerated_Domain_Value_Definition: Marine Mammals
       Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
     Attribute_Domain_Values:

Enumerated_Domain:

    Enumerated_Domain_Value: REPTILE

    Enumerated_Domain_Value_Definition: Reptiles and Amphibians

    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: T_MAMMAL

        Enumerated_Domain_Value_Definition: Terrestrial Mammals

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

    Attribute_Label: SPECIES_ID

    Attribute_Definition:

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

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Range_Domain:

            Range_Domain_Minimum: 1

            Range_Domain_Maximum: N

Attribute:

    Attribute_Label: STATE

    Attribute_Definition: Two-letter state abbreviation.

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

    Attribute_Label: COUNTRY

    Attribute_Definition: Three-letter country abbreviation.

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

    Attribute_Label: S

    Attribute_Definition: State threatened or endangered status.

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: E

            Enumerated_Domain_Value_Definition: Endangered on state list

            Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: T

            Enumerated_Domain_Value_Definition: Threatened on state list

            Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: C

            Enumerated_Domain_Value_Definition: Species of Special Concern

            Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:

Attribute_Label: F
Attribute_Definition: Federal threatened or endangered status.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: E
        Enumerated_Domain_Value_Definition: Endangered on federal list
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: T
        Enumerated_Domain_Value_Definition: Threatened on federal list
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: C
        Enumerated_Domain_Value_Definition: Species of Special Concern
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute:
Attribute_Label: I
Attribute_Definition: International threatened or endangered status.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: E
        Enumerated_Domain_Value_Definition: Endangered on international list
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: T
        Enumerated_Domain_Value_Definition: Threatened on international list
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: C
        Enumerated_Domain_Value_Definition: Species of Special Concern
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute:
Attribute_Label: S_DATE
Attribute_Definition:
    Publication date of source material used to assign state status values for each
    species, if used.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: YYYYMM
        Enumerated_Domain_Value_Definition: YYYY for year and optionally MM
        for month
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: F_DATE

Attribute_Definition:
> Publication date of source material used to assign federal status values for each species, if used.

Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
> *Enumerated_Domain:*
> > *Enumerated_Domain_Value:* YYYYMM
> > *Enumerated_Domain_Value_Definition:* YYYY for year and optionally MM for month
> > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:
> *Attribute_Label:* I_DATE
> *Attribute_Definition:*
> > Publication date of source material used to assign international status values for each species, if used.

> *Attribute_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
> > *Enumerated_Domain:*
> > > *Enumerated_Domain_Value:* YYYYMM
> > > *Enumerated_Domain_Value_Definition:* YYYY for year and optionally MM for month
> > > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:
> *Attribute_Label:* EL_SPE
> *Attribute_Definition:*
> > Concatenation of ELEMENT and SPECIES_ID. This item links the STATUS data table to the BIORES and SPECIES data tables.

> *Attribute_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
> > *Enumerated_Domain:*
> > > *Enumerated_Domain_Value:* E#####
> > > *Enumerated_Domain_Value_Definition:*
> > > > Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1; EL_SPE = 'B00001').
> > > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Distribution_Information:
> *Distributor:*
> > *Contact_Information:*
> > > *Contact_Person_Primary:*
> > > > *Contact_Person:* John Kaperick
> > > > *Contact_Organization:* NOAA, Office of Response and Restoration
> > > *Contact_Address:*
> > > > *Address_Type:* Physical Address
> > > > *Address:* 7600 Sand Point Way N.E.
> > > > *City:* Seattle
> > > > *State_or_Province:* Washington
> > > > *Postal_Code:* 98115-6349
> > > *Contact_Voice_Telephone:* (206) 526-6400

Contact_Facsimile_Telephone: (206) 526-6329
Resource_Description:
ESI Atlas for Puget Sound and Strait of Juan de Fuca, Washington
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 a Geodatabase; ARC export, MOSS, and Shape files; and MARPLOT map folders. An ArcMap .mxd file, an ArcView 3.x ESI project, and an 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: 200607
Metadata_Review_Date: 200607
Metadata_Contact:
Contact_Information:
Contact_Person_Primary:
Contact_Person: Jill Petersen
Contact_Organization: NOAA, Office of Response and Restoration
Contact_Position: GIS Manager
Contact_Address:
Address_Type: Physical Address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: Jill.Petersen@noaa.gov
Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998

Generated by mp version 2.8.21 on Mon Jul 24 12:32:07 2006

Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Puget Sound and Strait of Juan de Fuca, Washington: 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.
>>> *Publication_Date:* 200607
>>> *Title:*
>>>> Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Puget Sound and Strait of Juan de Fuca, Washington: INVERT (Invertebrate Polygons)
>>> *Edition:* First
>>> *Geospatial_Data_Presentation_Form:* Vector digital data
>>> *Series_Information:*
>>>> *Series_Name:* None
>>>> *Issue_Identification:* Puget Sound and Strait of Juan de Fuca, Washington
>>> *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:*
>>>> Funding was provided by Navy Region Northwest. This data set was prepared by Concurrent Technologies Corporation, Bremerton, Washington, and Sound GIS, Seattle, Washington with support from 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.

Description:

Abstract:

This data set contains sensitive biological resource data for clams, oysters, crabs, and other invertebrate species in Puget Sound and Strait of Juan de Fuca, Washington. 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 Puget Sound and Strait of Juan de Fuca, Washington. 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: 1992

Ending_Date: 2005

Currentness_Reference:

The biological data were compiled during 2005-2006. The currentness dates for the data range from 1992 to 2005 and are documented in the Lineage section.

Status:

Progress: Complete

Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -124.75100

East_Bounding_Coordinate: -122.12600

North_Bounding_Coordinate: 49.00000

South_Bounding_Coordinate: 47.00000

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: Puget Sound and Strait of Juan de Fuca, Washington
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 Puget Sound and Strait of Juan de Fuca, Washington ESI data.

Browse_Graphic_File_Type: JPEG

Data_Set_Credit:

This project was funded by Navy Region Northwest and supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 9.1) and SQL SERVER(r) (version 2000). The hardware configuration is PC's with Windows Operating System (2000/XP/2003). 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, habitatl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mampt.e00, mgt.e00, nests.e00, socecon.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report:

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

Logical_Consistency_Report:

A multi-stage error checking process, described in the above Attribute_Accuracy_Report, is used to verify both attribute accuracy and logical consistency throughout data production. This

process includes multiple automated logical consistency checks that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and SQL SERVER(r) to ARC/INFO(r) consistencies. A final review is made by the GIS manager, where the data are written to CD-ROM and the metadata are written.

After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks. In the process of checking for topological and database consistencies, new ID's and RARNUM's or HUNUM's are also generated. The new ID's are a combination of atlas number, element number, and record number. In addition, the value used to represent the element is modified to reflect the type of feature being mapped. In the case of an element that is normally represented by a point or polygon, a value of 20 is added to the standard element value for mapping of linear features. In the case where an element usually mapped as a polygon is represented by a point, a value of 30 is added to the regular element value. The RARNUM's are also modified to include the atlas number, so multiple atlases can be combined and RARNUM's remain unique. RARNUM's are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUM's are also modified to include the atlas number.

Completeness_Report:

These data represent a synthesis of digital data on invertebrate concentration areas. This information was adapted from Washington Department of Fish and Wildlife's (WDFW) Marine Species database. Contact WDFW for additional information on this database. These data do not necessarily represent all invertebrate occurrences in Puget Sound and Strait of Juan de Fuca. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 14, Dungeness crab, Cancer magister; 25, Softshell clam, Mya arenaria; 32, Geoduck, Panopea abrupta; 53, Red rock crab, Cancer productus; 79, Pacific oyster, Crassostrea gigas; 172, Giant octopus, Enteroctopus dofleini; 1009, Sea urchins, n/a; 1049, Pandalid shrimp, Pandalus spp.; 1051, Scallops, n/a; 1059, Hardshell clams, n/a.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

Spatial components for the biological data layers can come from expert interviews, hardcopy, or digital sources. Some of the spatial components of the biological data layers may have been developed using regional experts who estimate concentration areas. It is difficult to estimate the positional accuracy of such data, except to state that they are compiled on hardcopy base maps with a scale of 1:24,000. Some of the spatial components of the biological data sets are developed from pre-existing digital or hardcopy sources and reflect the positional accuracy of these original data. See the Lineage and Process_Description sections for more information on the original data source and how these data were integrated or manipulated to create the final data set. Note that biological resource data by their very nature are considered "fuzzy", and this should be understood when considering the positional accuracy of vector digital objects representing these resources.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

Publication_Date: 2005

Title:

MARINE FINFISH, SHELLFISH AND BASELINE GIS COVERAGES, PUBLISHED MAP FILES AND THE WEB VERSION

OF TECHNICAL REPORT 79
Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
Other_Citation_Details:
DATA CONTACT: DALE GOMBERT (WASHINGTON
DEPARTMENT OF FISH AND WILDLIFE, 425-379-2317)
Source_Scale_Denominator: VARIES
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date: 1992
Ending_Date: 2005
Source_Currentness_Reference: GROUND CONDITION
Source_Citation_Abbreviation: NONE
Source_Contribution: INVERT INFORMATION
Process_Step:
Process_Description:
The data source used to depict invertebrate distribution for this data layer was
Washington Department of Fish and Wildlife's (WDFW) Marine Species database.

From the WDFW Marine Species data, we extracted polygons depicting
concentration areas for clams, oyster, scallops, shrimp, sea urchins, crabs, and
octopus. Concentration and seasonality information was provided by resource
experts, or was extracted from published sources, reports, and survey data.

The above digital and/or hardcopy sources were compiled by the project biologist to
create the INVERT data layer. Depending on the type of source data, three general
approaches are used for compiling a biology data layer: (1) information gathered
during initial interviews and from hardcopy sources are compiled onto U.S.
Geological Survey 1:24,000 topographic quadrangles and digitized; (2) hardcopy
maps are digitized at their source scale; (3) digital data layers are evaluated and used
"as is" or integrated with the hardcopy data sources. See the Lineage section for
additional information on the type of source data for this data layer.

Process_Date: 200603
Process_Contact:
Contact_Information:
Contact_Organization_Primary:
Contact_Organization: Concurrent Technologies Corporation
Contact_Person: Allison Bailey
Contact_Address:
Address_Type: Physical address
Address: 5780 W. Werner Road
City: Bremerton
State_or_Province: Washington
Postal_Code: 98312
Contact_Voice_Telephone: (206) 459-2301
Contact_Voice_Telephone: (360) 782-5500
Contact_Facsimile_Telephone: (360) 782-5594
Contact_Electronic_Mail_Address: allison@soundgis.com
Process_Step:

Process_Description:

> The compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. If necessary, edits to the INVERT data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.

Process_Date: 200605

Process_Contact:

> *Contact_Information:*
>
>> *Contact_Organization_Primary:*
>>
>>> *Contact_Organization:* NOAA
>>> *Contact_Person:* Jill Petersen
>>
>> *Contact_Address:*
>>
>>> *Address_Type:* Physical address
>>> *Address:* 7600 Sand Point Way N.E.
>>> *City:* Seattle
>>> *State_or_Province:* Washington
>>> *Postal_Code:* 98115-6349
>>
>> *Contact_Voice_Telephone:* (206) 526-6944
>> *Contact_Facsimile_Telephone:* (206) 526-6329
>> *Contact_Electronic_Mail_Address:* Jill.Petersen@noaa.gov

Spatial_Data_Organization_Information:

> *Direct_Spatial_Reference_Method:* Vector
> *Point_and_Vector_Object_Information:*
>
>> *SDTS_Terms_Description:*
>>
>>> *SDTS_Point_and_Vector_Object_Type:* GT-polygon composed of chains
>>> *Point_and_Vector_Object_Count:* 4035
>>
>> *SDTS_Terms_Description:*
>>
>>> *SDTS_Point_and_Vector_Object_Type:* Area point
>>> *Point_and_Vector_Object_Count:* 4036
>>
>> *SDTS_Terms_Description:*
>>
>>> *SDTS_Point_and_Vector_Object_Type:* Complete chain
>>> *Point_and_Vector_Object_Count:* 8216
>>
>> *SDTS_Terms_Description:*
>>
>>> *SDTS_Point_and_Vector_Object_Type:* Link
>>> *Point_and_Vector_Object_Count:* 187397
>>
>> *SDTS_Terms_Description:*
>>
>>> *SDTS_Point_and_Vector_Object_Type:* Node, planar graph
>>> *Point_and_Vector_Object_Count:* 4773

Spatial_Reference_Information:

> *Horizontal_Coordinate_System_Definition:*
>
>> *Geographic:*
>>
>>> *Latitude_Resolution:* 0.000001
>>> *Longitude_Resolution:* 0.000001
>>> *Geographic_Coordinate_Units:* Decimal degrees
>>
>> *Geodetic_Model:*
>>
>>> *Horizontal_Datum_Name:* North American Datum of 1983

Ellipsoid_Name: Geodetic Reference System 80
Semi-major_Axis: 6378137.000000
Denominator_of_Flattening_Ratio: 298.257222

Entity_and_Attribute_Information:
    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 Puget Sound and Strait of Juan de Fuca atlas, the number is 79), an element/layer specific number (BIRDS are layer 1, FISH are layer 2, etc.), and a unique record number. The RARNUM represents a unique combination of species, seasonalities, concentrations, and source information. For each of these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases. BIORES and the other relational data tables are described below in detail. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way these tables relate to the geographic data layers and other attribute tables in the ESI data structure.

