Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: HYDRO (Hydrography Lines and Polygons)

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

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:


Publication Date: 200812

Title:

Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: HYDRO (Hydrography Lines and Polygons)

Edition: Second

Geospatial Data Presentation Form: Vector digital data

Series Information:

Series Name: None

Issue Identification: Northern California

Publication Information:

Publication Place: Seattle, Washington

Publisher:


Other Citation Details:

Description:

Abstract:
This data set contains vector lines and polygons representing coastal hydrography used in the creation of the Environmental Sensitivity Index (ESI) for Northern California. 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 Northern California. 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: 1959
Ending_Date: 2007

Currentness_Reference:
The data were compiled during 2007. The currentness dates for this data ranges from 1959 to 2007 and are documented in the Lineage section.

Status:

Progress: Complete

Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:
West_Bounding_Coordinate: -124.45800
East_Bounding_Coordinate: -122.75000
North_Bounding_Coordinate: 37.97900
South_Bounding_Coordinate: 42.00000

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: Northern California

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 Northern California ESI data.
Browse Graphic File Type: JPEG

Data Set Credit:
This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Emergency Response Division (formerly Hazardous Materials Response Division), Seattle, Washington and Assessment and Restoration Division, Silver Spring, Maryland; Department of Homeland Security, U.S. Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.; and Department of Fish and Game, Office of Spill Prevention and Response, Sacramento, California.

Native Data Set Environment:
The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO® (version 9.2) and SQL SERVER® (version 2000). The hardware configuration is PCs 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, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, socecon.e00, t_mammal.e00. Associated relational and desktop data tables provided in ARC export and text format are bio_lut, biofile, biores, breed, breed_dt, 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® to ARC/INFO® consistencies. A final review is made by the GIS manager, where the data are written to CD or DVD, 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 Northern California.

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 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: CALIFORNIA COASTAL RECORDS PROJECT
Publication_Date: 20051004
Title: PHOTOGRAPHIC DATABASE DOCUMENTING CALIFORNIA'S COAST
Geospatial_Data_Presentation_Form: PHOTO
Other_Citation_Details:
<http://www.californiacoastline.org/> (Contact the site webmaster if this URL is no longer active.)

Type_of_Source_Media: ONLINE
Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 20051004
Ending_Date: 20051005

Source_Currentness_Reference: DATE OF SURVEY
Source_Citation_Abbreviation: NONE
Source_Contribution: HYDRO INFORMATION

Source_Information:

Source_Citation:

Citation_Information:

Originator: CALIFORNIA SPATIAL INFORMATION LIBRARY
Publication_Date: 2004
Title: REMOTE SENSING DIGITAL ORTHO QUARTER QUADS
Geospatial_Data_Presentation_Form: RASTER DIGITAL DATA
Other_Citation_Details:
<http://archive.casil.ucdavis.edu/casil/remote_sensing/doq/doqq/> (Contact the site webmaster if this URL is no longer active.)

Source_Scale_Denominator: 40,000
Type_of_Source_Media: ONLINE
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 2002
The shoreline was derived primarily from the original ESI maps, published in 1994. Where appropriate, revisions to the existing shoreline were made by a coastal geologist using two methods: (1) interpretation of the 2005 contiguous oblique aerial photography (www.californiacoastline.org) and the 2002-04 Digital Ortho Quarter Quads (DOQQs), and (2) through verification via overflights and ground surveys conducted in September 2007. Digital stream data provided by the National Marine Fisheries Service (NMFS) and used for anadromous fish locations as part of the FISHL (Fish Lines) data set in this ESI atlas, were also incorporated into this data layer.

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/or (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: 200812
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: 6859
    SDTS_Terms_Description:
      SDTS_Point_and_Vector_Object_Type: Area point
      Point_and_Vector_Object_Count: 6858
    SDTS_Terms_Description:
      SDTS_Point_and_Vector_Object_Type: Complete chain
      Point_and_Vector_Object_Count: 10595
    SDTS_Terms_Description:
      SDTS_Point_and_Vector_Object_Type: Link
      Point_and_Vector_Object_Count: 293399
    SDTS_Terms_Description:
      SDTS_Point_and_Vector_Object_Type: Label Point
      Point_and_Vector_Object_Count: 378
    SDTS_Terms_Description:
      SDTS_Point_and_Vector_Object_Type: Node, planar graph
      Point_and_Vector_Object_Count: 10480

Spatial_Reference_Information:
  Horizontal_Coordinate_System_Definition:
    Geographic:
      Latitude_Resolution: 0.0000001
      Longitude_Resolution: 0.0000001
      Geographic_Coordinate_Units: Decimal degrees
    Geodetic_Model:
      Horizontal_Datum_Name: North American Datum of 1927
      Ellipsoid_Name: Clark 1866
      Semi-major_Axis: 6378206.400000
      Denominator_of_Flattening_Ratio: 294.978698
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 relationships between attribute tables in the ESI data structure.

**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.

**Attribute Domain Values:**

**Enumerated Domain:**
- **Enumerated Domain Value:** H
- **Enumerated Domain Value Definition:** Hydrography
- **Enumerated Domain Value Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

**Enumerated Domain:**
- **Enumerated Domain Value:** I
- **Enumerated Domain Value Definition:** Index
- **Enumerated Domain Value Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

**Enumerated Domain:**
- **Enumerated Domain Value:** P
- **Enumerated Domain Value Definition:** Pier
- **Enumerated Domain Value Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

**Enumerated Domain:**
- **Enumerated Domain Value:** S
- **Enumerated Domain Value Definition:** Shoreline
- **Enumerated Domain Value Definition Source:** Research Planning, Inc.

**Attribute:**

**Attribute Label:** SOURCE_ID

**Attribute Definition:**
Spatial data source for the data layer lines that link to records in the SOURCES data table.

**Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

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

Detailed Description:
Entity Type:
  Entity Type Label: HYDRO.PAT
  Entity Type Definition:
The HYDRO.PAT table contains attribute information for the vector polygons representing polygonal hydrography features in the HYDRO data layer.
  Entity Type Definition Source: Research Planning, Inc.

Attribute:
  Attribute Label: WATER_CODE
  Attribute Definition: Specifies a polygon as either water or land.
  Attribute Definition Source: Research Planning, Inc.
  Attribute Domain Values:
    Enumerated Domain:
      Enumerated Domain Value: L
      Enumerated Domain Value Definition: Land
      Enumerated Domain Value Definition Source: Research Planning, Inc.
    Enumerated Domain:
      Enumerated Domain Value: W
      Enumerated Domain Value Definition: Water
      Enumerated Domain Value Definition Source: Research Planning, Inc.

Detailed Description:
Entity Type:
  Entity Type Label: ANNO.GEOG
  Entity Type Definition:
The spatial data layer HYDRO contains label points representing annotation for geographic features.
  Entity Type Definition Source: Research Planning, Inc.

Detailed Description:
Entity Type:
  Entity Type Label: ANNO.HYDRO
  Entity Type Definition:
The spatial data layer HYDRO contains label points representing annotation for water features.
  Entity Type Definition Source: Research Planning, Inc.

Detailed Description:
Entity Type:
  Entity Type Label: ANNO.SOC
  Entity Type Definition:
The spatial data layer HYDRO contains label points representing annotation for socioeconomic features.
  Entity Type Definition Source: Research Planning, Inc.

Detailed Description:
Entity Type:
  Entity Type Label: SOURCES
  Entity Type Definition:
The data table SOURCES contains the primary sources used to create the ESI data set.
  See the Browse Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.
  Entity Type Definition Source: Research Planning, Inc.
**Attribute:**
**Attribute_Label:** SOURCE_ID
**Attribute_Definition:**
Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; and SOURCE_ID in the ESI and HYDRO data layers.
**Attribute_Definition_Source:** Research Planning, Inc.

**Attribute Domain Values:**
- **Range Domain:**
  - Range_Domain_Minimum: 1
  - Range_Domain_Maximum: N

**Attribute:**
**Attribute_Label:** ORIGINATOR
**Attribute_Definition:** Author or developer of source material or data set.
**Attribute_Definition_Source:** Research Planning, Inc.

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

**Attribute:**
**Attribute_Label:** DATE_PUB
**Attribute_Definition:** Date of source material, publication, or date of personal communication with expert source.
**Attribute_Definition_Source:** Research Planning, Inc.