Due to the complexity of the relational database model, the data items are also post-processed into a flat file format. This table, called BIOFILE, may be used in place of the relational files described below to ease simple data queries. The items in the flat file are ELEMENT, SUBELEMENT, NAME, GEN_SPEC, S, F, NHP, DATE_PUB, CONC, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC, BREED1, BREED2, BREED3, BREED4, BREED5, RARNUM, G_SOURCE, S_SOURCE, and BREED. All of these items are the same as their counterparts in the individual data tables described below, except the BREED1-BREED5 and BREED items. BREED is a newly generated variable used to link to the BREED_DT data table, a modified, more compact version of the relational BREED data table. BREED1-BREED5 give a text summary of when each life stage occurs within the associated map object. The life stages referred to are the same as those listed in the Detailed_Description of the BREED data table. The link to the BIOFILE may be made through the BIO_LUT, using ID to link to RARNUM, or BIOFILE may be linked directly to the RARNUM in each of the geographic layer's attribute data tables. As mentioned, BREED_DT is an auxiliary support data table to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item.

A second supporting data table is SOURCES. This is the same as the source file described above, and the link from the flat file is both G_SOURCE and S_SOURCE. It should be noted that although the flat file eases data query, it is not a normalized database structure, and actual updates performed by the states and other responsible agencies should be done using the relational data tables. The entity-relationship diagram, describing relationships between attribute tables in the ESI data structure, does NOT include the BIOFILE data table, and this data table is NOT described in detail below.

    Detailed_Description:
        Entity_Type:

Entity_Type_Label: INVERT.PAT

Entity_Type_Definition:

> The INVERT.PAT table contains attribute information for the vector polygons in this data set representing locations of concentrations areas for clams, oysters, crabs, and other invertebrate 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 (79), 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:* 0790700002
> >
> > *Range_Domain_Maximum:* 0790704099

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:* 079000655
> >
> > *Range_Domain_Maximum:* 079000787

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:* 079000001

Range_Domain_Maximum: 079000797

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 (79), 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: 0790100002

Range_Domain_Maximum: 0793400327

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: 079000001

Range_Domain_Maximum: 079000797

Attribute:

Attribute_Label: SPECIES_ID

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 1

Range_Domain_Maximum: N

Attribute:

Attribute_Label: CONC

Attribute_Definition:

The field CONC refers to "concentration," abundance, or density values. No concentration data were available for invertebrates, 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_Definiton_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: alcid
Enumerated_Domain_Value_Definition: Alcid
Enumerated_Domain_Value_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: cephalopod
Enumerated_Domain_Value_Definition: Cephalopod
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: echinoderm
        Enumerated_Domain_Value_Definition: Echinoderm
        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: 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: kelp
        Enumerated_Domain_Value_Definition: Kelp
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: m_benthic
        Enumerated_Domain_Value_Definition: Marine benthic fish
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: m_pelagic
        Enumerated_Domain_Value_Definition: Marine pelagic fish
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: pelagic
        Enumerated_Domain_Value_Definition: Pelagic bird
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: pinniped
        Enumerated_Domain_Value_Definition: Pinniped
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: 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: sea otter
     Enumerated_Domain_Value_Definition: Sea otter
     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: shrimp
     Enumerated_Domain_Value_Definition: Shrimps
     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_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: 0
   Enumerated_Domain_Value_Definition: Date unspecified
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
 Attribute_Label: EL_SPE
 Attribute_Definition:
  Concatenation of ELEMENT and SPECIES_ID. This item links records in the

SPECIES data table to records in the BIORES and STATUS data tables.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: E#####
        Enumerated_Domain_Value_Definition:
            Where E is the first character of ELEMENT and the next five characters
            are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1;
            EL_SPE = 'B00001').
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Detailed_Description:
    Entity_Type:
        Entity_Type_Label: SEASONAL
        Entity_Type_Definition:
            The data table SEASONAL contains information on the seasonal presence of each
            species associated with each spatial vector object. See the Browse_Graphic section
            for a link to the entity-relationship diagram, which describes the way this table
            relates to other attribute tables in the ESI data structure.
        Entity_Type_Definition_Source: Research Planning, Inc.
    Attribute:
        Attribute_Label: ELEMENT
        Attribute_Definition: Major categories of biological data.
        Attribute_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: BIRD
                Enumerated_Domain_Value_Definition: Birds
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: FISH
                Enumerated_Domain_Value_Definition: Fish
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: HABITAT
                Enumerated_Domain_Value_Definition: Habitats and Plants
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: INVERT
                Enumerated_Domain_Value_Definition: Invertebrates
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: M_MAMMAL
                Enumerated_Domain_Value_Definition: Marine Mammals
                Enumerated_Domain_Value_Definiton_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: REPTILE

Enumerated_Domain_Value_Definition: Reptiles and Amphibians

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: T_MAMMAL

Enumerated_Domain_Value_Definition: Terrestrial Mammals

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: SPECIES_ID

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 1

Range_Domain_Maximum: N

Attribute:

Attribute_Label: SEASON_ID

Attribute_Definition:

Numeric identifier for the unique monthly presence and life history characteristics of each species at a given location.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 1

Range_Domain_Maximum: N

Attribute:

Attribute_Label: JAN

Attribute_Definition: January

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: X

Enumerated_Domain_Value_Definition: Present in January

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: FEB

Attribute_Definition: February

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: X

Enumerated_Domain_Value_Definition: Present in February

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: MAR

Attribute_Definition: March

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

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

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

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

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

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

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

Attribute:
  Attribute_Label: SEP
  Attribute_Definition: September

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

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

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

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

Attribute:
    Attribute_Label: EL_SPE_SEA
    Attribute_Definition:
        Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links
        records in the SEASONAL data table to records in the BIORES and BREED data
        tables.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: E#######
            Enumerated_Domain_Value_Definition:
                Where E is the first character of ELEMENT, the next five characters are
                SPECIES_ID, and the last two characters are SEASON_ID (e.g.
                ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1;
                EL_SPE_SEA = 'B0000101').
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Detailed_Description:
    Entity_Type:

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

Entity_Type_Definition_Source: Research Planning, Inc.

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

Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
> *Enumerated_Domain:*
>> *Enumerated_Domain_Value:* E#######
>> *Enumerated_Domain_Value_Definition:*
>>> Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').
>>
>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

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

Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
> *Range_Domain:*
>> *Range_Domain_Minimum:* 1
>> *Range_Domain_Maximum:* 12

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

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

Attribute_Domain_Values:
> *Enumerated_Domain:*
>> *Enumerated_Domain_Value:* N
>> *Enumerated_Domain_Value_Definition:* Life-history stage or activity not present or not reported
>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute_Domain_Values:

   Enumerated_Domain:

   Enumerated_Domain_Value: -

   Enumerated_Domain_Value_Definition:

   Breed category not used or not appropriate for record(s) in question

   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: BREED2

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

   Enumerated_Domain:

   Enumerated_Domain_Value: Y

   Enumerated_Domain_Value_Definition: Life-history stage or activity present

   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

   Enumerated_Domain:

   Enumerated_Domain_Value: N

   Enumerated_Domain_Value_Definition: Life-history stage or activity not
   present or not reported

   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

   Enumerated_Domain:

   Enumerated_Domain_Value: -

   Enumerated_Domain_Value_Definition:

   Breed category not used or not appropriate for record(s) in question

   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: BREED3

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

   Enumerated_Domain:

   Enumerated_Domain_Value: Y

   Enumerated_Domain_Value_Definition: Life-history stage or activity present

   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

   Enumerated_Domain:

   Enumerated_Domain_Value: N

   Enumerated_Domain_Value_Definition: Life-history stage or activity not
   present or not reported

> > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
> > *Enumerated_Domain:*
> > > *Enumerated_Domain_Value:* -
> > > *Enumerated_Domain_Value_Definition:*
> > > > Breed category not used or not appropriate for record(s) in question
> > > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:
> *Attribute_Label:* BREED4
> *Attribute_Definition:*
> > Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED4 = fledging; 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 HABITAT or T_MAMMAL elements.
> *Attribute_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
> > *Enumerated_Domain:*
> > > *Enumerated_Domain_Value:* Y
> > > *Enumerated_Domain_Value_Definition:* Life-history stage or activity present
> > > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
> > *Enumerated_Domain:*
> > > *Enumerated_Domain_Value:* N
> > > *Enumerated_Domain_Value_Definition:* Life-history stage or activity not present or not reported
> > > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
> > *Enumerated_Domain:*
> > > *Enumerated_Domain_Value:* -
> > > *Enumerated_Domain_Value_Definition:*
> > > > Breed category not used or not appropriate for record(s) in question
> > > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:
> *Attribute_Label:* BREED5
> *Attribute_Definition:*
> > Life history stage or activity type, where: if ELEMENT is "FISH" then BREED5 = adults; if ELEMENT is "INVERT" then BREED5 = adults; if ELEMENT is "REPTILE" then BREED5 = adults. This attribute is not used for BIRD, M_MAMMAL, HABITAT, or T_MAMMAL elements.
> *Attribute_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
> > *Enumerated_Domain:*
> > > *Enumerated_Domain_Value:* Y
> > > *Enumerated_Domain_Value_Definition:* Life-history stage or activity present
> > > *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
> > *Enumerated_Domain:*
> > > *Enumerated_Domain_Value:* N
> > > *Enumerated_Domain_Value_Definition:* Life-history stage or activity not present or not reported

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: -

            Enumerated_Domain_Value_Definition:

                Breed category not used or not appropriate for record(s) in question

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Detailed_Description:

    Entity_Type:

        Entity_Type_Label: SOURCES

        Entity_Type_Definition:

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

        Entity_Type_Definition_Source: Research Planning, Inc.

    Attribute:

        Attribute_Label: SOURCE_ID

        Attribute_Definition:

            Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; and SOURCE_ID in the ESI, HYDRO, and SOCECON data layers.

        Attribute_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Range_Domain:

                Range_Domain_Minimum: 1

                Range_Domain_Maximum: N

    Attribute:

        Attribute_Label: ORIGINATOR

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

        Attribute_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Unrepresentable_Domain: Acceptable values change from atlas to atlas.

    Attribute:

        Attribute_Label: DATE_PUB

        Attribute_Definition:

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

        Attribute_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

                Enumerated_Domain_Value: YYYYMM

                Enumerated_Domain_Value_Definition: YYYY for year and optionally MM for month

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute:

        Attribute_Label: TITLE

        Attribute_Definition: Title of source material or data.

        Attribute_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: DATA_FORMAT

Attribute_Definition: The format of the source material.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: PUBLICATION

Attribute_Definition: Additional citation information.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: SCALE

Attribute_Definition: Description of the source scale.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: TIME_PERIOD

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Detailed_Description:

Entity_Type:

Entity_Type_Label: STATUS

Entity_Type_Definition:

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

Entity_Type_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: ELEMENT

Attribute_Definition: Major categories of biological data.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: BIRD

Enumerated_Domain_Value_Definition: Birds

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: FISH

Enumerated_Domain_Value_Definition: Fish

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

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

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

Attribute:
Attribute_Label: STATE
Attribute_Definition: Two-letter state abbreviation.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute_Label: COUNTRY
Attribute_Definition: Three-letter country abbreviation.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute_Label: S
Attribute_Definition: State threatened or endangered status.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:

Enumerated_Domain_Value: E
Enumerated_Domain_Value_Definition: Endangered on state list
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: T
Enumerated_Domain_Value_Definition: Threatened on state list
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: C
Enumerated_Domain_Value_Definition: Species of Special Concern
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute:
Attribute_Label: F
Attribute_Definition: Federal threatened or endangered status.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: E
Enumerated_Domain_Value_Definition: Endangered on federal list
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: T
Enumerated_Domain_Value_Definition: Threatened on federal list
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: C
Enumerated_Domain_Value_Definition: Species of Special Concern
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute:
Attribute_Label: I
Attribute_Definition: International threatened or endangered status.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: E
Enumerated_Domain_Value_Definition: Endangered on international list
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: T
Enumerated_Domain_Value_Definition: Threatened on international list
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: C
Enumerated_Domain_Value_Definition: Species of Special Concern
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:

    Attribute_Label: S_DATE

    Attribute_Definition:

        Publication date of source material used to assign state status values for each species, if used.

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: YYYYMM

            Enumerated_Domain_Value_Definition: YYYY for year and optionally MM for month

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

    Attribute_Label: F_DATE

    Attribute_Definition:

        Publication date of source material used to assign federal status values for each species, if used.

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: YYYYMM

            Enumerated_Domain_Value_Definition: YYYY for year and optionally MM for month

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

    Attribute_Label: I_DATE

    Attribute_Definition:

        Publication date of source material used to assign international status values for each species, if used.

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: YYYYMM

            Enumerated_Domain_Value_Definition: YYYY for year and optionally MM for month

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

    Attribute_Label: EL_SPE

    Attribute_Definition:

        Concatenation of ELEMENT and SPECIES_ID. This item links the STATUS data table to the BIORES and SPECIES data tables.

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: E#####

            Enumerated_Domain_Value_Definition:

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

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Distribution_Information:
    Distributor:
        Contact_Information:
            Contact_Person_Primary:
                Contact_Person: John Kaperick
                Contact_Organization: NOAA, Office of Response and Restoration
            Contact_Address:
                Address_Type: Physical Address
                Address: 7600 Sand Point Way N.E.
                City: Seattle
                State_or_Province: Washington
                Postal_Code: 98115-6349
            Contact_Voice_Telephone: (206) 526-6400
            Contact_Facsimile_Telephone: (206) 526-6329
    Resource_Description:
        ESI Atlas for Puget Sound and Strait of Juan de Fuca, Washington
    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 a Geodatabase; ARC export, MOSS, and Shape files; and MARPLOT map folders. An
        ArcMap .mxd file, an ArcView 3.x ESI project, and an 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: 200607
    Metadata_Review_Date: 200607
    Metadata_Contact:
        Contact_Information:
            Contact_Person_Primary:
                Contact_Person: Jill Petersen
                Contact_Organization: NOAA, Office of Response and Restoration
            Contact_Position: GIS Manager
            Contact_Address:
                Address_Type: Physical Address
                Address: 7600 Sand Point Way N.E.
                City: Seattle
                State_or_Province: Washington
                Postal_Code: 98115-6349
            Contact_Voice_Telephone: (206) 526-6944
            Contact_Facsimile_Telephone: (206) 526-6329

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

Generated by mp version 2.8.21 on Mon Jul 24 12:35:55 2006

Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Puget Sound and Strait of Juan de Fuca, Washington: 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.
>>> *Publication_Date:* 200607
>>> *Title:*
>>>> Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Puget Sound and Strait of Juan de Fuca, Washington: M_MAMPT (Marine Mammal Points)
>>> *Edition:* First
>>> *Geospatial_Data_Presentation_Form:* Vector digital data
>>> *Series_Information:*
>>>> *Series_Name:* None
>>>> *Issue_Identification:* Puget Sound and Strait of Juan de Fuca, Washington
>>> *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:*
>>>> Funding was provided by Navy Region Northwest. This data set was prepared by Concurrent Technologies Corporation, Bremerton, Washington, and Sound GIS, Seattle, Washington with support from 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.

Description:

Abstract:

This data set contains sensitive biological resource data for sea otters, sea lions, and harbor seals in Puget Sound and Strait of Juan de Fuca, Washington. Vector points in this data set represent seal and sea lion haulout sites, as well as observed sea otter concentrations. 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 Puget Sound and Strait of Juan de Fuca, Washington. 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: 1978

Ending_Date: 2006

Currentness_Reference:

The biological data were compiled during 2005-2006. The currentness dates for the data range from 1978 to 2006 and are documented in the Lineage section.

Status:

Progress: Complete

Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -124.75100

East_Bounding_Coordinate: -122.12600

North_Bounding_Coordinate: 49.00000

South_Bounding_Coordinate: 47.00000

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 Mammals

Place:

Place_Keyword_Thesaurus: None

Place_Keyword: Puget Sound and Strait of Juan de Fuca, Washington

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 Puget Sound and Strait of Juan de Fuca, Washington ESI data.

Browse_Graphic_File_Type: JPEG

Data_Set_Credit:

This project was funded by Navy Region Northwest and supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 9.1) and SQL SERVER(r) (version 2000). The hardware configuration is PC's with Windows Operating System (2000/XP/2003).

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, habitatl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mampt.e00, mgt.e00, nests.e00, socecon.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report:

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

Logical_Consistency_Report:

A multi-stage error checking process, described in the above Attribute_Accuracy_Report, is used

to verify both attribute accuracy and logical consistency throughout data production. This process includes multiple automated logical consistency checks that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and SQL SERVER(r) to ARC/INFO(r) consistencies. A final review is made by the GIS manager, where the data are written to CD-ROM and the metadata are written.

After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks. In the process of checking for topological and database consistencies, new ID's and RARNUM's or HUNUM's are also generated. The new ID's are a combination of atlas number, element number, and record number. In addition, the value used to represent the element is modified to reflect the type of feature being mapped. In the case of an element that is normally represented by a point or polygon, a value of 20 is added to the standard element value for mapping of linear features. In the case where an element usually mapped as a polygon is represented by a point, a value of 30 is added to the regular element value. The RARNUM's are also modified to include the atlas number, so multiple atlases can be combined and RARNUM's remain unique. RARNUM's are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUM's are also modified to include the atlas number.

Completeness_Report:
> These data represent a synthesis of digital data on seal and sea lion haulout sites and observed sea otter concentrations. This information was adapted from Washington Department of Fish and Wildlife's (WDFW) Wildlife Heritage database and WDFW's Seal and Sea Lion Haulout database. Contact WDFW for additional information on these databases. These data do not necessarily represent all marine mammal occurrences in Puget Sound and Strait of Juan de Fuca. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 1, Steller sea lion, Eumetopias jubatus; 2, Harbor seal, Phoca vitulina; 7, Sea otter, Enhydra lutris; 22, California sea lion, Zalophus californianus.

Positional_Accuracy:
> *Horizontal_Positional_Accuracy:*
>> *Horizontal_Positional_Accuracy_Report:*
>>> Spatial components for the biological data layers can come from expert interviews, hardcopy, or digital sources. Some of the spatial components of the biological data layers may have been developed using regional experts who estimate concentration areas. It is difficult to estimate the positional accuracy of such data, except to state that they are compiled on hardcopy base maps with a scale of 1:24,000. Some of the spatial components of the biological data sets are developed from pre-existing digital or hardcopy sources and reflect the positional accuracy of these original data. See the Lineage and Process_Description sections for more information on the original data source and how these data were integrated or manipulated to create the final data set. Note that biological resource data by their very nature are considered "fuzzy", and this should be understood when considering the positional accuracy of vector digital objects representing these resources.

Lineage:
> *Source_Information:*
>> *Source_Citation:*
>>> *Citation_Information:*
>>>> *Originator:* BARRY TROUTMAN (WASHINGTON DEPARTMENT OF FISH AND WILDLIFE)
>>>> *Publication_Date:* 2006
>>>> *Title:* SEASONALITY DATA FOR STELLER SEA LIONS AND CALIFORNIA SEA LIONS

     Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE

     Other_Citation_Details: UNPUBLISHED

   Type_of_Source_Media: PERSONAL COMMUNICATION

   Source_Time_Period_of_Content:

    Time_Period_Information:

     Single_Date/Time:

      Calendar_Date: 2006

    Source_Currentness_Reference: DATE OF COMMUNICATION

   Source_Citation_Abbreviation: NONE

   Source_Contribution: M_MAMPT INFORMATION

  Source_Information:

   Source_Citation:

    Citation_Information:

     Originator:

      JEFFRIES, S.J., P.J. GEARIN, H.R. HUBER, D.L. SAUL, AND D.A. PRUETT

     Publication_Date: 2000

     Title: ATLAS OF SEAL AND SEA LION HAULOUT SITES IN WASHINGTON

     Geospatial_Data_Presentation_Form: REPORT

     Other_Citation_Details:

      WASHINGTON DEPARTMENT OF FISH AND WILDLIFE, WILDLIFE SCIENCE DIVISION, 600 CAPITOL WAY NORTH, OLYMPIA WA. PP. 150. ONLINE: <http://wdfw.wa.gov/wlm/research/papers/seal_haulout>

   Type_of_Source_Media: ONLINE

   Source_Time_Period_of_Content:

    Time_Period_Information:

     Single_Date/Time:

      Calendar_Date: 2000

    Source_Currentness_Reference: DATE OF PUBLICATIONS

   Source_Citation_Abbreviation: NONE

   Source_Contribution: M_MAMPT INFORMATION

  Source_Information:

   Source_Citation:

    Citation_Information:

     Originator: LANCE, M.M., S.A. RICHARDSON AND H.L. ALLEN

     Publication_Date: 2004

     Title: WASHINGTON STATE RECOVERY PLAN FOR THE SEA OTTER

     Geospatial_Data_Presentation_Form: REPORT

     Other_Citation_Details:

      WASHINGTON DEPARTMENT OF FISH AND WILDLIFE, OLYMPIA. 91 PP. ONLINE: <http://wdfw.wa.gov/wlm/diversity/soc/recovery/seaotter/index.htm>

   Type_of_Source_Media: ONLINE

   Source_Time_Period_of_Content:

    Time_Period_Information:

     Single_Date/Time:

      Calendar_Date: 2004

    Source_Currentness_Reference: DATE OF PUBLICATIONS

   Source_Citation_Abbreviation: NONE

Source_Contribution: M_MAMPT INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: WASHINGTON DEPARTMENT OF FISH AND WILDLIFE
      Publication_Date: 2005
      Title: WILDLIFE HERITAGE DATABASE
      Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
      Other_Citation_Details:
        DATA CONTACT: GRETCHEN BLATZ (WASHINGTON
        DEPARTMENT OF FISH AND WILDLIFE, 600 CAPITOL WAY
        NORTH, OLYMPIA, WA 98501-1091, 360-902-2484)
  Type_of_Source_Media: CD-ROM
  Source_Time_Period_of_Content:
    Time_Period_Information:
      Range_of_Dates/Times:
        Beginning_Date: 1978
        Ending_Date: 2005
    Source_Currentness_Reference: GROUND CONDITION
  Source_Citation_Abbreviation: NONE
  Source_Contribution: M_MAMPT INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: WASHINGTON DEPARTMENT OF FISH AND WILDLIFE
      Publication_Date: 2005
      Title: SEAL AND SEA LION HAULOUT DATABASE
      Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
      Other_Citation_Details:
        WASHINGTON DEPARTMENT OF FISH AND WILDLIFE, 600
        CAPITOL WAY NORTH, OLYMPIA, WASHINGTON, 98501
  Source_Scale_Denominator: VARIES
  Type_of_Source_Media: CD-ROM
  Source_Time_Period_of_Content:
    Time_Period_Information:
      Single_Date/Time:
        Calendar_Date: 2000
    Source_Currentness_Reference: DATE OF PUBLICATION
  Source_Citation_Abbreviation: NONE
  Source_Contribution: M_MAMPT INFORMATION
Process_Step:
  Process_Description:
    Two main sources of data were used to depict marine mammal locations for this data
    layer: (1) Washington Department of Fish and Wildlife's (WDFW) Wildlife Heritage
    database, and (2) WDFW's Seal and Sea Lion Haulout database.

    From the WDFW Seal and Sea Lion Haulout data, we extracted all points depicting
    seal and sea lion haulouts. The harbor seal haulouts were spatially subset into
    regions due to the geographic variation in pupping and molting seasons. From the
    WDFW Wildlife Heritage database, we extracted all sea otter point locations.
    Concentration and seasonality information was provided by resource experts, or was

extracted from published sources, reports, and survey data.

The above digital and/or hardcopy sources were compiled by the project biologist to create the M_MAMPT data layer. Depending on the type of source data, three general approaches are used for compiling a biology data layer: (1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles and digitized; (2) hardcopy maps are digitized at their source scale; (3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer.