**Attribute Domain Values:**
- **Enumerated Domain:**
  - Enumerated_Domain_Value: YYYYMM
  - Enumerated_Domain_Value_Definition: YYYY for year and optionally MM for month
  - Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

**Attribute:**
**Attribute_Label:** TITLE
**Attribute_Definition:** Title of source material or data.
**Attribute_Definition_Source:** Research Planning, Inc.

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

**Attribute:**
**Attribute_Label:** DATA_FORMAT
**Attribute_Definition:** The format of the source material.
**Attribute_Definition_Source:** Research Planning, Inc.

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

**Attribute:**
**Attribute_Label:** PUBLICATION
**Attribute_Definition:** Additional citation information.
**Attribute_Definition_Source:** Research Planning, Inc.

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

**Attribute:**
**Attribute_Label:** SCALE
**Attribute_Definition:** Description of the source scale.
**Attribute_Definition_Source:** Research Planning, Inc.

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

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

Distribution_Information:
  Distributor:
  Contact_Information:
    Contact_Person_Primary:
      Contact_Person: John Kaperick
      Contact_Organization: NOAA, Office of Response and Restoration
    Contact_Address:
      Address_Type: Physical Address
      Address: 7600 Sand Point Way N.E.
      City: Seattle
      State_or_Province: Washington
      Postal_Code: 98115-6349
    Contact_Voice_Telephone: (206) 526-6400
    Contact_Facsimile_Telephone: (206) 526-6329
  Resource_Description: ESI Atlas for Northern California
  Distribution_Liability:
    Although these data have been processed successfully on a computer system at the National
    Oceanic and Atmospheric Administration (NOAA), 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 the widest community of GIS/mapping users. Distribution formats
    include Access Personal Geodatabase, ARC export files, Shape files, and MARPLOT map folders.
    An ArcMap .mxd file, an ArcView 3.x ESI project, and an ESI_Viewer product for use with the
    MARPLOT data are also included on the distribution CDs/DVDs 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: 200902
  Metadata_Review_Date: 200902
  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_orProvince: 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

Generated by mp version 2.8.21 on Sat Mar 21 14:27:16 2009
Identification Information:

Citation Information:

Originator:

Publication Date: 200812

Title:
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: ESI (Environmental Sensitivity Index Shoreline Types - Lines and Polygons)

Edition: Second

Geospatial Data Presentation Form: Vector digital data

Series Information:

Series Name: None

Issue Identification: Northern California

Publication Information:

Publication Place: Seattle, Washington

Publisher:

Other Citation Details:

Other Information:

Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: ESI (Environmental Sensitivity Index Shoreline Types - Lines and Polygons)

Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: ESI (Environmental Sensitivity Index Shoreline Types - Lines and Polygons)
Materials Response Division, Seattle, Washington and Assessment and Restoration Division, Silver Spring, Maryland; Department of Homeland Security, U.S. Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.; and Department of Fish and Game, Office of Spill Prevention and Response, Sacramento, California.

Description:

Abstract:
This data set contains vector lines and polygons representing the shoreline and coastal habitats of Northern California, classified according to the Environmental Sensitivity Index (ESI) classification system. This data set comprises a portion of the ESI data for Northern California. 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: 2007

Currentness_Reference:
The data were compiled during 2007. The currentness dates for the data ranges from 1992 to 2007 and are documented in the Lineage section.

Status:
Progress: Complete
Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:
Bounding_Coordinates:
  West_BoundingCoordinate: -124.45800
  East_BoundingCoordinate: -122.75000
  North_BoundingCoordinate: 37.97900
  South_BoundingCoordinate: 42.00000

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: Shoreline habitats

Place:
  Place_Keyword_Thesaurus: None
  Place_Keyword: Northern California

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 Northern California ESI data.
- **Browse Graphic File Type:** JPEG

**Data Set Credit:**
This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Emergency Response Division (formerly Hazardous Materials Response Division), Seattle, Washington and Assessment and Restoration Division, Silver Spring, Maryland; Department of Homeland Security, U.S. Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.; and Department of Fish and Game, Office of Spill Prevention and Response, Sacramento, California.

**Native Data Set Environment:**
The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO® (version 9.2) and SQL SERVER® (version 2000). The hardware configuration is PCs 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, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, socecon.e00, t_mammal.e00. Associated relational and desktop data tables provided in ARC export and text format are bio_lut, biofile, biore, 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:**
- **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® to ARC/INFO® consistencies. A final review is made by the GIS manager, where the data are written to CD or DVD, 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_Report:
The spatial location of the ESI shoreline was developed from pre-existing digital sources and reflects the positional accuracy of these original data. The horizontal positional accuracy of the 1:24,000 USGS topographic quads should conform to National Map Accuracy Standards at scales of 1:24,000. The minimum mapping unit (MMU) of the actual shoreline classification segments is estimated at 50 meters where mapping is conducted using 1:24,000 hardcopy fieldmaps. Field verification has shown that the absolute positional accuracy of breaks between shoreline ESI types with a 95-percent error bound is approximately 58 meters. See the Lineage and Process_Description sections for more information on the original data sources used in this atlas and how these data were integrated or manipulated to create the final data set.

Lineage:
Source_Information:
Source_Citation:
Citation_Information:
Originator: CALIFORNIA COASTAL RECORDS PROJECT
Publication_Date: 20051004
Title: PHOTOGRAPHIC DATABASE DOCUMENTING CALIFORNIA’S COAST
Geospatial_Data_Presentation_Form: PHOTO
Other_Citation_Details:
<http://www.californiacoastline.org/> (Contact the site webmaster if this URL is no longer active.)

Type_of_Source_Media: ONLINE
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date: 20051004
Ending_Date: 20051005
Source_Currentness_Reference: DATE OF SURVEY
Source_Citation_Abbreviation: NONE
Source_Contribution: ESI INFORMATION

Source_Information:
Source_Citation:
Citation_Information:
Originator: CALIFORNIA SPATIAL INFORMATION LIBRARY
Publication_Date: 2004
Title: REMOTE SENSING DIGITAL ORTHO QUARTER QUADS (DOQQs)
Geospatial_Data_Presentation_Form: RASTER DIGITAL DATA
Other_Citation_Details:
<http://archive.casil.ucdavis.edu/casil/remote_sensing/doq/doqq/> (Contact the site webmaster if this URL is no longer active.)

Source_Scale_Denominator: 40,000
Type_of_Source_Media: ONLINE
Source_Time_Period_of_Content:
Time_Period_Information:
Northern California ESI: ESI (Shoreline Types - Lines and Polygons)
The shoreline habitats on the original ESI maps, published in 1994, were re-examined and updated by a coastal geologist using two methods: (1) interpretation of the 2005 contiguous oblique aerial photography (www.californiacoastline.org) and the 2002-04 Digital Ortho Quarter Quads (DOQQs), and (2) verification via overflights and ground surveys conducted in September 2007. The overflights were conducted at elevations of 400-600 feet and slow air speed. All flights were planned to maximize time on site during the 2.5 hours preceding and the 2.5 hours following peak low tide. Where appropriate, revisions to the existing shoreline were made, and where necessary, multiple habitats were described for each shoreline segment. Additionally, the 2006 National Wetlands Inventory (NWI) data were used to assist in the classification of polygonal wetlands in the area surrounding Lake Earl in Del Norte County.

The above digital and/or hardcopy sources were compiled to create the ESI data layer. Depending on the type of source data, four general approaches are used for compiling the data layer: (1) hardcopy maps are digitized at their source scale; (2) digital data layers are evaluated and used "as is" or integrated with the other data sources; (3) overflight classifications are digitized from the scanned and registered hardcopy field maps; and/or (4) classifications are interpreted from oblique GPS-referenced photography or video taken during the overflights. After the initial shoreline classification, these data are edgematched and checked for logical consistency errors. Review maps are plotted at 1:24,000 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 ESI data layer are made based on the recommendations of the resource experts,
and final hardcopy maps and digital data are created.

*Process_Date:* 200812

*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

*SDTS_Terms_Description:*

*SDTS_Point_and_Vector_Object_Type:* GT-polygon composed of chains

*Point_and_Vector_Object_Count:* 546

*SDTS_Terms_Description:*

*SDTS_Point_and_Vector_Object_Type:* Area point

*Point_and_Vector_Object_Count:* 545

*SDTS_Terms_Description:*

*SDTS_Point_and_Vector_Object_Type:* Complete chain

*Point_and_Vector_Object_Count:* 3596

*SDTS_Terms_Description:*

*SDTS_Point_and_Vector_Object_Type:* Link

*Point_and_Vector_Object_Count:* 139949

*SDTS_Terms_Description:*

*SDTS_Point_and_Vector_Object_Type:* Node, planar graph

*Point_and_Vector_Object_Count:* 3425

*Spatial_Reference_Information:*

*Horizontal_Coordinate_System_Definition:*

*Geographic:*

*Latitude_Resolution:* 0.0000001

*Longitude_Resolution:* 0.0000001

*Geographic_Coordinate_Units:* Decimal degrees

*Geodetic_Model:*

*Horizontal_Datum_Name:* North American Datum of 1927

*Ellipsoid_Name:* Clark 1866

*Semi-major_Axis:* 6378206.400000

*Denominator_of_Flattening_Ratio:* 294.978698
Entity and Attribute Information:

Overview Description:

Entity and Attribute Overview:
In addition to the geographic data layers, one relational attribute or data table, SOURCES, is used to store the source data information in the ESI data structure. The geographic data layer containing resource information (in this case, ESI) is linked to the SOURCES table using the SOURCE_ID. The entity-relationship diagram describes the relationships between the attribute tables in the ESI data structure.

Detailed Description:

Entity_Type:
Entity_Type_Label: ESI.AAT
Entity_Type_Definition:
The ESI.AAT table contains attribute information for the vector lines representing linear shoreline features with ESI classification.
Entity_Type_Definition_Source: Research Planning, Inc.

Attribute:
Attribute_Label: ESI
Attribute_Definition:
The item ESI contains values representing the ESI shoreline type. In many cases shorelines are ranked with multiple codes, such as "6B/3A" (listed landward to seaward from left to right). The first code, "6B", is the most landward shoreline type and the second code, "3A", is the shoreline type closest to the water. Singular shoreline types are listed below. No multiple codes are listed, but all multiple codes included in the data set can be assembled from the codes described. The ESI rankings progress from low to high susceptibility to oil spills. To determine the sensitivity of a particular intertidal shoreline habitat, the following factors are integrated: (1) Shoreline type (substrate, grain size, tidal elevation, origin); (2) Exposure to wave and tidal energy; (3) Biological productivity and sensitivity; (4) Ease of cleanup. Prediction of the behavior and persistence of oil in intertidal habitats is based on an understanding of the dynamics of the coastal environments, not just the substrate type and grain size. The intensity of energy expended upon a shoreline by wave action, tidal currents, and river currents directly affects the persistence of stranded oil. The need for shoreline cleanup activities is determined, in part, by the slowness of natural processes in removal of oil stranded on the shoreline. The potential for biological injury and ease of cleanup of spilled oil are also important factors in the ESI ranking. Generally speaking, areas exposed to high levels of physical energy, such as wave action and tidal currents, and low biological activity rank low on the scale, whereas sheltered areas with associated high biological activity have the highest ranking.
Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 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 Value: 2A
Enumerated Domain Value Definition: Exposed Wave-cut Platforms in Bedrock
Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: 3A
Enumerated Domain Value Definition: Fine- to Medium-grained Sand Beaches
Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: 3B
Enumerated Domain Value Definition: Scarps and Steep Slopes in Sand
Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: 4
Enumerated Domain Value Definition: Coarse-grained Sand Beaches
Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: 5
Enumerated Domain Value Definition: Mixed Sand and Gravel Beaches
Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: 6A
Enumerated Domain Value Definition: Gravel Beaches
Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: 6B
Enumerated Domain Value Definition: Riprap
Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: 6D
Enumerated Domain Value Definition: Boulder Rubble
Enumerated Domain Value 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.

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: 8A
Enumerated Domain Value Definition: Sheltered Rocky Shores
Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: 8B
Enumerated_Domain_Value_Definition: Sheltered, Solid Man-made Structures
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 8C
Enumerated_Domain_Value_Definition: Sheltered Riprap
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 9A
Enumerated_Domain_Value_Definition: Sheltered Tidal Flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 9B
Enumerated_Domain_Value_Definition: Vegetated Low Banks
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 10A
Enumerated_Domain_Value_Definition: Salt- and Brackish-water marshes
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
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.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: F
Enumerated_Domain_Value_Definition: Flat
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: H
Enumerated_Domain_Value_Definition: Hydrography
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
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.

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: P
        Enumerated_Domain_Value_Definition: Pier
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: S
        Enumerated_Domain_Value_Definition: Shoreline
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
    Attribute_Label: SOURCE_ID
    Attribute_Definition: Spatial data source for the data layer lines that link to records in the SOURCES data table.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Range_Domain:
            Range_Domain_Minimum: 1
            Range_Domain_Maximum: N

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

Attribute_Domain_Values:
    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: 2A
Enumerated_Domain_Value_Definition: Exposed Wave-cut Platforms in Bedrock
Enumerated_Domain_Value_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.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 9A
Enumerated_Domain_Value_Definition: Sheltered Tidal Flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 10A
Enumerated_Domain_Value_Definition: Salt- and Brackish-water marshes
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 10B
Enumerated_Domain_Value_Definition: Freshwater Marshes
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 10C
Enumerated_Domain_Value_Definition: Swamps
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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

Attribute_Domain_Values:
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.

Attribute_Domain_Values:
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.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: U
    Enumerated_Domain_Value_Definition: Unranked
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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

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

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

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

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

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

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

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

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

Distribution_Information:
Distributor:
Contact_Information:
   Contact_Person_Primary:
      Contact_Person: John Kaperick
      Contact_Organization: NOAA, Office of Response and Restoration
   Contact_Address:
      Address_Type: Physical Address
      Address: 7600 Sand Point Way N.E.
      City: Seattle
      State_or_Province: Washington
      Postal_Code: 98115-6349
      Contact_Voice_Telephone: (206) 526-6400
      Contact_Facsimile_Telephone: (206) 526-6329
   Resource_Description: ESI Atlas for Northern California
   Distribution_Liability:
      Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration (NOAA), 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 the widest community of GIS/mapping users. Distribution formats include Access Personal Geodatabase, ARC export files, Shape files, and MARPLOT map folders. An ArcMap .mxd file, an ArcView 3.x ESI project, and an ESI_Viewer product for use with the MARPLOT data are also included on the distribution CDs/DVDs 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: 200902  
Metadata_Review_Date: 200902  
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  

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Generated by **mp** version 2.8.21 on Thu Mar 19 22:03:44 2009
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: INDEX (Index Polygons)

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

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:

Publication_Date: 200812

Title:
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: INDEX (Index Polygons)

Edition: Second

Geospatial_Data_Presentation_Form: Vector digital data

Series_Information:

Series_Name: None
Issue_Identification: Northern California

Publication_Information:

Publication_Place: Seattle, Washington
Publisher:

Other_Citation_Details:
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 Northern California. This data set comprises a portion of the ESI data for Northern California. 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: 2007

Currentness_Reference:
The INDEX data were compiled during 2007. The currentness date for the data is 2007 and is documented in the Lineage section.

Status:
Progress: Complete
Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:
West_BoundingCoordinate: -124.45800
East_BoundingCoordinate: -122.75000
North_BoundingCoordinate: 37.97900
South_BoundingCoordinate: 42.00000

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: Northern California

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 Northern California ESI data.
**Browse_Graphic_File_Type:** JPEG

**Data_Set_Credit:**
This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Emergency Response Division (formerly Hazardous Materials Response Division), Seattle, Washington and Assessment and Restoration Division, Silver Spring, Maryland; Department of Homeland Security, U.S. Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.; and Department of Fish and Game, Office of Spill Prevention and Response, Sacramento, California.

**Native_Data_Set_Environment:**
The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO® (version 9.2) and SQL SERVER® (version 2000). The hardware configuration is PCs 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, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, socecon.e00, t_mammal.e00. Associated relational and desktop data tables provided in ARC export and text format are bio_lut, biofile, biores, breed, breed_dt, 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® to ARC/INFO® consistencies. A final review is made by the GIS manager, where the data are written to CD or DVD, 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 Northern California.