Process_Date: 200603
Process_Contact:
    Contact_Information:
        Contact_Organization_Primary:
            Contact_Organization: Concurrent Technologies Corporation
            Contact_Person: Allison Bailey
        Contact_Address:
            Address_Type: Physical address
            Address: 5780 W. Werner Road
            City: Bremerton
            State_or_Province: Washington
            Postal_Code: 98312
        Contact_Voice_Telephone: (206) 459-2301
        Contact_Voice_Telephone: (360) 782-5500
        Contact_Facsimile_Telephone: (360) 782-5594
        Contact_Electronic_Mail_Address: allison@soundgis.com
Process_Step:
    Process_Description:
        The compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. If necessary, edits to the M_MAMPT data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.
    Process_Date: 200605
    Process_Contact:
        Contact_Information:
            Contact_Organization_Primary:
                Contact_Organization: NOAA
                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: 327

Spatial_Reference_Information:
    Horizontal_Coordinate_System_Definition:
        Geographic:
            Latitude_Resolution: 0.000001
            Longitude_Resolution: 0.000001
            Geographic_Coordinate_Units: Decimal degrees
        Geodetic_Model:
            Horizontal_Datum_Name: North American Datum of 1983
            Ellipsoid_Name: Geodetic Reference System 80
            Semi-major_Axis: 6378137.000000
            Denominator_of_Flattening_Ratio: 298.257222

Entity_and_Attribute_Information:
    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 Puget Sound and Strait of Juan de Fuca atlas, the number is 79), 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 in
            this data set representing seal and sea lion haulout sites, as well as observed sea otter
            concentrations. 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 (79), 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: 0793400001
                Range_Domain_Maximum: 0793400327
    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: 079000788
                Range_Domain_Maximum: 079000797
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:* 0790000001
>> *Range_Domain_Maximum:* 079000797

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 (79), 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:* 790100002
>> *Range_Domain_Maximum:* 793400327

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:* 079000001
>> *Range_Domain_Maximum:* 079000797

Attribute:

Attribute_Label: SPECIES_ID

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 1

Range_Domain_Maximum: N

Attribute:

Attribute_Label: CONC

Attribute_Definition:

The field CONC refers to "concentration," abundance, or density values. No concentration data were available for marine mammals, 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: alcid
  Enumerated_Domain_Value_Definition: Alcid
  Enumerated_Domain_Value_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: cephalopod
Enumerated_Domain_Value_Definition: Cephalopod
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: echinoderm
      Enumerated_Domain_Value_Definition: Echinoderm
      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: 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: kelp
      Enumerated_Domain_Value_Definition: Kelp habitat, community, or species
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
   Enumerated_Domain:
      Enumerated_Domain_Value: m_benthic
      Enumerated_Domain_Value_Definition: Marine benthic fish
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
   Enumerated_Domain:
      Enumerated_Domain_Value: m_pelagic
      Enumerated_Domain_Value_Definition: Marine pelagic fish
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
   Enumerated_Domain:
      Enumerated_Domain_Value: pelagic

Enumerated_Domain_Value_Definition: Pelagic bird

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: pinniped

Enumerated_Domain_Value_Definition: Pinniped

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 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: sea otter

Enumerated_Domain_Value_Definition: Sea otter

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: shrimp

Enumerated_Domain_Value_Definition: Shrimps

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_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: 0

        Enumerated_Domain_Value_Definition: Date unspecified

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: EL_SPE

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: E#####

        Enumerated_Domain_Value_Definition:

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

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Detailed_Description:

Entity_Type:

Entity_Type_Label: SEASONAL

Entity_Type_Definition:

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

Entity_Type_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: ELEMENT

Attribute_Definition: Major categories of biological data.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: BIRD

        Enumerated_Domain_Value_Definition: Birds

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: FISH

        Enumerated_Domain_Value_Definition: Fish

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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

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

Attribute_Domain_Values:
> *Enumerated_Domain:*
>> *Enumerated_Domain_Value:* M_MAMMAL
>> *Enumerated_Domain_Value_Definition:* Marine Mammals
>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute_Domain_Values:
> *Enumerated_Domain:*
>> *Enumerated_Domain_Value:* REPTILE
>> *Enumerated_Domain_Value_Definition:* Reptiles and Amphibians
>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

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

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

Attribute:
> *Attribute_Label:* SEASON_ID
> *Attribute_Definition:*
>> Numeric identifier for the unique monthly presence and life history characteristics of each species at a given location.
> *Attribute_Definition_Source:* Research Planning, Inc.
> *Attribute_Domain_Values:*
>> *Range_Domain:*
>>> *Range_Domain_Minimum:* 1
>>> *Range_Domain_Maximum:* N

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

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

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

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

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

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

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

Attribute:
Attribute_Label: JUL
Attribute_Definition: July

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

Attribute:

 Attribute_Label: EL_SPE_SEA

 Attribute_Definition:

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

 Attribute_Definition_Source: Research Planning, Inc.

 Attribute_Domain_Values:

  Enumerated_Domain:

   Enumerated_Domain_Value: E#######

   Enumerated_Domain_Value_Definition:

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

   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Detailed_Description:

 Entity_Type:

  Entity_Type_Label: BREED

  Entity_Type_Definition:

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

  Entity_Type_Definition_Source: Research Planning, Inc.

 Attribute:

  Attribute_Label: EL_SPE_SEA

  Attribute_Definition:

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

  Attribute_Definition_Source: Research Planning, Inc.

  Attribute_Domain_Values:

   Enumerated_Domain:

    Enumerated_Domain_Value: E#######

    Enumerated_Domain_Value_Definition:

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

    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

 Attribute_Label: MONTH

 Attribute_Definition:

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

 Attribute_Definition_Source: Research Planning, Inc.

 Attribute_Domain_Values:

  Range_Domain:

   Range_Domain_Minimum: 1

   Range_Domain_Maximum: 12

Attribute:

 Attribute_Label: BREED1

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: Y

        Enumerated_Domain_Value_Definition: Life-history stage or activity present

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: N

        Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: -

        Enumerated_Domain_Value_Definition:

            Breed category not used or not appropriate for record(s) in question

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: BREED2

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: Y

        Enumerated_Domain_Value_Definition: Life-history stage or activity present

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: N

        Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: -

        Enumerated_Domain_Value_Definition:

            Breed category not used or not appropriate for record(s) in question

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: BREED3
Attribute_Definition:
>   Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED3 =
>   hatching; if ELEMENT is "FISH" then BREED3 = larvae; if ELEMENT is
>   "INVERT" then BREED3 = larvae; if ELEMENT is "REPTILE" then BREED3 =
>   internesting; if ELEMENT is "M_MAMMAL" then BREED3 = pupping. This
>   attribute is not used for HABITAT or T_MAMMAL elements.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
>   *Enumerated_Domain:*
>>   *Enumerated_Domain_Value:* Y
>>   *Enumerated_Domain_Value_Definition:* Life-history stage or activity present
>>   *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
Attribute_Domain_Values:
>   *Enumerated_Domain:*
>>   *Enumerated_Domain_Value:* N
>>   *Enumerated_Domain_Value_Definition:* Life-history stage or activity not
>>   present or not reported
>>   *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
Attribute_Domain_Values:
>   *Enumerated_Domain:*
>>   *Enumerated_Domain_Value:* -
>>   *Enumerated_Domain_Value_Definition:*
>>>   Breed category not used or not appropriate for record(s) in question
>>   *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:

Attribute_Label: BREED4
Attribute_Definition:
>   Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED4 =
>   fledging; 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 HABITAT or T_MAMMAL elements.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
>   *Enumerated_Domain:*
>>   *Enumerated_Domain_Value:* Y
>>   *Enumerated_Domain_Value_Definition:* Life-history stage or activity present
>>   *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
Attribute_Domain_Values:
>   *Enumerated_Domain:*
>>   *Enumerated_Domain_Value:* N
>>   *Enumerated_Domain_Value_Definition:* Life-history stage or activity not
>>   present or not reported
>>   *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.
Attribute_Domain_Values:
>   *Enumerated_Domain:*
>>   *Enumerated_Domain_Value:* -
>>   *Enumerated_Domain_Value_Definition:*
>>>   Breed category not used or not appropriate for record(s) in question
>>   *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:

    Attribute_Label: BREED5

    Attribute_Definition:

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

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: Y

            Enumerated_Domain_Value_Definition: Life-history stage or activity present

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: N

            Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: -

            Enumerated_Domain_Value_Definition:

                Breed category not used or not appropriate for record(s) in question

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Detailed_Description:

    Entity_Type:

        Entity_Type_Label: SOURCES

        Entity_Type_Definition:

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

        Entity_Type_Definition_Source: Research Planning, Inc.

    Attribute:

        Attribute_Label: SOURCE_ID

        Attribute_Definition:

            Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; and SOURCE_ID in the ESI, HYDRO, and SOCECON data layers.

        Attribute_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Range_Domain:

                Range_Domain_Minimum: 1

                Range_Domain_Maximum: N

    Attribute:

        Attribute_Label: ORIGINATOR

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

        Attribute_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: DATE_PUB

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: YYYYMM

Enumerated_Domain_Value_Definition: YYYY for year and optionally MM for month

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: TITLE

Attribute_Definition: Title of source material or data.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: DATA_FORMAT

Attribute_Definition: The format of the source material.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: PUBLICATION

Attribute_Definition: Additional citation information.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: SCALE

Attribute_Definition: Description of the source scale.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: TIME_PERIOD

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Detailed_Description:

Entity_Type:

Entity_Type_Label: STATUS

Entity_Type_Definition:

The data table STATUS identifies the species that are listed as either threatened or endangered by a state, federal, or international authority. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this

table relates to other attribute tables in the ESI data structure.
Entity_Type_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: ELEMENT
Attribute_Definition: Major categories of biological data.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: BIRD
Enumerated_Domain_Value_Definition: Birds
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: FISH
Enumerated_Domain_Value_Definition: Fish
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: HABITAT
Enumerated_Domain_Value_Definition: Habitats and Plants
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: INVERT
Enumerated_Domain_Value_Definition: Invertebrates
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: M_MAMMAL
Enumerated_Domain_Value_Definition: Marine Mammals
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: REPTILE
Enumerated_Domain_Value_Definition: Reptiles and Amphibians
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: T_MAMMAL
Enumerated_Domain_Value_Definition: Terrestrial Mammals
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: SPECIES_ID
Attribute_Definition:
Numeric identifier for each species that is unique within each element and refers to a
nationwide master ESI species list maintained at NOAA.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum: 1
Range_Domain_Maximum: N

Attribute:
  Attribute_Label: STATE
  Attribute_Definition: Two-letter state abbreviation.
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Unrepresentable_Domain: Acceptable values change from atlas to atlas.
Attribute:
  Attribute_Label: COUNTRY
  Attribute_Definition: Three-letter country abbreviation.
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Unrepresentable_Domain: Acceptable values change from atlas to atlas.
Attribute:
  Attribute_Label: S
  Attribute_Definition: State threatened or endangered status.
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: E
      Enumerated_Domain_Value_Definition: Endangered on state list
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: T
      Enumerated_Domain_Value_Definition: Threatened on state list
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
      Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: C
      Enumerated_Domain_Value_Definition: Species of Special Concern
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute:
  Attribute_Label: F
  Attribute_Definition: Federal threatened or endangered status.
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: E
      Enumerated_Domain_Value_Definition: Endangered on federal list
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: T
      Enumerated_Domain_Value_Definition: Threatened on federal list
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: C
      Enumerated_Domain_Value_Definition: Species of Special Concern
      Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute:

Attribute_Label: I
Attribute_Definition: International threatened or endangered status.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: E
        Enumerated_Domain_Value_Definition: Endangered on international list
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: T
        Enumerated_Domain_Value_Definition: Threatened on international list
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: C
        Enumerated_Domain_Value_Definition: Species of Special Concern
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute:
Attribute_Label: S_DATE
Attribute_Definition:
    Publication date of source material used to assign state status values for each
    species, if used.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: YYYYMM
        Enumerated_Domain_Value_Definition: YYYY for year and optionally MM
        for month
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: F_DATE
Attribute_Definition:
    Publication date of source material used to assign federal status values for each
    species, if used.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: YYYYMM
        Enumerated_Domain_Value_Definition: YYYY for year and optionally MM
        for month
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: I_DATE
Attribute_Definition:
    Publication date of source material used to assign international status values for each
    species, if used.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: YYYYMM

>>>>> *Enumerated_Domain_Value_Definition:* YYYY for year and optionally MM
for month
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
>> *Attribute:*
>>> *Attribute_Label:* EL_SPE
>>> *Attribute_Definition:*
>>>> Concatenation of ELEMENT and SPECIES_ID. This item links the STATUS data
table to the BIORES and SPECIES data tables.
>>> *Attribute_Definition_Source:* Research Planning, Inc.
>>> *Attribute_Domain_Values:*
>>>> *Enumerated_Domain:*
>>>>> *Enumerated_Domain_Value:* E#####
Enumerated_Domain_Value_Definition:
>>>>>> Where E is the first character of ELEMENT and the next five characters
are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1;
EL_SPE = 'B00001').
>>>>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Distribution_Information:
> *Distributor:*
>> *Contact_Information:*
>>> *Contact_Person_Primary:*
>>>> *Contact_Person:* John Kaperick
>>>> *Contact_Organization:* NOAA, Office of Response and Restoration
>>> *Contact_Address:*
>>>> *Address_Type:* Physical Address
>>>> *Address:* 7600 Sand Point Way N.E.
>>>> *City:* Seattle
>>>> *State_or_Province:* Washington
>>>> *Postal_Code:* 98115-6349
>>> *Contact_Voice_Telephone:* (206) 526-6400
>>> *Contact_Facsimile_Telephone:* (206) 526-6329
> *Resource_Description:*
>> ESI Atlas for Puget Sound and Strait of Juan de Fuca, Washington
> *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 a Geodatabase; ARC export, MOSS, and Shape files; and MARPLOT map folders. An
ArcMap .mxd file, an ArcView 3.x ESI project, and an 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: 200607
    Metadata_Review_Date: 200607
    Metadata_Contact:
        Contact_Information:
            Contact_Person_Primary:
                Contact_Person: Jill Petersen
                Contact_Organization: NOAA, Office of Response and Restoration
            Contact_Position: GIS Manager
            Contact_Address:
                Address_Type: Physical Address
                Address: 7600 Sand Point Way N.E.
                City: Seattle
                State_or_Province: Washington
                Postal_Code: 98115-6349
            Contact_Voice_Telephone: (206) 526-6944
            Contact_Facsimile_Telephone: (206) 526-6329
            Contact_Electronic_Mail_Address: Jill.Petersen@noaa.gov
    Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
    Metadata_Standard_Version: FGDC-STD-001-1998

Generated by mp version 2.8.21 on Mon Jul 24 12:41:03 2006

Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Puget Sound and Strait of Juan de Fuca, Washington: 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.
            Publication_Date: 200607
            Title:
                Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Puget Sound and
                Strait of Juan de Fuca, Washington: HABITATS (Habitat Polygons)
            Edition: First
            Geospatial_Data_Presentation_Form: Vector digital data
            Series_Information:
                Series_Name: None
                Issue_Identification: Puget Sound and Strait of Juan de Fuca, Washington
            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:
                Funding was provided by Navy Region Northwest. This data set was prepared by
                Concurrent Technologies Corporation, Bremerton, Washington, and Sound GIS,
                Seattle, Washington with support from 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.

Description:

Abstract:

This data set contains sensitive biological resource data for marine and estuarine vegetation in Puget Sound and Strait of Juan de Fuca, Washington. Vector polygons in this data set represent locations of concentrations areas for kelp and eelgrass. 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 Puget Sound and Strait of Juan de Fuca, Washington. 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 HABITATL (Habitat Lines) data layer, part of the larger Puget Sound and Strait of Juan de Fuca ESI database, for additional habitat information.

Purpose:

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

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1994

Ending_Date: 2003

Currentness_Reference:

The biological data were compiled during 2005-2006. The currentness dates for this data range from 1994 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: -124.75100

East_Bounding_Coordinate: -122.12600

North_Bounding_Coordinate: 49.00000

South_Bounding_Coordinate: 47.00000

Keywords:

Theme:

Theme_Keyword_Thesaurus: None

Theme_Keyword: ESI

Theme_Keyword: Sensitivity maps

Theme_Keyword: Coastal resources

Theme_Keyword: Oil spill planning

Theme_Keyword: Coastal Zone Management

Theme_Keyword: Wildlife

Theme_Keyword: Habitats

Place:

Place_Keyword_Thesaurus: None

Place_Keyword: Puget Sound and Strait of Juan de Fuca, Washington
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 Puget Sound and Strait of Juan de Fuca, Washington ESI data.

Browse_Graphic_File_Type: JPEG

Data_Set_Credit:

This project was funded by Navy Region Northwest and supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 9.1) and SQL SERVER(r) (version 2000). The hardware configuration is PC's with Windows Operating System (2000/XP/2003).

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, habitatl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mampt.e00, mgt.e00, nests.e00, socecon.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report:

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

Logical_Consistency_Report:

A multi-stage error checking process, described in the above Attribute_Accuracy_Report, is used

to verify both attribute accuracy and logical consistency throughout data production. This process includes multiple automated logical consistency checks that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and SQL SERVER(r) to ARC/INFO(r) consistencies. A final review is made by the GIS manager, where the data are written to CD-ROM and the metadata are written.

After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks. In the process of checking for topological and database consistencies, new ID's and RARNUM's or HUNUM's are also generated. The new ID's are a combination of atlas number, element number, and record number. In addition, the value used to represent the element is modified to reflect the type of feature being mapped. In the case of an element that is normally represented by a point or polygon, a value of 20 is added to the standard element value for mapping of linear features. In the case where an element usually mapped as a polygon is represented by a point, a value of 30 is added to the regular element value. The RARNUM's are also modified to include the atlas number, so multiple atlases can be combined and RARNUM's remain unique. RARNUM's are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUM's are also modified to include the atlas number.

Completeness_Report:
These data represent a synthesis of digital data on kelp and eelgrass concentration areas. This information was adapted from various Washington Department of Natural Resources (WDNR) databases. Contact WDNR for additional information on these databases. See also the HABITATL (Habitat Lines) data layer, part of the larger Puget Sound and Strait of Juan de Fuca, Washington ESI database, for additional habitat information. These data do not necessarily represent all habitats occurrences in Puget Sound and Strait of Juan de Fuca. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 1, Eelgrass, Zostera marina; 1056, Kelp, n/a.

Positional_Accuracy:
    Horizontal_Positional_Accuracy:
        Horizontal_Positional_Accuracy_Report:
Spatial components for the biological data layers can come from expert interviews, hardcopy, or digital sources. Some of the spatial components of the biological data layers may have been developed using regional experts who estimate concentration areas. It is difficult to estimate the positional accuracy of such data, except to state that they are compiled on hardcopy base maps with a scale of 1:24,000. Some of the spatial components of the biological data sets are developed from pre-existing digital or hardcopy sources and reflect the positional accuracy of these original data. See the Lineage and Process_Description sections for more information on the original data source and how these data were integrated or manipulated to create the final data set. Note that biological resource data by their very nature are considered "fuzzy", and this should be understood when considering the positional accuracy of vector digital objects representing these resources.

Lineage:
    Source_Information:
        Source_Citation:
            Citation_Information:
                Originator: WASHINGTON DEPARTMENT OF NATURAL RESOURCES (WDNR)
                Publication_Date: 1999
                Title: PUGET SOUND INTERTIDAL HABITAT INVENTORY
                Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA

Other_Citation_Details:
DATA CONTACT: HELEN BERRY, WDNR,
<http://www.dnr.wa.gov/dataandmaps/index.html>
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 1996
Source_Currentness_Reference: GROUND CONDITION
Source_Citation_Abbreviation: NONE
Source_Contribution: HABITATS INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: WASHINGTON DEPARTMENT OF NATURAL RESOURCES
(WDNR)
Publication_Date: 1997
Title: PUGET SOUND INTERTIDAL HABITAT INVENTORY
Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
Other_Citation_Details:
DATA CONTACT: HELEN BERRY, WDNR,
<http://www.dnr.wa.gov/dataandmaps/index.html>
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 1995
Source_Currentness_Reference: GROUND CONDITION
Source_Citation_Abbreviation: NONE
Source_Contribution: HABITATS INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: WASHINGTON DEPARTMENT OF NATURAL RESOURCES
(WDNR)
Publication_Date: 2005
Title:
WASHINGTON STATE FLOATING KELP INVENTORY OF THE
STRAIT OF JUAN DE FUCA AND OUTER COAST
Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
Other_Citation_Details:
DATA CONTACT: HELEN BERRY, WDNR,
<http://www.dnr.wa.gov/dataandmaps/index.html>
Source_Scale_Denominator: 12000
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date: 1989
Ending_Date: 2004
Source_Currentness_Reference: GROUND CONDITION

Source_Citation_Abbreviation: NONE
Source_Contribution: HABITATS INFORMATION
Process_Step:
    Process_Description:

Three sources of data were used to depict kelp and eelgrass distribution for this data layer: (1) Washington Department of Natural Resource's (WDNR) Floating Kelp Inventory of the Strait of Juan de Fuca and Outer Coast, (2) WDNR's Intertidal Shoreline Characteristics Inventory 1995, Whatcom County Area, Washington, and (3) Intertidal Shoreline Characteristics Inventory 1996, Skagit County and Northern Whidbey Island, Washington.

From the WDNR floating kelp data, we extracted polygons depicting any occurrence of kelp throughout the entire time period (1989-2004). From the other two data sources, we included any kelp and eelgrass polygon that occurred on broad flats or in areas not depicted by the ShoreZone Inventory data (see the Habitat Lines data layer).

The above digital and/or hardcopy sources were compiled by the project biologist to create the HABITATS data layer. Depending on the type of source data, three general approaches are used for compiling a biology data layer: (1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles and digitized; (2) hardcopy maps are digitized at their source scale; (3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer.

Process_Date: 200603
Process_Contact:
    Contact_Information:
        Contact_Organization_Primary:
            Contact_Organization: Concurrent Technologies Corporation
            Contact_Person: Allison Bailey
        Contact_Address:
            Address_Type: Physical address
            Address: 5780 W. Werner Road
            City: Bremerton
            State_or_Province: Washington
            Postal_Code: 98312
        Contact_Voice_Telephone: (206) 459-2301
        Contact_Voice_Telephone: (360) 782-5500
        Contact_Facsimile_Telephone: (360) 782-5594
        Contact_Electronic_Mail_Address: allison@soundgis.com
Process_Step:
    Process_Description:

The compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. If necessary, edits to the HABITATS data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.

Process_Date: 200605
Process_Contact:

Contact_Information:
    Contact_Organization_Primary:
        Contact_Organization: NOAA
        Contact_Person: Jill Petersen
    Contact_Address:
        Address_Type: Physical address
        Address: 7600 Sand Point Way N.E.
        City: Seattle
        State_or_Province: Washington
        Postal_Code: 98115-6349
    Contact_Voice_Telephone: (206) 526-6944
    Contact_Facsimile_Telephone: (206) 526-6329
    Contact_Electronic_Mail_Address: Jill.Petersen@noaa.gov

Spatial_Data_Organization_Information:
    Direct_Spatial_Reference_Method: Vector
    Point_and_Vector_Object_Information:
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: GT-polygon composed of chains
            Point_and_Vector_Object_Count: 5211
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Area point
            Point_and_Vector_Object_Count: 5212
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Complete chain
            Point_and_Vector_Object_Count: 5856
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Link
            Point_and_Vector_Object_Count: 339669
        SDTS_Terms_Description:
            SDTS_Point_and_Vector_Object_Type: Node, planar graph
            Point_and_Vector_Object_Count: 5375

Spatial_Reference_Information:
    Horizontal_Coordinate_System_Definition:
        Geographic:
            Latitude_Resolution: 0.000001
            Longitude_Resolution: 0.000001
            Geographic_Coordinate_Units: Decimal degrees
        Geodetic_Model:
            Horizontal_Datum_Name: North American Datum of 1983
            Ellipsoid_Name: Geodetic Reference System 80
            Semi-major_Axis: 6378137.000000
            Denominator_of_Flattening_Ratio: 298.257222

Entity_and_Attribute_Information:
    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 Puget Sound and Strait of Juan de Fuca atlas, the number is 79), an element/layer specific number (BIRDS are layer 1, FISH are layer 2, etc.), and a unique record number. The RARNUM represents a unique combination of species, seasonalities, concentrations, and source information. For each of these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases. BIORES and the other relational data tables are described below in detail. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way these tables relate to the geographic data layers and other attribute tables in the ESI data structure.

Due to the complexity of the relational database model, the data items are also post-processed into a flat file format. This table, called BIOFILE, may be used in place of the relational files described below to ease simple data queries. The items in the flat file are ELEMENT, SUBELEMENT, NAME, GEN_SPEC, S, F, NHP, DATE_PUB, CONC, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC, BREED1, BREED2, BREED3, BREED4, BREED5, RARNUM, G_SOURCE, S_SOURCE, and BREED. All of these items are the same as their counterparts in the individual data tables described below, except the BREED1-BREED5 and BREED items. BREED is a newly generated variable used to link to the BREED_DT data table, a modified, more compact version of the relational BREED data table. BREED1-BREED5 give a text summary of when each life stage occurs within the associated map object. The life stages referred to are the same as those listed in the Detailed_Description of the BREED data table. The link to the BIOFILE may be made through the BIO_LUT, using ID to link to RARNUM, or BIOFILE may be linked directly to the RARNUM in each of the geographic layer's attribute data tables. As mentioned, BREED_DT is an auxiliary support data table to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item.

A second supporting data table is SOURCES. This is the same as the source file described above, and the link from the flat file is both G_SOURCE and S_SOURCE. It should be noted that although the flat file eases data query, it is not a normalized database structure, and actual updates performed by the states and other responsible agencies should be done using the relational data tables. The entity-relationship diagram, describing relationships between attribute tables in the ESI data structure, does NOT include the BIOFILE data table, and this data table is NOT described in detail below.