**Positional_Accuracy:**

**Horizontal_Positional_Accuracy:**

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

**Lineage:**

**Source_Information:**

**Source_Citation:**

**Citation_Information:**

-Originator: RESEARCH PLANNING INC. (RPI)
-Publication_Date: 2007
-Title: ESI INDEX
-Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
-Other_Citation_Details: UNPUBLISHED

**Source_Scale_Denominator:** 24,000
**Type_of_Source_Media:** DIGITAL
**Source_Time_Period_of_Content:**

-Time_Period_Information:
-Single_Date_Time:
-Calendar_Date: 2007

**Source_Currentness_Reference:** DATE OF PUBLICATION
**Source_Citation_Abbreviation:** NONE
**Source_Contribution:** INDEX INFORMATION

**Process_Step:**

**Process_Description:**

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

**Process_Date:** 200812

**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: 40

SDTS Terms Description:
SDTS Point and Vector Object Type: Area point
Point and Vector Object Count: 39

SDTS Terms Description:
SDTS Point and Vector Object Type: Complete chain
Point and Vector Object Count: 172

SDTS Terms Description:
SDTS Point and Vector Object Type: Link
Point and Vector Object Count: 176

SDTS Terms Description:
SDTS Point and Vector Object Type: Node, planar graph
Point and Vector Object Count: 134

Spatial Reference Information:
Horizontal Coordinate System Definition:
Geographic:
  Latitude Resolution: 0.0000001
  Longitude Resolution: 0.0000001
  Geographic Coordinate Units: Decimal degrees

Geodetic Model:
  Horizontal Datum Name: North American Datum of 1927
  Ellipsoid Name: Clarke 1866
  Semi-major Axis: 6378206.40000
  Denominator of Flattening Ratio: 294.978698

Entity and Attribute Information:
Detailed Description:
Entity Type:
  Entity Type Label: INDEX.PAT
  Entity Type Definition:
    The INDEX.PAT table contains attribute information for the vector polygons representing the boundaries of the maps and digital data boundaries used in the creation of the ESI.
  Entity Type Definition Source: Research Planning, Inc.

Attribute:
  Attribute Label: TILE-NAME
  Attribute Definition:
    The TILE-NAME contains the map number according to the specified layout of the atlas.
  Attribute Definition Source: Research Planning, Inc.
  Attribute Domain Values:
    Range Domain:
      Range Domain Minimum: 1
Range_Domain_Maximum: 39

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

Attribute:
Attribute_Label: SCALE
Attribute_Definition:
SCALE contains the value of the denominator of the scale at which the map is plotted in the final map product.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute_Label: MAPANGLE
Attribute_Definition:
MAPANGLE contains the value to rotate the final map product so that it is situated straight up and down.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum: 1.7010
Range_Domain_Maximum: 2.7750
Attribute_Units_of_Measure: Degree

Attribute:
Attribute_Label: PAGESIZE
Attribute_Definition:
PAGESIZE contains the value of the width and height of the map in the final map product.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 11,17
Enumerated_Domain_Value_Definition: Page size = 11" by 17"
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Distribution_Information:
Distributor:
Contact_Information:
Contact_Person_Primary:
Contact_Person: John Kaperick
Contact_Organization: NOAA, Office of Response and Restoration
Contact_Address:
Address_Type: Physical Address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration (NOAA), 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.

Contact NOAA for distribution options (see Distributor). ESI data are processed into multiple formats to make them useful to the widest community of GIS/mapping users. Distribution formats include Access Personal Geodatabase, ARC export files, Shape files, and MARPLOT map folders. An ArcMap .mxd file, an ArcView 3.x ESI project, and an ESI_Viewer product for use with the MARPLOT data are also included on the distribution CDs/DVDs 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: 200902
Metadata Review Date: 200902
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

Generated by mp version 2.8.21 on Thu Mar 19 22:12:59 2009
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: MGT (Management Area Polygons)

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

Metadata:

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

Identification Information:

Citation Information:

Originator:

Publication Date: 200812

Title:
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: MGT (Management Area Polygons)

Edition: Second

Geospatial Data Presentation Form: Vector digital data

Series Information:

Series Name: None

Issue Identification: Northern California

Publication Information:

Publication Place: Seattle, Washington

Publisher:

Other Citation Details:
Description:

Abstract:
This data set contains human-use data for designated critical habitats, essential habitats, management areas, marine sanctuaries, National Park Service properties, Nature Conservancy properties, State parks, and wildlife refuges in Northern California. Vector polygons in this data set represent management areas. Location-specific type and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer. This data set comprises a portion of the Environmental Sensitivity Index (ESI) data for Northern California. 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 Northern California 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: 2007

Currentness_Reference:
The data were compiled during 2007. The currentness dates for the data range from 1996 to 2007 and are documented in the Lineage section.

Status:
Progress: Complete
Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:
Bounding_Coordinates:
West_BoundingCoordinate: -124.45800
East_BoundingCoordinate: -122.75000
North_BoundingCoordinate: 37.97900
South_BoundingCoordinate: 42.00000

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: Northern California

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 Northern California ESI data.

Browse_Graphic_File_Type: JPEG

Data_Set_Credit:

This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Emergency Response Division (formerly Hazardous Materials Response Division), Seattle, Washington and Assessment and Restoration Division, Silver Spring, Maryland; Department of Homeland Security, U.S. Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.; and Department of Fish and Game, Office of Spill Prevention and Response, Sacramento, California.

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO® (version 9.2) and SQL SERVER® (version 2000). The hardware configuration is PCs 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, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, socecon.e00, t_mammal.e00. Associated relational and desktop data tables provided in ARC export and text format are bio_lut, biofile, biore, 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® to ARC/INFO® consistencies. A final review is made by the GIS manager, where the data are written to CD or DVD, 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 Northern California ESI database, for additional human-use information. These data do not necessarily represent all management areas in Northern California.

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: CALIFORNIA RESOURCES AGENCY LEGACY PROJECT
Publication_Date: 2003
Title: PUBLIC CONSERVATION AND TRUST LANDS
Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
Other_Citation_Details: <http://gis.ca.gov/catalog/BrowseRecord.epl?id=21066> (Contact the site webmaster if this URL is no longer active.)
Type_of_Source_Media: ONLINE
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 2003
Source_Currentness_Reference: DATE OF PUBLICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: MGT INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: CALIFORNIA DEPT. OF FISH AND GAME (CDF&G) MARINE REGION
Publication_Date: 2006
Title: MARINE PROTECTED AREAS
Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
Other_Citation_Details:
<http://www.dfg.ca.gov/itbweb/gis/mr_gov_units.htm> (Contact the site
webmaster if this URL is no longer active.)

Type_of_Source_Media: EMAIL
Source_Time_Period_of_Content:
  Time_Period_Information:
    Single_Date/Time:
      Calendar_Date: 2006
Source_Currentness_Reference: DATE OF PUBLICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: MGT INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: NOAA, NMSP
      Publication_Date: 2004
      Title: NATIONAL MARINE SANCTUARY PROGRAM DIGITAL BOUNDARY FILES
      Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
      Other_Citation_Details: NOAA, NATIONAL MARINE SANCTUARY PROGRAM, SILVER SPRING, MD

Source_Scale_Denominator: VARIES
Type_of_Source_Media: EMAIL
Source_Time_Period_of_Content:
  Time_Period_Information:
    Range_of_Dates/Times:
      Beginning_Date: 1996
      Ending_Date: 2003
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: MGT INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: NATIONAL PARK SERVICE (NPS)
      Publication_Date: 2007
      Title: REDWOOD NATIONAL AND STATE PARK BOUNDARIES
      Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
      Other_Citation_Details: NPS, ORICK, CA

Type_of_Source_Media: EMAIL
Source_Time_Period_of_Content:
  Time_Period_Information:
    Single_Date/Time:
      Calendar_Date: 2007
Source_Currentness_Reference: DATE OF PUBLICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: MGT INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: POINT REYES NATIONAL SEASHORE GIS
      Publication_Date: 2006
      Title: GOGA_TRACTS_LANDS04; PORE_ADMIN46; PHILIP_BURTON_WILDERNESS2
Numerous digital coverages were used to depict the management data layer. Data were provided by: U.S. Fish and Wildlife Service (USFWS), California Department of Fish & Game Marine Region (CDF&G, MR), California Resources Agency Legacy Project, National Park Service (NPS), and NOAA National Marine Fisheries Service (NMFS). Chinook and Steelhead salmon critical habitat areas were evaluated and are identified on the hardcopy maps as text boxes. These digital data sets were not used in the atlas production and were not delivered as part of the final data set. However, these data can be obtained from <http://swr.nmfs.noaa.gov/salmon/layers/finalgis.htm> and are titled: CCC_STEELHEAD_CH_06_2005, NC_STEELHEAD_CH_06_2005, CC_CHINOOK_CH_06_2005. (Contact the site webmaster if the URL is no longer active.)

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; and/or 3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer. The compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the
maps. If necessary, edits to the MGT data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.