Detailed_Description:
   Entity_Type:
      Entity_Type_Label: HABITATS.PAT
      Entity_Type_Definition:
         The HABITATS.PAT table contains attribute information for the vector polygons in this data set representing locations of concentrations areas for kelp and eelgrass. 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 (79), 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: 0790300002

Range_Domain_Maximum: 0790305215

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: 079000640

Range_Domain_Maximum: 079000644

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: 079000001

Range_Domain_Maximum: 079000797

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 (79), 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: 0790100002
  Range_Domain_Maximum: 0793400327
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: 079000001
    Range_Domain_Maximum: 079000797
 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 concentration data were available for habitats, so the
   concentration 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: alcid
      Enumerated_Domain_Value_Definition: Alcid
      Enumerated_Domain_Value_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: cephalopod
      Enumerated_Domain_Value_Definition: Cephalopod
      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: echinoderm
      Enumerated_Domain_Value_Definition: Echinoderm
      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: 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: kelp

Enumerated_Domain_Value_Definition: Kelp

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: m_benthic

Enumerated_Domain_Value_Definition: Marine benthic fish

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: m_pelagic

Enumerated_Domain_Value_Definition: Marine pelagic fish

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: pelagic

Enumerated_Domain_Value_Definition: Pelagic bird

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: pinniped

Enumerated_Domain_Value_Definition: Pinniped

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 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: sea otter

Enumerated_Domain_Value_Definition: Sea otter

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: shrimp
  Enumerated_Domain_Value_Definition: Shrimps
  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_Domain_Values:
  Enumerated_Domain:
   Enumerated_Domain_Value: 0
   Enumerated_Domain_Value_Definition: Date unspecified
   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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

EL_SPE = 'B00001').

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Detailed_Description:

    Entity_Type:

        Entity_Type_Label: SEASONAL

        Entity_Type_Definition:

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

        Entity_Type_Definition_Source: Research Planning, Inc.

    Attribute:

        Attribute_Label: ELEMENT

        Attribute_Definition: Major categories of biological data.

        Attribute_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

                Enumerated_Domain_Value: BIRD

                Enumerated_Domain_Value_Definition: Birds

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

                Enumerated_Domain_Value: FISH

                Enumerated_Domain_Value_Definition: Fish

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

                Enumerated_Domain_Value: HABITAT

                Enumerated_Domain_Value_Definition: Habitats and Plants

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

                Enumerated_Domain_Value: INVERT

                Enumerated_Domain_Value_Definition: Invertebrates

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

                Enumerated_Domain_Value: M_MAMMAL

                Enumerated_Domain_Value_Definition: Marine Mammals

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

                Enumerated_Domain_Value: REPTILE

                Enumerated_Domain_Value_Definition: Reptiles and Amphibians

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

                Enumerated_Domain_Value: T_MAMMAL

                Enumerated_Domain_Value_Definition: Terrestrial Mammals

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute:

Attribute_Label: SPECIES_ID
Attribute_Definition:
Numeric identifier for each species that is unique within each element and refers to a
nationwide ESI species list maintained at NOAA.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum: 1
Range_Domain_Maximum: N
Attribute:
Attribute_Label: SEASON_ID
Attribute_Definition:
Numeric identifier for the unique monthly presence and life history characteristics
of each species at a given location.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum: 1
Range_Domain_Maximum: N
Attribute:
Attribute_Label: JAN
Attribute_Definition: January
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: X
Enumerated_Domain_Value_Definition: Present in January
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: FEB
Attribute_Definition: February
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: X
Enumerated_Domain_Value_Definition: Present in February
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: MAR
Attribute_Definition: March
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: X
Enumerated_Domain_Value_Definition: Present in March
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: APR
Attribute_Definition: April
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

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

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

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

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

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

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

Attribute:
Attribute_Label: OCT

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

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

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

Attribute:
Attribute_Label: EL_SPE_SEA
Attribute_Definition:
 Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links
 records in the SEASONAL data table to records in the BIORES and BREED data
 tables.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
 Enumerated_Domain:
  Enumerated_Domain_Value: E#######
  Enumerated_Domain_Value_Definition:
   Where E is the first character of ELEMENT, the next five characters are
   SPECIES_ID, and the last two characters are SEASON_ID (e.g.
   ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1;
   EL_SPE_SEA = 'B0000101').
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Detailed_Description:
Entity_Type:
Entity_Type_Label: BREED
Entity_Type_Definition:
 The data table BREED identifies the monthly presence of certain life-history stages
 or activities for each species at a given location.
Entity_Type_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: EL_SPE_SEA
Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: E#######

Enumerated_Domain_Value_Definition:

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

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: MONTH

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 1

Range_Domain_Maximum: 12

Attribute:

Attribute_Label: BREED1

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Y

Enumerated_Domain_Value_Definition: Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: N

Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: -

Enumerated_Domain_Value_Definition:

Breed category not used or not appropriate for record(s) in question

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: BREED2

        Attribute_Definition:

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

        Attribute_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

                Enumerated_Domain_Value: Y

                Enumerated_Domain_Value_Definition: Life-history stage or activity present

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

                Enumerated_Domain_Value: N

                Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

                Enumerated_Domain_Value: -

                Enumerated_Domain_Value_Definition:

                    Breed category not used or not appropriate for record(s) in question

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

        Attribute_Label: BREED3

        Attribute_Definition:

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

        Attribute_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

                Enumerated_Domain_Value: Y

                Enumerated_Domain_Value_Definition: Life-history stage or activity present

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

                Enumerated_Domain_Value: N

                Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

        Attribute_Domain_Values:

            Enumerated_Domain:

                Enumerated_Domain_Value: -

                Enumerated_Domain_Value_Definition:

                    Breed category not used or not appropriate for record(s) in question

                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: BREED4

Attribute_Definition:

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED4 = fledging; 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 HABITAT or T_MAMMAL elements.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Y

Enumerated_Domain_Value_Definition: Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: N

Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: -

Enumerated_Domain_Value_Definition:

Breed category not used or not appropriate for record(s) in question

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: BREED5

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Y

Enumerated_Domain_Value_Definition: Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: N

Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: -

Enumerated_Domain_Value_Definition:

Breed category not used or not appropriate for record(s) in question

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Detailed_Description:

Entity_Type:

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

Attribute:

> *Attribute_Label:* SOURCE_ID
>
> *Attribute_Definition:*
>
>> Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; and SOURCE_ID in the ESI, HYDRO, and SOCECON data layers.
>
> *Attribute_Definition_Source:* Research Planning, Inc.
>
> *Attribute_Domain_Values:*
>
>> *Range_Domain:*
>>
>>> *Range_Domain_Minimum:* 1
>>>
>>> *Range_Domain_Maximum:* N

Attribute:

> *Attribute_Label:* ORIGINATOR
>
> *Attribute_Definition:* Author or developer of source material or data set.
>
> *Attribute_Definition_Source:* Research Planning, Inc.
>
> *Attribute_Domain_Values:*
>
>> *Unrepresentable_Domain:* Acceptable values change from atlas to atlas.

Attribute:

> *Attribute_Label:* DATE_PUB
>
> *Attribute_Definition:*
>
>> Date of source material, publication, or date of personal communication with expert source.
>
> *Attribute_Definition_Source:* Research Planning, Inc.
>
> *Attribute_Domain_Values:*
>
>> *Enumerated_Domain:*
>>
>>> *Enumerated_Domain_Value:* YYYYMM
>>>
>>> *Enumerated_Domain_Value_Definition:* YYYY for year and optionally MM for month
>>>
>>> *Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

Attribute:

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

Attribute:

> *Attribute_Label:* DATA_FORMAT
>
> *Attribute_Definition:* The format of the source material.
>
> *Attribute_Definition_Source:* Research Planning, Inc.
>
> *Attribute_Domain_Values:*
>
>> *Unrepresentable_Domain:* Acceptable values change from atlas to atlas.

Attribute:

    Attribute_Label: PUBLICATION

    Attribute_Definition: Additional citation information.

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

      Unrepresentable_Domain: Acceptable values change from atlas to atlas.

   Attribute:

    Attribute_Label: SCALE

    Attribute_Definition: Description of the source scale.

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

      Unrepresentable_Domain: Acceptable values change from atlas to atlas.

   Attribute:

    Attribute_Label: TIME_PERIOD

    Attribute_Definition:

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

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

      Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Detailed_Description:

  Entity_Type:

   Entity_Type_Label: STATUS

   Entity_Type_Definition:

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

   Entity_Type_Definition_Source: Research Planning, Inc.

  Attribute:

   Attribute_Label: ELEMENT

   Attribute_Definition: Major categories of biological data.

   Attribute_Definition_Source: Research Planning, Inc.

   Attribute_Domain_Values:

    Enumerated_Domain:

     Enumerated_Domain_Value: BIRD

     Enumerated_Domain_Value_Definition: Birds

     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

   Attribute_Domain_Values:

    Enumerated_Domain:

     Enumerated_Domain_Value: FISH

     Enumerated_Domain_Value_Definition: Fish

     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

   Attribute_Domain_Values:

    Enumerated_Domain:

     Enumerated_Domain_Value: HABITAT

     Enumerated_Domain_Value_Definition: Habitats and Plants

     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

   Attribute_Domain_Values:

    Enumerated_Domain:

     Enumerated_Domain_Value: INVERT

     Enumerated_Domain_Value_Definition: Invertebrates

     Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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

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

Attribute:
    Attribute_Label: STATE
    Attribute_Definition: Two-letter state abbreviation.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:
    Attribute_Label: COUNTRY
    Attribute_Definition: Three-letter country abbreviation.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Unrepresentable_Domain: Acceptable values change from atlas to atlas.

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

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

Attribute:
  Attribute_Label: F
  Attribute_Definition: Federal threatened or endangered status.
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: E
        Enumerated_Domain_Value_Definition: Endangered on federal list
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: T
        Enumerated_Domain_Value_Definition: Threatened on federal list
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: C
        Enumerated_Domain_Value_Definition: Species of Special Concern
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: I
  Attribute_Definition: International threatened or endangered status.
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: E
        Enumerated_Domain_Value_Definition: Endangered on international list
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: T
        Enumerated_Domain_Value_Definition: Threatened on international list
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
  Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: C
        Enumerated_Domain_Value_Definition: Species of Special Concern
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

Attribute:
  Attribute_Label: S_DATE
  Attribute_Definition:
    Publication date of source material used to assign state status values for each
    species, if used.
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:

Enumerated_Domain_Value: YYYYMM

Enumerated_Domain_Value_Definition: YYYY for year and optionally MM for month

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: F_DATE

Attribute_Definition:

Publication date of source material used to assign federal status values for each species, if used.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: YYYYMM

Enumerated_Domain_Value_Definition: YYYY for year and optionally MM for month

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: I_DATE

Attribute_Definition:

Publication date of source material used to assign international status values for each species, if used.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: YYYYMM

Enumerated_Domain_Value_Definition: YYYY for year and optionally MM for month

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: EL_SPE

Attribute_Definition:

Concatenation of ELEMENT and SPECIES_ID. This item links the STATUS data table to the BIORES and SPECIES data tables.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: E#####

Enumerated_Domain_Value_Definition:

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

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Distribution_Information:

Distributor:

Contact_Information:

Contact_Person_Primary:

Contact_Person: John Kaperick

Contact_Organization: NOAA, Office of Response and Restoration

Contact_Address:

Address_Type: Physical Address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6400
Contact_Facsimile_Telephone: (206) 526-6329
Resource_Description:
ESI Atlas for Puget Sound and Strait of Juan de Fuca, Washington
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 a Geodatabase; ARC export, MOSS, and Shape files; and MARPLOT map folders. An ArcMap .mxd file, an ArcView 3.x ESI project, and an 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: 200607
Metadata_Review_Date: 200607
Metadata_Contact:
Contact_Information:
Contact_Person_Primary:
Contact_Person: Jill Petersen
Contact_Organization: NOAA, Office of Response and Restoration
Contact_Position: GIS Manager
Contact_Address:
Address_Type: Physical Address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: Jill.Petersen@noaa.gov
Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998

Generated by mp version 2.8.21 on Mon Jul 24 12:45:33 2006

Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Puget Sound and Strait of Juan de Fuca, Washington: HABITATL (Habitat 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.
>>> *Publication_Date:* 200607
>>> *Title:*
>>>> Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Puget Sound and Strait of Juan de Fuca, Washington: HABITATL (Habitat Lines)
>>> *Edition:* First
>>> *Geospatial_Data_Presentation_Form:* Vector digital data
>>> *Series_Information:*
>>>> *Series_Name:* None
>>>> *Issue_Identification:* Puget Sound and Strait of Juan de Fuca, Washington
>>> *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:*
>>>> Funding was provided by Navy Region Northwest. This data set was prepared by Concurrent Technologies Corporation, Bremerton, Washington, and Sound GIS, Seattle, Washington with support from 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.