Process_Date: 200812
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_orProvince: 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: 355
  SDTS_Terms_Description:
    SDTS_Point_and_Vector_Object_Type: Area point
    Point_and_Vector_Object_Count: 354
  SDTS_Terms_Description:
    SDTS_Point_and_Vector_Object_Type: Complete chain
    Point_and_Vector_Object_Count: 661
  SDTS_Terms_Description:
    SDTS_Point_and_Vector_Object_Type: Link
    Point_and_Vector_Object_Count: 63958
  SDTS_Terms_Description:
    SDTS_Point_and_Vector_Object_Type: Node, planar graph
    Point_and_Vector_Object_Count: 509

Spatial_Reference_Information:
  Horizontal_Coordinate_System_Definition:
    Geographic:
      Latitude_Resolution: 0.0000001
      Longitude_Resolution: 0.0000001
      Geographic_Coordinate_Units: Decimal degrees
    Geodetic_Model:
      Horizontal_Datum_Name: North American Datum of 1927
      Ellipsoid_Name: Clark 1866
      Semi-major_Axis: 6378206.400000
      Denominator_of_Flattening_Ratio: 294.978698
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 Northern California, the number is 207). ID is a unique combination of the atlas number (207), 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.

The MGT.PAT table contains attribute information for the vector polygons representing designated critical habitats, essential habitats, management areas, marine sanctuaries, National Park Service properties, Nature Conservancy properties, state parks and wildlife refuges in Northern California. 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.

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.

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.

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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.
Multiple Records - Signifies that multiple types overlap in the polygon

Attribute Domain Values:

Enumerated Domain:
- Enumerated Domain Value: NC
  Enumerated Domain Value Definition: Nature Conservancy
  Enumerated Domain Value Definition Source: Research Planning, Inc.

Enumerated Domain:
- Enumerated Domain Value: NP
  Enumerated Domain Value Definition: National Park
  Enumerated Domain Value Definition Source: Research Planning, Inc.

Enumerated Domain:
- Enumerated Domain Value: P
  Enumerated Domain Value Definition: Regional or State Park
  Enumerated Domain Value Definition Source: Research Planning, Inc.

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 (207), 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: 2071100002
  - Range Domain Maximum: 2071100359

Attribute:
- Attribute Label: HUNUM
  Attribute Definition:
  An identifier that links directly to the SOC_DAT table. HUNUM values of 0 are holes in polygons and do not contain information.
  Attribute Definition Source: NOAA
  Attribute Domain Values:
  Range Domain:
  - Range Domain Minimum: 207000164
  - Range Domain Maximum: 207000336

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**: 207000001
  - **Range_Domain_Maximum**: 207000336

**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 (207), 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**: 2071000001
  - **Range_Domain_Maximum**: 2071100359

**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**: 207000001
  - **Range_Domain_Maximum**: 207000336

**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.
Enumerated_Domain:
    Enumerated_Domain_Value: ACCESS
    Enumerated_Domain_Value_Definition: Access area
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: AQUACULTURE
        Enumerated_Domain_Value_Definition: Aquaculture
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: 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: Coast Guard site
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: DESIGNATED CRITICAL HABITAT
        Enumerated_Domain_Value_Definition: Designated Critical Habitat
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: ESSENTIAL HABITAT
        Enumerated_Domain_Value_Definition: Essential Habitat
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: HOIST
        Enumerated_Domain_Value_Definition: Hoist
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: HISTORICAL SITE
        Enumerated_Domain_Value_Definition: Historical Site
        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.

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.

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.

Enumerated_Domain_Value_Definition: National Park
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: RECREATIONAL FISHING
  Enumerated_Domain_Value_Definition: Recreational Fishing
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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.

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.

Enumerated_Domain_Value_Definition: Subsistence area
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: STAGING SITE
  Enumerated_Domain_Value_Definition: Staging Site
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Enumerated_Domain_Value_Definition: Staging Site
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: WATER INTAKE
  Enumerated_Domain_Value_Definition: Water Intake
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Enumerated_Domain_Value_Definition: Water Intake
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: WASH OVER
  Enumerated_Domain_Value_Definition: Wash Over
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Enumerated_Domain_Value_Definition: Wash Over
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.

Enumerated_Domain_Value_Definition: Wildlife Refuge
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
  Attribute_Label: NAME
  Attribute_Definition: The feature name
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:
  Attribute_Label: CONTACT
  Attribute_Definition: Contact person or entity
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Unrepresentable_Domain: Acceptable values change from atlas to atlas.

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

Attribute:
  Attribute_Label: G_SOURCE
  Attribute_Definition:
    Geographic source identifier that links records in the SOC_DAT data table to records in
    the SOURCES data table.
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum: 1
      Range_Domain_Maximum: N

Attribute:
  Attribute_Label: A_SOURCE
  Attribute_Definition:
    Attribute source identifier that links records in the SOC_DAT data table to records in
    the SOURCES data table.
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum: 1
      Range_Domain_Maximum: N

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

Attribute:
  Attribute_Label: SOURCE_ID
  Attribute_Definition:
    Source identifier that links records in the SOURCES data table to the items
    G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in
    the BIORES table; and SOURCE_ID in the ESI and HYDRO data layers.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
Range Domain:
  Range Domain Minimum: 1
  Range Domain Maximum: N

Attribute:
Attribute Label: ORIGINATOR
Attribute Definition: Author or developer of source material or data set.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
  Unrepresentable Domain: Acceptable values change from atlas to atlas.

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

Attribute:
Attribute Label: TITLE
Attribute Definition: Title of source material or data.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
  Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute Label: DATA_FORMAT
Attribute Definition: The format of the source material.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
  Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute Label: PUBLICATION
Attribute Definition: Additional citation information.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
  Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute Label: SCALE
Attribute Definition: Description of the source scale.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
  Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute Label: TIME_PERIOD
Attribute Definition: Date(s) of data collection that the source material is based upon.
Attribute Definition Source: Research Planning, Inc.
Attribute_Domain_Values:
Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Distribution_Information:
Distributor:
Contact_Information:
Contact_Person_Primary:
   Contact_Person: John Kaperick
   Contact_Organization: NOAA, Office of Response and Restoration
Contact_Address:
   Address_Type: Physical Address
   Address: 7600 Sand Point Way N.E.
   City: Seattle
   State_or_Province: Washington
   Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6400
Contact_Facsimile_Telephone: (206) 526-6329
Resource_Description: ESI Atlas for Northern California
Distribution_Liability:
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration (NOAA), 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 the widest community of GIS/mapping users. Distribution formats include Access Personal Geodatabase, ARC export files, Shape files, and MARPLOT map folders. An ArcMap .mxd file, an ArcView 3.x ESI project, and an ESI_Viewer product for use with the MARPLOT data are also included on the distribution CDs/DVDs 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: 200902
Metadata_Review_Date: 200902
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

Generated by mp version 2.8.21 on Thu Mar 19 21:26:15 2009
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: SOCECON (Socioeconomic Resource Points and Lines)

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

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:
  Publication Date: 200812
  Title: Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: SOCECON (Socioeconomic Resource Points and Lines)
  Edition: Second
  Geospatial Data Presentation Form: Vector digital data
  Series Information:
    Series Name: None
    Issue Identification: Northern California
  Publication Information:
    Publication Place: Seattle, Washington
  Other Citation Details:
Materials Response Division), Seattle, Washington and Assessment and Restoration Division, Silver Spring, Maryland; Department of Homeland Security, U.S. Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.; and Department of Fish and Game, Office of Spill Prevention and Response, Sacramento, California.

Description:

Abstract:
This data set contains the following human-use resource data for Northern California: access areas, airports, aquaculture sites, beaches, boat ramps, Coast Guard areas, commercial/recreational fishing areas, essential habitats, historical sites, hoists, marinas, staging areas, subsistence areas, wash overs, and water intakes. Vector points and lines in this data set represent the human-use locations. 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 Northern California. 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 Northern California 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: 1994
Ending_Date: 2007

Currentness_Reference:
The SOCECON data were compiled during 2007. The currentness dates for the data range from 1994 to 2007 and are documented in the Lineage section.

Status:

Progress: Complete
Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -124.45800
East_Bounding_Coordinate: -122.75000
North_Bounding_Coordinate: 37.97900
South_Bounding_Coordinate: 42.00000

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:
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 Northern California ESI data.
Browse Graphic File Type: JPEG

Data Set Credit:
This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Emergency Response Division (formerly Hazardous Materials Response Division), Seattle, Washington and Assessment and Restoration Division, Silver Spring, Maryland; Department of Homeland Security, U.S. Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.; and Department of Fish and Game, Office of Spill Prevention and Response, Sacramento, California.