Description:

    Abstract:

        This data set contains sensitive biological resource data for marine and estuarine vegetation in Puget Sound and Strait of Juan de Fuca, Washington. Vector lines in this data set represent shoreline segments with kelp and eelgrass in Puget Sound and Strait of Juan de Fuca. 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 Puget Sound and Strait of Juan de Fuca, Washington. ESI data characterize the marine and coastal environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources. See also the HABITATS (Habitat Polygons) data layer, part of the larger Puget Sound and Strait of Juan de Fuca ESI database, for additional habitat information.

    Purpose:

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

Time_Period_of_Content:

    Time_Period_Information:

        Range_of_Dates/Times:

            Beginning_Date: 1994

            Ending_Date: 2003

    Currentness_Reference:

        The biological data were compiled during 2005-2006. The currentness dates for the data range from 1994 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: -124.75100

        East_Bounding_Coordinate: -122.12600

        North_Bounding_Coordinate: 49.00000

        South_Bounding_Coordinate: 47.00000

Keywords:

    Theme:

        Theme_Keyword_Thesaurus: None

        Theme_Keyword: ESI

        Theme_Keyword: Sensitivity maps

        Theme_Keyword: Coastal resources

        Theme_Keyword: Oil spill planning

        Theme_Keyword: Coastal Zone Management

        Theme_Keyword: Wildlife

        Theme_Keyword: Habitats

    Place:

        Place_Keyword_Thesaurus: None

Place_Keyword: Puget Sound and Strait of Juan de Fuca, Washington
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 Puget Sound and Strait of Juan de Fuca, Washington ESI data.

Browse_Graphic_File_Type: JPEG

Data_Set_Credit:

This project was funded by Navy Region Northwest and supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 9.1) and SQL SERVER(r) (version 2000). The hardware configuration is PC's with Windows Operating System (2000/XP/2003).

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, habitatl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mampt.e00, mgt.e00, nests.e00, socecon.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report:

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

Logical_Consistency_Report:

A multi-stage error checking process, described in the above Attribute_Accuracy_Report, is used

to verify both attribute accuracy and logical consistency throughout data production. This process includes multiple automated logical consistency checks that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and SQL SERVER(r) to ARC/INFO(r) consistencies. A final review is made by the GIS manager, where the data are written to CD-ROM and the metadata are written.

After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks. In the process of checking for topological and database consistencies, new ID's and RARNUM's or HUNUM's are also generated. The new ID's are a combination of atlas number, element number, and record number. In addition, the value used to represent the element is modified to reflect the type of feature being mapped. In the case of an element that is normally represented by a point or polygon, a value of 20 is added to the standard element value for mapping of linear features. In the case where an element usually mapped as a polygon is represented by a point, a value of 30 is added to the regular element value. The RARNUM's are also modified to include the atlas number, so multiple atlases can be combined and RARNUM's remain unique. RARNUM's are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUM's are also modified to include the atlas number.

Completeness_Report:

These data represent a synthesis of digital data on kelp and eelgrass areas. This information was adapted from Washington Department of Natural Resource's (WDNR) ShoreZone Inventory and Friends of the San Juans eelgrass survey. Contact WDNR and Friends of the San Juans for additional information on these databases. See also the HABITATS (Habitat Polygons) data layer, part of the larger Puget Sound and Strait of Juan de Fuca, Washington ESI database, for additional habitat information. These data do not necessarily represent all habitat occurrences in Puget Sound and Strait of Juan de Fuca. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 1, Eelgrass, Zostera marina; 1056, Kelp, n/a.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

Spatial components for the biological data layers can come from expert interviews, hardcopy, or digital sources. Some of the spatial components of the biological data layers may have been developed using regional experts who estimate concentration areas. It is difficult to estimate the positional accuracy of such data, except to state that they are compiled on hardcopy base maps with a scale of 1:24,000. Some of the spatial components of the biological data sets are developed from pre-existing digital or hardcopy sources and reflect the positional accuracy of these original data. See the Lineage and Process_Description sections for more information on the original data source and how these data were integrated or manipulated to create the final data set. Note that biological resource data by their very nature are considered "fuzzy", and this should be understood when considering the positional accuracy of vector digital objects representing these resources.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: FRIENDS OF THE SAN JUANS

Publication_Date: 2004

Title: SAN JUAN COUNTY EELGRASS SURVEY AND MAPPING PROJECT

Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
Other_Citation_Details:
DATA CONTACT: FRIENDS OF THE SAN JUANS, P.O. BOX 1344,
FRIDAY HARBOR, WA 98250
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 2003
Source_Currentness_Reference: GROUND CONDITION
Source_Citation_Abbreviation: NONE
Source_Contribution: HABITATL INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: WASHINGTON DEPARTMENT OF NATURAL RESOURCES
Publication_Date: 2001
Title: WASHINGTON STATE SHOREZONE INVENTORY
Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
Other_Citation_Details:
DATA CONTACT: HELEN BERRY, WDNR,
<http://www.dnr.wa.gov/dataandmaps/index.html>
Source_Scale_Denominator: 24000
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date: 1994
Ending_Date: 2000
Source_Currentness_Reference: GROUND CONDITION
Source_Citation_Abbreviation: NONE
Source_Contribution: HABITATL INFORMATION
Process_Step:
Process_Description:
Two sources of data were used to depict kelp and eelgrass distribution for this data
layer: (1) Washington Department of Natural Resource's (WDNR) ShoreZone
Inventory, and (2) Friends of the San Juans' San Juan County Eelgrass Survey.

From the ShoreZone data, we extracted all shoreline segments that indicated patchy
or continuous floating kelp or eelgrass. To avoid redundancy with the HABITAT
polygon layer, we removed any segments along the Strait of Juan de Fuca that
contained only kelp. To maintain a consistent spatial context, the eelgrass segments
from the Friends of the San Juan data were used as a guide to code additional
segments of the ShoreZone shoreline in San Juan County that do not currently
indicate the presence of eelgrass.

The above digital and/or hardcopy sources were compiled by the project biologist to
create the HABITATL data layer. Depending on the type of source data, three
general approaches are used for compiling a biology data layer: (1) information
gathered during initial interviews and from hardcopy sources are compiled onto U.S.
Geological Survey 1:24,000 topographic quadrangles and digitized; (2) hardcopy

maps are digitized at their source scale; (3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer.

Process_Date: 200603
Process_Contact:
 Contact_Information:
  Contact_Organization_Primary:
   Contact_Organization: Concurrent Technologies Corporation
   Contact_Person: Allison Bailey
  Contact_Address:
   Address_Type: Physical address
   Address: 5780 W. Werner Road
   City: Bremerton
   State_or_Province: Washington
   Postal_Code: 98312
  Contact_Voice_Telephone: (206) 459-2301
  Contact_Voice_Telephone: (360) 782-5500
  Contact_Facsimile_Telephone: (360) 782-5594
  Contact_Electronic_Mail_Address: allison@soundgis.com
Process_Step:
 Process_Description:
  The compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. If necessary, edits to the HABITATL data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.
 Process_Date: 200605
 Process_Contact:
  Contact_Information:
   Contact_Organization_Primary:
    Contact_Organization: NOAA
    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: 3910
  SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 81667
SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 4616

Spatial_Reference_Information:
    Horizontal_Coordinate_System_Definition:
        Geographic:
            Latitude_Resolution: 0.000001
            Longitude_Resolution: 0.000001
            Geographic_Coordinate_Units: Decimal degrees
        Geodetic_Model:
            Horizontal_Datum_Name: North American Datum of 1983
            Ellipsoid_Name: Geodetic Reference System 80
            Semi-major_Axis: 6378137.000000
            Denominator_of_Flattening_Ratio: 298.257222

Entity_and_Attribute_Information:
    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, HABITATL) 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 Puget Sound and Strait of Juan de Fuca atlas, the number is 79), 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:* HABITATL.AAT
>> *Entity_Type_Definition:*
>>> The HABITATL.AAT table contains attribute information for the vector lines in this data set representing data for marine and estuarine vegetation. 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 (79), element number (23; 20 because it is a line feature, plus 3, the element value for HABITATS), and record number.
>> *Attribute_Definition_Source:* NOAA
>> *Attribute_Domain_Values:*
>>> *Range_Domain:*
>>>> *Range_Domain_Minimum:* 0792300025
>>>> *Range_Domain_Maximum:* 0792303906
> *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:* 079000645
>>>> *Range_Domain_Maximum:* 079000654
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: 079000001

Range_Domain_Maximum: 079000797

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 (79), element number (23; 20 because it is a line feature, plus 3, the element value for HABITATS), 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: 0790100002

Range_Domain_Maximum: 0793400327

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: 079000001

Range_Domain_Maximum: 079000797

Attribute:

Attribute_Label: SPECIES_ID

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 1

Range_Domain_Maximum: N

Attribute:

Attribute_Label: CONC

Attribute_Definition:

The field CONC refers to "concentration," abundance, or density values. No quantitative concentration data were available for this data layer, so the CONC field contains descriptive terms, such as "patchy" or "continuous"..

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: alcid
  Enumerated_Domain_Value_Definition: Alcid
  Enumerated_Domain_Value_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: cephalopod
  Enumerated_Domain_Value_Definition: Cephalopod

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: echinoderm
        Enumerated_Domain_Value_Definition: Echinoderm
        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: 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: kelp
        Enumerated_Domain_Value_Definition: Kelp
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: m_benthic
        Enumerated_Domain_Value_Definition: Marine benthic fish
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: m_pelagic
        Enumerated_Domain_Value_Definition: Marine pelagic fish
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: pelagic
        Enumerated_Domain_Value_Definition: Pelagic bird
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: pinniped
        Enumerated_Domain_Value_Definition: Pinniped
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: 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: sea otter
        Enumerated_Domain_Value_Definition: Sea otter
        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: shrimp
        Enumerated_Domain_Value_Definition: Shrimps
        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_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: 0
        Enumerated_Domain_Value_Definition: Date unspecified
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
    Attribute_Label: EL_SPE
    Attribute_Definition:
        Concatenation of ELEMENT and SPECIES_ID. This item links records in the
        SPECIES data table to records in the BIORES and STATUS data tables.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: E#####
            Enumerated_Domain_Value_Definition:
                Where E is the first character of ELEMENT and the next five characters
                are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1;
                EL_SPE = 'B00001').
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Detailed_Description:
    Entity_Type:
        Entity_Type_Label: SEASONAL
        Entity_Type_Definition:
            The data table SEASONAL contains information on the seasonal presence of each
            species associated with each spatial vector object. See the Browse_Graphic section
            for a link to the entity-relationship diagram, which describes the way this table
            relates to other attribute tables in the ESI data structure.
        Entity_Type_Definition_Source: Research Planning, Inc.
    Attribute:
        Attribute_Label: ELEMENT
        Attribute_Definition: Major categories of biological data.
        Attribute_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: BIRD
                Enumerated_Domain_Value_Definition: Birds
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:
                Enumerated_Domain_Value: FISH
                Enumerated_Domain_Value_Definition: Fish
                Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Enumerated_Domain:

Enumerated_Domain_Value: HABITAT
Enumerated_Domain_Value_Definition: Habitats and Plants
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: INVERT
Enumerated_Domain_Value_Definition: Invertebrates
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: M_MAMMAL
Enumerated_Domain_Value_Definition: Marine Mammals
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: REPTILE
Enumerated_Domain_Value_Definition: Reptiles and Amphibians
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: T_MAMMAL
Enumerated_Domain_Value_Definition: Terrestrial Mammals
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: SPECIES_ID
Attribute_Definition:
Numeric identifier for each species that is unique within each element and refers to a
nationwide ESI species list maintained at NOAA.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum: 1
Range_Domain_Maximum: N
Attribute:
Attribute_Label: SEASON_ID
Attribute_Definition:
Numeric identifier for the unique monthly presence and life history characteristics
of each species at a given location.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum: 1
Range_Domain_Maximum: N
Attribute:
Attribute_Label: JAN
Attribute_Definition: January
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: X
Enumerated_Domain_Value_Definition: Present in January

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

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

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

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

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

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

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

Attribute:
Attribute_Label: EL_SPE_SEA

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

 Enumerated_Domain:

  Enumerated_Domain_Value: E#######

  Enumerated_Domain_Value_Definition:

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

  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Detailed_Description:

 Entity_Type:

  Entity_Type_Label: BREED

  Entity_Type_Definition:

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

  Entity_Type_Definition_Source: Research Planning, Inc.

 Attribute:

  Attribute_Label: EL_SPE_SEA

  Attribute_Definition:

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

  Attribute_Definition_Source: Research Planning, Inc.