Native Data Set Environment:
The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO® (version 9.2) and SQL SERVER® (version 2000). The hardware configuration is PCs 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, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, socecon.e00, t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, 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® to ARC/INFO® consistencies. A final review is made by the GIS manager, where the data are written to CD or DVD, 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. See also the MGT (Management Area Polygons) data layer, part of the larger Northern California ESI database, for additional human-use information. These data do not necessarily represent all human-use sites in Northern California.

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: ALLEN, S. (NATIONAL PARK SERVICE, POINT REYES)
Publication Date: 2005
Title: DISTRIBUTION AND SEASONALITY OF SPECIES AND SOC_ECON FEATURES ON NPS LANDS
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: 2005
Source Currentness Reference: DATE OF COMMUNICATION
Source Citation Abbreviation: NONE
Source Contribution: SOCECON INFORMATION
Source Information:
Source Citation:
Citation Information:
Originator: ANDERSON, D. (NATIONAL PARK SERVICE, ORICK)
Publication Date: 2007
Title: REDWOOD NATIONAL PARK RESOURCES
Geospatial Data Presentation Form: EXPERT KNOWLEDGE
Other Citation Details: UNPUBLISHED
Type of Source Media: PERSONAL COMMUNICATION
Northern California ESI: SOCECON (Socioeconomic Resource Points and Lines)
Single_Date/Time:
    Calendar_Date: 2007
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: SOCECON INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: NOAA NOS OR&R HAZMAT
            Publication_Date: 2001
            Title: SENSITIVITY OF COASTAL ENVIRONMENTS AND WILDLIFE TO SPILLED OIL: NORTHERN CALIFORNIA
            Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
            Other_Citation_Details: SEATTLE, WASHINGTON
            Source_Scale_Denominator: 24,000
            Type_of_Source_Media: CD-ROM
            Source_Time_Period_of_Content:
                Time_Period_Information:
                    Range_of_Dates/Times:
                        Beginning_Date: 1994
                        Ending_Date: 2001
Source_Currentness_Reference: DATE OF PUBLICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: SOCECON INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: NATIONAL PARK SERVICE (NPS)
            Publication_Date: 2007
            Title: REDWOOD NATIONAL PARK RESOURCES
            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: 2007
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: SOCECON INFORMATION
Source_Information:
    Source_Citation:
        Citation_Information:
            Originator: RESEARCH PLANNING INC.
            Publication_Date: 2007
            Title: ESI INDEX
            Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
            Other_Citation_Details: UNPUBLISHED
            Source_Scale_Denominator: 24,000
            Type_of_Source_Media: DIGITAL
            Source_Time_Period_of_Content:
Time_Period_Information:
  Single_Date/Time:
    Calendar_Date: 2007
Source_Currentness_Reference: DATE OF PUBLICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: SOCECON INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: RESEARCH PLANNING, INC.
      Publication_Date: 1994
      Title:
        SENSITIVITY OF COASTAL ENVIRONMENTS AND WILDLIFE TO SPILLED OIL: CENTRAL CA
    Geospatial_Data_Presentation_Form: ATLAS
    Other_Citation_Details: CDF&G OSPR AND NOAA, 41 MAPS
Source_Scale_Denominator: 46,500
Type_of_Source_Media: PAPER
Source_Time_Period_of_Content:
  Time_Period_Information:
    Single_Date/Time:
      Calendar_Date: 1994
Source_Currentness_Reference: DATE OF PUBLICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: SOCECON INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: TEALE GIS SOLUTIONS GROUP
      Publication_Date: 1997
      Title: AIRPORTS
    Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
    Other_Citation_Details: TEALE GIS SOLUTIONS GROUP
Type_of_Source_Media: ONLINE
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: SOCECON INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: TERRALOGIC GIS, INC.
      Publication_Date: 2005
      Title:
        ALTERNATIVE B.2 OF THE PACIFIC COAST GROUNDFISH ESSENTIAL FISH HABITAT (EFH) DRAFT EIS (ESTUARIES HAPC)
    Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
    Other_Citation_Details: NATIONAL MARINE FISHERIES SERVICE (NMFS), NORTHWEST REGION
Type of Source Media: ONLINE
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: TERRALOGIC GIS, INC.
  Publication Date: 2005
  Title:
  ALTERNATIVE B.4 OF THE PACIFIC COAST GROUND FISH EFH DRAFT EIS (SEAGRASS HAPC)
  Geospatial Data Presentation Form: HARDCOPY TEXT
  Other Citation Details: NMFS, NORTHWEST REGION

Type of Source Media: ONLINE
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: TERRALOGIC GIS, INC.
  Publication Date: 2005
  Title:
  ALTERNATIVE B.6 OF THE PACIFIC GROUND FISH EFH DRAFT EIS (ROCKY REEFS HAPC)
  Geospatial Data Presentation Form: VECTOR DIGITAL DATA
  Other Citation Details: NMFS NORTHWEST REGION

Type of Source Media: ONLINE
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: U.S. COAST GUARD (USCG) SECTOR SAN FRANCISCO
  Publication Date: 2005
  Title:
  2005 SECTOR SAN FRANCISCO AREA ACP 1 NORTH COAST; VOLUME 2: MENDOCINO COUNTY SECTION 9814
Process Step:

Three main sources of data were used to depict human-use resources for this data layer: 1) personal interviews with resource experts from the California Department of Fish & Game (CDF&G), California State Parks (CSP), National Park Service (NPS); 2) published reports, and 3) digital socioeconomic layers provided by CDF&G. Bridges were located using U.S. Geological Survey (USGS) Topographic Maps. State borders were taken from the 1994 Northern California ESI Atlas.

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 USGS 1:24,000 topographic quadrangles and digitized; 2) hardcopy maps are digitized at their source scale; and/or 3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer. The compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. If necessary, edits to the SOCECON data layer are made based on the recommendations of the resource experts.
experts, and final hardcopy maps and digital data are created.

Process_Date: 200812
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_orProvince: 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: 294

  SDTS_Terms_Description:
    SDTS_Point_and_Vector_Object_Type: Complete chain
    Point_and_Vector_Object_Count: 5

  SDTS_Terms_Description:
    SDTS_Point_and_Vector_Object_Type: Link
    Point_and_Vector_Object_Count: 11

  SDTS_Terms_Description:
    SDTS_Point_and_Vector_Object_Type: Node, planar graph
    Point_and_Vector_Object_Count: 9

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

    Geodetic_Model:
      Horizontal_Datum_Name: North American Datum of 1927
      Ellipsoid_Name: Clark 1866
      Semi-major_Axis: 6378206.400000
      Denominator_of_Flatting_Ratio: 294.978698

Entity_and_Attribute_Information:
  Overview_Description:
    Entity_and_Attribute_Overview:
      In addition to the geographic data layers, two relational attribute or data tables, SOC_DAT,
and SOURCES, are used to store the complex socioeconomic data in the ESI data structure. The geographic data layer containing socioeconomic data resource information (in this case, SOCECON) is linked to the Socioeconomic Resources table (SOC_DAT) using the unique ID and the lookup table SOC_LUT, or it can be linked directly using HUNUM. HUNUM is a unique reference number concatenated with the atlas number (for Northern California, the number is 207). ID is a unique combination of the atlas number (207), 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 areas, airports, aquaculture sites, beaches, boat ramps, coast guard areas, commercial/recreational fishing areas, essential habitat points, historical sites, hoist areas, marinas, staging areas, subsistence areas, wash overs, and water intakes. Note that all attribute information is stored in a series of relational files, described below. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the relationships between attribute tables in the ESI data structure.

**Entity_Type_Definition_Source:** Research Planning, Inc.

**Attribute:**

**Attribute_Label:** TYPE

**Attribute_Definition:**

The human-use features depicted on the maps are those that could be impacted by an oil spill or could provide access for response operations.

**Attribute_Definition_Source:** Research Planning, Inc.

**Attribute_Domain_Values:**

**Enumerated_Domain:**

**Enumerated_Domain_Value:** A

**Enumerated_Domain_Value_Definition:** Airport

**Enumerated_Domain_Value_Definition_Source:** Research Planning, Inc.

**Enumerated_Domain:**

**Enumerated_Domain_Value:** A2

**Enumerated_Domain_Value_Definition:** Access area

**Enumerated_Domain_Value_Definition_Source:** Research Planning, Inc.

**Enumerated_Domain:**

**Enumerated_Domain_Value:** AQ

**Enumerated_Domain_Value_Definition:** Aquaculture site

**Enumerated_Domain_Value_Definition_Source:** Research Planning, Inc.

**Enumerated_Domain:**

**Enumerated_Domain_Value:** B

**Enumerated_Domain_Value_Definition:** Beach

**Enumerated_Domain_Value_Definition_Source:** Research Planning, Inc.

**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: CF
  Enumerated_Domain_Value_Definition: Commercial Fishing
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Enumerated_Domain:
  Enumerated_Domain_Value: CG
  Enumerated_Domain_Value_Definition: Coast Guard site
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Enumerated_Domain:
  Enumerated_Domain_Value: EH
  Enumerated_Domain_Value_Definition: Essential Habitat
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Enumerated_Domain:
  Enumerated_Domain_Value: H
  Enumerated_Domain_Value_Definition: Hoist
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Enumerated_Domain:
  Enumerated_Domain_Value: HS
  Enumerated_Domain_Value_Definition: Historical site
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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

Enumerated_Domain:
  Enumerated_Domain_Value: RF
  Enumerated_Domain_Value_Definition: Recreational Fishing
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Enumerated_Domain:
  Enumerated_Domain_Value: S
  Enumerated_Domain_Value_Definition: Subsistence
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Enumerated_Domain:
  Enumerated_Domain_Value: ST
  Enumerated_Domain_Value_Definition: Staging site
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: WO
  Enumerated_Domain_Value_Definition: Wash Over
  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 (207), element number
  (10), and record number.
  Attribute_Definition_Source: NOAA
  Attribute_Domain_Values:
  Range_Domain:
    Range_Domain_Minimum: 2071000001
    Range_Domain_Maximum: 2071000294

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: 207000001
    Range_Domain_Maximum: 207000297

Detailed_Description:
  Entity_Type:
    Entity_Type_Label: SOCECON.AAT
    Entity_Type_Definition:
    The SOCECON.AAT table contains attribute information for the vector lines
    representing bridges and state borders. Note that all attribute information is stored in a
    series of relational files, described below. See the Browse_Graphic section for a link to
    the entity-relationship diagram, which describes the relationships between attribute
    tables in the ESI data structure.
    Entity_Type_Definition_Source: Research Planning, Inc.
  Attribute:
    Attribute_Label: TYPE
    Attribute_Definition:
    The human-use features depicted on the maps are those that could be impacted by an
    oil spill or could provide access for response operations.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
      Enumerated_Domain:
        Enumerated_Domain_Value: R
        Enumerated_Domain_Value_Definition: Road, Transportation, or Bridge
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
      Enumerated_Domain:
        Enumerated_Domain_Value: SB
        Enumerated_Domain_Value_Definition: State Border
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

  Detailed_Description:
**Entity** **Type:**

*Entity** **Type** **Label:** SOC_LUT

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

*Entity** **Type** **Definition** **Source:** Research Planning, Inc.

**Attribute:**

*Attribute** **Label:** HUNUM

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

*Attribute** **Definition** **Source:** NOAA

*Attribute** **Domain** **Values:**

<table>
<thead>
<tr>
<th>Range <strong>Domain</strong> <strong>Minimum</strong></th>
<th>Range <strong>Domain</strong> <strong>Maximum</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>207000001</td>
<td>207000336</td>
</tr>
</tbody>
</table>

**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 (207), 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:**

<table>
<thead>
<tr>
<th>Range <strong>Domain</strong> <strong>Minimum</strong></th>
<th>Range <strong>Domain</strong> <strong>Maximum</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>2071000001</td>
<td>2071100359</td>
</tr>
</tbody>
</table>

**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:**

<table>
<thead>
<tr>
<th>Range <strong>Domain</strong> <strong>Minimum</strong></th>
<th>Range <strong>Domain</strong> <strong>Maximum</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>207000001</td>
<td>207000336</td>
</tr>
</tbody>
</table>

**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:** AIRPORT
  - **Enumerated Domain Value Definition:** Airport
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

- **Enumerated Domain:**
  - **Enumerated Domain Value:** ACCESS
  - **Enumerated Domain Value Definition:** Access area
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

- **Enumerated Domain:**
  - **Enumerated Domain Value:** AQUACULTURE
  - **Enumerated Domain Value Definition:** Aquaculture
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

- **Enumerated Domain:**
  - **Enumerated Domain Value:** BEACH
  - **Enumerated Domain Value Definition:** Beach
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

- **Enumerated Domain:**
  - **Enumerated Domain Value:** BOAT RAMP
  - **Enumerated Domain Value Definition:** Boat Ramp
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

- **Enumerated Domain:**
  - **Enumerated Domain Value:** COMMERCIAL FISHING
  - **Enumerated Domain Value Definition:** Commercial Fishing
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

- **Enumerated Domain:**
  - **Enumerated Domain Value:** COAST GUARD
  - **Enumerated Domain Value Definition:** Coast Guard site
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

- **Enumerated Domain:**
  - **Enumerated Domain Value:** DESIGNATED CRITICAL HABITAT
  - **Enumerated Domain Value Definition:** Designated Critical Habitat
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

- **Enumerated Domain:**
  - **Enumerated Domain Value:** ESSENTIAL HABITAT
  - **Enumerated Domain Value Definition:** Essential Habitat
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

- **Enumerated Domain:**
  - **Enumerated Domain Value:** HOIST
  - **Enumerated Domain Value Definition:** Hoist
Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: HISTORICAL SITE
Enumerated Domain Value Definition: Historical Site
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: MULTIPLE RECORDS
Enumerated Domain Value Definition: Multiple types overlap in the polygon
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
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: STAGING SITE
  Enumerated_Domain_Value_Definition: Staging Site
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: WATER INTAKE
    Enumerated_Domain_Value_Definition: Water Intake
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: WASH OVER
    Enumerated_Domain_Value_Definition: Wash Over
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: WILDLIFE REFUGE
    Enumerated_Domain_Value_Definition: Wildlife Refuge
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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

Attribute:
  Attribute_Label: CONTACT
  Attribute_Definition: Contact person or entity
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Unrepresentable_Domain: Acceptable values change from atlas to atlas.

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

Attribute:
  Attribute_Label: G_SOURCE
  Attribute_Definition:
    Geographic source identifier that links records in the SOC_DAT data table to records in the SOURCES data table.
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum: 1
      Range_Domain_Maximum: N

Attribute:
  Attribute_Label: A_SOURCE
  Attribute_Definition:
    Attribute source identifier that links records in the SOC_DAT data table to records in the SOURCES data table.
Attribute Definition Source: Research Planning, Inc.

Attribute Domain Values:

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

Detailed Description:

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

Entity Type Definition Source: Research Planning, Inc.

Attribute:
- Attribute Label: SOURCE_ID
- Attribute Definition:
  Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; and SOURCE_ID in the ESI and HYDRO data layers.

Attribute Definition Source: Research Planning, Inc.

Attribute Domain Values:

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

Attribute:
- Attribute Label: ORIGINATOR
- Attribute Definition: Author or developer of source material or data set.
- Attribute Definition Source: Research Planning, Inc.
- Attribute Domain Values:
  Unrepresentable Domain: Acceptable values change from atlas to atlas.

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

Attribute:
- Attribute Label: TITLE
- Attribute Definition: Title of source material or data.
- Attribute Definition Source: Research Planning, Inc.
- Attribute Domain Values:
  Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:
- Attribute Label: DATA_FORMAT
- Attribute Definition: The format of the source material.
- Attribute Definition Source: Research Planning, Inc.
Attribute_Domain_Values:
Unrepresentable_Domain: Acceptable values change from atlas to atlas.