  Attribute_Domain_Values:

   Enumerated_Domain:

    Enumerated_Domain_Value: E#######

    Enumerated_Domain_Value_Definition:

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

    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

 Attribute:

  Attribute_Label: MONTH

  Attribute_Definition:

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

  Attribute_Definition_Source: Research Planning, Inc.

  Attribute_Domain_Values:

   Range_Domain:

    Range_Domain_Minimum: 1

    Range_Domain_Maximum: 12

 Attribute:

  Attribute_Label: BREED1

  Attribute_Definition:

   Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED1 =

nesting; if ELEMENT is "FISH" then BREED1 = spawning; if ELEMENT is "INVERT" then BREED1 = spawning; if ELEMENT is "REPTILE" then BREED1 = nesting; if ELEMENT is "M_MAMMAL" then BREED1 = mating. This attribute is not used for HABITAT or T_MAMMAL elements.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Y

Enumerated_Domain_Value_Definition: Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: N

Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: -

Enumerated_Domain_Value_Definition:

Breed category not used or not appropriate for record(s) in question

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: BREED2

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Y

Enumerated_Domain_Value_Definition: Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: N

Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: -

Enumerated_Domain_Value_Definition:

Breed category not used or not appropriate for record(s) in question

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: BREED3

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: Y

        Enumerated_Domain_Value_Definition: Life-history stage or activity present

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: N

        Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

    Enumerated_Domain:

        Enumerated_Domain_Value: -

        Enumerated_Domain_Value_Definition:

            Breed category not used or not appropriate for record(s) in question

        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

    Attribute_Label: BREED4

    Attribute_Definition:

        Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED4 = fledging; 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 HABITAT or T_MAMMAL elements.

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: Y

            Enumerated_Domain_Value_Definition: Life-history stage or activity present

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: N

            Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: -

            Enumerated_Domain_Value_Definition:

                Breed category not used or not appropriate for record(s) in question

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

    Attribute_Label: BREED5

Attribute_Definition:
        Life history stage or activity type, where: if ELEMENT is "FISH" then BREED5 =
        adults; if ELEMENT is "INVERT" then BREED5 = adults; if ELEMENT is
        "REPTILE" then BREED5 = adults. This attribute is not used for BIRD,
        M_MAMMAL, HABITAT, or T_MAMMAL elements.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: Y
        Enumerated_Domain_Value_Definition: Life-history stage or activity present
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: N
        Enumerated_Domain_Value_Definition: Life-history stage or activity not
        present or not reported
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: -
        Enumerated_Domain_Value_Definition:
            Breed category not used or not appropriate for record(s) in question
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Detailed_Description:
    Entity_Type:
        Entity_Type_Label: SOURCES
        Entity_Type_Definition:
        The data table SOURCES contains the primary sources used to create the ESI data
        set. See the Browse_Graphic section for a link to the entity-relationship diagram,
        which describes the way this table relates to other attribute tables in the ESI data
        structure.
        Entity_Type_Definition_Source: Research Planning, Inc.
    Attribute:
        Attribute_Label: SOURCE_ID
        Attribute_Definition:
        Source identifier that links records in the SOURCES data table to the items
        G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and
        S_SOURCE in the BIORES table; and SOURCE_ID in the ESI, HYDRO, and
        SOCECON data layers.
        Attribute_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Range_Domain:
                Range_Domain_Minimum: 1
               Range_Domain_Maximum: N
    Attribute:
        Attribute_Label: ORIGINATOR
        Attribute_Definition: Author or developer of source material or data set.
        Attribute_Definition_Source: Research Planning, Inc.
        Attribute_Domain_Values:
            Unrepresentable_Domain: Acceptable values change from atlas to atlas.
    Attribute:

Attribute_Label: DATE_PUB

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: YYYYMM

Enumerated_Domain_Value_Definition: YYYY for year and optionally MM for month

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: TITLE

Attribute_Definition: Title of source material or data.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: DATA_FORMAT

Attribute_Definition: The format of the source material.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: PUBLICATION

Attribute_Definition: Additional citation information.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: SCALE

Attribute_Definition: Description of the source scale.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute_Label: TIME_PERIOD

Attribute_Definition:

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Detailed_Description:

Entity_Type:

Entity_Type_Label: STATUS

Entity_Type_Definition:

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

Entity_Type_Definition_Source: Research Planning, Inc.

Attribute:

    Attribute_Label: ELEMENT

    Attribute_Definition: Major categories of biological data.

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: BIRD

            Enumerated_Domain_Value_Definition: Birds

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: FISH

            Enumerated_Domain_Value_Definition: Fish

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: HABITAT

            Enumerated_Domain_Value_Definition: Habitats and Plants

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: INVERT

            Enumerated_Domain_Value_Definition: Invertebrates

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: M_MAMMAL

            Enumerated_Domain_Value_Definition: Marine Mammals

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: REPTILE

            Enumerated_Domain_Value_Definition: Reptiles and Amphibians

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Enumerated_Domain:

            Enumerated_Domain_Value: T_MAMMAL

            Enumerated_Domain_Value_Definition: Terrestrial Mammals

            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

    Attribute_Label: SPECIES_ID

    Attribute_Definition:

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

    Attribute_Definition_Source: Research Planning, Inc.

    Attribute_Domain_Values:

        Range_Domain:

            Range_Domain_Minimum: 1

            Range_Domain_Maximum: N

Attribute:

    Attribute_Label: STATE

     Attribute_Definition: Two-letter state abbreviation.
     Attribute_Definition_Source: Research Planning, Inc.
     Attribute_Domain_Values:
        Unrepresentable_Domain: Acceptable values change from atlas to atlas.
Attribute:
     Attribute_Label: COUNTRY
     Attribute_Definition: Three-letter country abbreviation.
     Attribute_Definition_Source: Research Planning, Inc.
     Attribute_Domain_Values:
        Unrepresentable_Domain: Acceptable values change from atlas to atlas.
Attribute:
     Attribute_Label: S
     Attribute_Definition: State threatened or endangered status.
     Attribute_Definition_Source: Research Planning, Inc.
     Attribute_Domain_Values:
        Enumerated_Domain:
           Enumerated_Domain_Value: E
           Enumerated_Domain_Value_Definition: Endangered on state list
           Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
     Attribute_Domain_Values:
        Enumerated_Domain:
           Enumerated_Domain_Value: T
           Enumerated_Domain_Value_Definition: Threatened on state list
           Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
     Attribute_Domain_Values:
        Enumerated_Domain:
           Enumerated_Domain_Value: C
           Enumerated_Domain_Value_Definition: Species of Special Concern
           Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute:
     Attribute_Label: F
     Attribute_Definition: Federal threatened or endangered status.
     Attribute_Definition_Source: Research Planning, Inc.
     Attribute_Domain_Values:
        Enumerated_Domain:
           Enumerated_Domain_Value: E
           Enumerated_Domain_Value_Definition: Endangered on federal list
           Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
     Attribute_Domain_Values:
        Enumerated_Domain:
           Enumerated_Domain_Value: T
           Enumerated_Domain_Value_Definition: Threatened on federal list
           Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
     Attribute_Domain_Values:
        Enumerated_Domain:
           Enumerated_Domain_Value: C
           Enumerated_Domain_Value_Definition: Species of Special Concern
           Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute:
     Attribute_Label: I
     Attribute_Definition: International threatened or endangered status.

Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: E
        Enumerated_Domain_Value_Definition: Endangered on international list
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: T
        Enumerated_Domain_Value_Definition: Threatened on international list
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: C
        Enumerated_Domain_Value_Definition: Species of Special Concern
        Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines
Attribute:
Attribute_Label: S_DATE
Attribute_Definition:
    Publication date of source material used to assign state status values for each
    species, if used.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: YYYYMM
        Enumerated_Domain_Value_Definition: YYYY for year and optionally MM
        for month
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: F_DATE
Attribute_Definition:
    Publication date of source material used to assign federal status values for each
    species, if used.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: YYYYMM
        Enumerated_Domain_Value_Definition: YYYY for year and optionally MM
        for month
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
Attribute_Label: I_DATE
Attribute_Definition:
    Publication date of source material used to assign international status values for each
    species, if used.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: YYYYMM
        Enumerated_Domain_Value_Definition: YYYY for year and optionally MM
        for month

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

 Attribute_Label: EL_SPE

 Attribute_Definition:

  Concatenation of ELEMENT and SPECIES_ID. This item links the STATUS data table to the BIORES and SPECIES data tables.

 Attribute_Definition_Source: Research Planning, Inc.

 Attribute_Domain_Values:

  Enumerated_Domain:

   Enumerated_Domain_Value: E#####

   Enumerated_Domain_Value_Definition:

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

   Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Distribution_Information:

 Distributor:

  Contact_Information:

   Contact_Person_Primary:

    Contact_Person: John Kaperick

    Contact_Organization: NOAA, Office of Response and Restoration

   Contact_Address:

    Address_Type: Physical Address

    Address: 7600 Sand Point Way N.E.

    City: Seattle

    State_or_Province: Washington

    Postal_Code: 98115-6349

   Contact_Voice_Telephone: (206) 526-6400

   Contact_Facsimile_Telephone: (206) 526-6329

 Resource_Description:

  ESI Atlas for Puget Sound and Strait of Juan de Fuca, Washington

 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 a Geodatabase; ARC export, MOSS, and Shape files; and MARPLOT map folders. An ArcMap .mxd file, an ArcView 3.x ESI project, and an 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:* 200607
> *Metadata_Review_Date:* 200607
> *Metadata_Contact:*
>> *Contact_Information:*
>>> *Contact_Person_Primary:*
>>>> *Contact_Person:* Jill Petersen
>>>> *Contact_Organization:* NOAA, Office of Response and Restoration
>>> *Contact_Position:* GIS Manager
>>> *Contact_Address:*
>>>> *Address_Type:* Physical Address
>>>> *Address:* 7600 Sand Point Way N.E.
>>>> *City:* Seattle
>>>> *State_or_Province:* Washington
>>>> *Postal_Code:* 98115-6349
>>> *Contact_Voice_Telephone:* (206) 526-6944
>>> *Contact_Facsimile_Telephone:* (206) 526-6329
>>> *Contact_Electronic_Mail_Address:* Jill.Petersen@noaa.gov
> *Metadata_Standard_Name:* Content Standards for Digital Geospatial Metadata
> *Metadata_Standard_Version:* FGDC-STD-001-1998

Generated by mp version 2.8.21 on Mon Jul 24 12:48:15 2006

Puget Sound and Strait of Juan de Fuca, Washington 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)

MGT (POLYS)
TYPE (2, 2, C)
ID (10, 10, I)
HUNUM (9, 9, I)
SOCECON (POINTS)
TYPE (2, 2, C)
ID (10, 10, I)
HUNUM (9, 9, I)
SOCECON (LINES)
TYPE (2, 2, C)
SOURCE_ID (6, 6, 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)
HABITATL (LINES)
ID (10, 10, I)
RARNUM (9, 9, I)
INVERT (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)

SOC_LUT
HUNUM (9, 9, I)
ID (10, 10, I)

(The SOC_LUT table can be bypassed by linking the human-use tables to SOC_DAT using HUNUM.)

BIO_LUT
RARNUM (9, 9, I)
ID (10, 10, I)

(The BIO_LUT table can be bypassed by linking the biology tables to BIORES using RARNUM.)

SOURCES
SOURCE_ID (6, 6, I)
ORIGINATOR (255, 255, C)
DATE_PUB (10, 10, I)
TITLE (255, 255, C)
DATA_FORMAT (255, 255, C)
PUBLICATION (255, 255, C)
SCALE (255, 255, C)
TIME_PERIOD (255, 255, C)

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

SPECIES
SPECIES_ID (5, 5, I)
NAME (35, 35, C)
GEN_SPEC (45, 45, C)
ELEMENT (10, 10, C)
SUBELEMENT (10, 10, C)
NHP (10, 10, C)
DATE_PUB (10, 10, I)
EL_SPE (6, 6, C)

SEASONAL
ELEMENT (10, 10, C)
SPECIES_ID (5, 5, I)
SEASON_ID (2, 2, I)
JAN (1, 1, C)
FEB (1, 1, C)
MAR (1, 1, C)
APR (1, 1, C)
MAY (1, 1, C)
JUN (1, 1, C)
JUL (1, 1, C)
AUG (1, 1, C)
SEP (1, 1, C)
OCT (1, 1, C)
NOV (1, 1, C)
DEC (1, 1, C)
EL_SPE_SEA (8, 8, C)

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

BREED
EL_SPE_SEA (8, 8, C)
MONTH (2, 2, I)
BREED1 (1, 1, C)
BREED2 (1, 1, C)
BREED3 (1, 1, C)
BREED4 (1, 1, C)
BREED5 (1, 1, C)