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

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

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

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

Resource_Description: ESI Atlas for Northern California

Distribution_Liability:
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration (NOAA), 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 the widest community of GIS/mapping users. Distribution formats include Access Personal Geodatabase, ARC export files, Shape files, and MARPLOT map folders. An ArcMap .mxd file, an ArcView 3.x ESI project, and an ESI_Viewer product for use with the MARPLOT data are also included on the distribution CDs/DVDs 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:** 200902  
- **Metadata Review Date:** 200902  
- **Metadata Contact:**  
  - **Contact Person Primary:** Jill Petersen  
  - **Contact Organization:** NOAA, Office of Response and Restoration  
  - **Contact Position:** GIS Manager  
  - **Address Type:** Physical Address  
  - **Address:** 7600 Sand Point Way, N.E.  
  - **City:** Seattle  
  - **State or Province:** Washington  
  - **Postal Code:** 98115-6349  
  - **Contact Voice Telephone:** (206) 526-6944  
  - **Contact Facsimile Telephone:** (206) 526-6329  
  - **Contact Electronic Mail Address:** Jill.Petersen@noaa.gov  

- **Metadata Standard Name:** Content Standards for Digital Geospatial Metadata  
- **Metadata Standard Version:** FGDC-STD-001-1998

---

Generated by mp version 2.8.21 on Thu Mar 19 21:31:09 2009
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: BIRDS (Bird Polygons)

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

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: Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: BIRDS (Bird Polygons)


Publication Date: 200812

Title: Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: BIRDS (Bird Polygons)

Edition: Second

Geospatial Data Presentation Form: Vector digital data

Series Information:

- Series Name: None
- Issue Identification: Northern California

Publication Information:

- Publication Place: Seattle, Washington

Other Citation Details:

This data set contains sensitive biological resource data for alcids, diving birds, gulls, terns, passerines, pelagic birds, raptors, shorebirds, wading birds, and waterfowl in Northern California. Vector polygons in this data set represent bird nesting, migratory staging, roosting, 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 Northern California. 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 Northern California ESI database, for additional bird information.

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.

The biological data were compiled during 2007. The currentness dates for the data range from 1975 to 2007 and are documented in the Lineage section.

Status:
Progress: Complete
Maintenance and Update Frequency: None Scheduled

Spatial Domain:
Bounding Coordinates:
West Bounding Coordinate: -124.45800
East Bounding Coordinate: -122.75000
North Bounding Coordinate: 37.97900
South Bounding Coordinate: 42.00000

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: Bird
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 Northern California ESI data.
Browse Graphic File Type: JPEG

Data Set Credit:

This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Emergency Response Division (formerly Hazardous Materials Response Division), Seattle, Washington and Assessment and Restoration Division, Silver Spring, Maryland; Department of Homeland Security, U.S. Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.; and Department of Fish and Game, Office of Spill Prevention and Response, Sacramento, California.

Native Data Set Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO® (version 9.2) and SQL SERVER® (version 2000). The hardware configuration is PCs 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, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, soc_econ.e00, t_mammal.e00. Associated relational and desktop data tables provided in ARC export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soclut, 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® to ARC/INFO® consistencies. A final review is made by the GIS manager, where the data are written to CD or DVD, 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 IDs and RARNUMs or HUNUMs are also generated. The new IDs 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 RARNUMs are also modified to include the atlas number, so multiple atlases can be combined and RARNUMs remain unique. RARNUMs are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUMs are also modified to include the atlas number.

**Completeness_Report:**
These data represent a synthesis of expert knowledge, available hardcopy documents, survey data, maps, and digital data on bird nesting, wintering, migratory staging and other spatial/temporal concentration areas. See also the NESTS (Nest Points) data layer, part of the larger Northern California ESI database, for additional bird information. These data do not necessarily represent all bird occurrences in Northern California. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 1, Common loon, Gavia immer; 3, Red-throated loon, Gavia stellata; 4, Red-necked grebe, Podiceps grisegena; 5, Horned grebe, Podiceps auritus; 6, Eared grebe, Podiceps nigricollis; 7, Western grebe, Aechmophorus occidentalis; 8, Double-crested cormorant, Phalacrocorax auritus; 9, Brandt's cormorant, Phalacrocorax penicillatus; 10, Pelagic cormorant, Phalacrocorax pelagicus; 11, Tundra swan, Cygnus columbianus; 12, Canada goose, Branta canadensis; 13, Brant, Branta bernicla; 16, Mallard, Anas platyrhynchos; 17, Northern pintail, Anas acuta; 18, Green-winged teal, Anas crecca; 20, Northern shoveler, Anas clypeata; 21, Canvasback, Aythya valisineria; 22, Greater scaup, Aythya marila; 23, Lesser scaup, Aythya affinis; 24, Common goldeneye, Bucephala clangula; 26, Bufflehead, Bucephala albeola; 28, Harlequin duck, Histrionicus histrionicus; 29, White-winged scoter, Melanitta fusca; 30, Surf scoter, Melanitta perspicillata; 31, Pacific loon, Gavia pacifica; 32, Common merganser, Mergus merganser; 33, Red-breasted merganser, Mergus serrator; 34, American coot, Fulica americana; 36, Glaucous-winged gull, Larus glaucescens; 37, Western gull, Larus occidentalis; 38, Herring gull, Larus argentatus; 39, California gull, Larus californicus; 40, Ring-billed gull, Larus delawarensis; 41, Mew gull, Larus canus; 42, Bonaparte's gull, Larus philadelphia; 43, Heermann's gull, Larus heermanni; 46, Common murre, Uria aalge; 47, Pigeon guillemot, Cepphus columba; 48, Marble murrelet, Brachyramphus marmoratus; 49, Cassin's auklet, Ptychoramphus aleuticus; 50, Rhinoceros auklet, Cerorhinca monocerata; 54, Great blue heron, Ardea herodias; 55, Whimbrel, Numenius phaeopus; 57, Wandering tattler, Heteroscelus incanus; 58, Greater yellowlegs, Tringa melanoleuca; 62, Least sandpiper, Calidris minutilla; 63, Dunlin, Calidris alpina; 64, Short-billed dowitcher, Limnodromus griseus; 65, Long-billed dowitcher, Limnodromus scolopes; 66, Western sandpiper, Calidris mauri; 67, Sanderling, Calidris alba; 68, Black oystercatcher, Haematopus bachmani; 69, Semipalmated plover, Charadrius semipalmatus; 70, Killdeer, Charadrius vociferus; 71, Black-bellied plover, Pluvialis squatarola; 72, Surfbird, Aphriza virgata; 74, Black turnstone, Arenaria melanocephala; 76, Bald eagle, Haliaeetus
leucocephalus; 77, Osprey, Pandion haliaetus; 88, Great egret, Ardea alba; 89, Snowy egret, Egretta thula; 90, Black-crowned night-heron, Nycticorax nycticorax; 93, Cattle egret, Bubulcus ibis; 97, Green heron, Butorides virescens; 118, Brown pelican, Pelecanus occidentalis; 124, Redhead, Aythya americana; 131, White-tailed kite, Elanus leucurus; 136, Caspian tern, Sterna caspia; 138, Forster's tern, Sterna forsteri; 141, American avocet, Recurvirostra americana; 145, Elegant tern, Sterna elegans; 148, Ruddy duck, Oxyura jamaicensis; 151, Saltmarsh common yellowthroat, Geothlypis trichas sinuosa; 155, Willet, Catoptrophorus semipalmatus; 160, Red phalarope, Phalaropus fulicaria; 161, Rock sandpiper, Calidris ptilocnemis; 162, Gadwall, Anas strepera; 169, American wigeon, Anas americana; 173, American white pelican, Pelecanus erythrorhynchos; 174, Golden eagle, Aquila chrysaetos; 177, Bank swallow, Riparia riparia; 179, Pied-billed grebe, Podilymbus podiceps; 180, Ring-necked duck, Aythya collaris; 181, Northern harrier, Circus cyaneus; 182, American kestrel, Falco sparverius; 185, American bittern, Botaurus lentiginosus; 187, Virginia rail, Rallus limicola; 191, Wood duck, Aix sponsa; 197, Black scoter, Melanitta nigra; 198, Hooded merganser, Lophodytes cucullatus; 200, Sooty shearwater, Puffinus griseus; 204, California clapper rail, Rallus longirostris obsoletus; 206, California black rail, Laterallus jamaicensis coturniculus; 207, Tricolored blackbird, Agelaius tricolor; 209, Long-billed curlew, Numenius americanus; 210, Marbled godwit, Limosa fedoa; 215, Aleutian cackling goose, Branta hutchinssii leucopareia; 216, Belted kingfisher, Ceryle alcyon; 218, Red-shouldered hawk, Buteo lineatus; 220, Merlin, Falco columbarius; 230, Red-tailed hawk, Buteo jamaicensis; 239, Clark's grebe, Aechmophorus clarkii; 254, Laysan albatross, Phoebastria immutabilis; 270, Western snowy plover, Charadrius alexandrinus nivosus; 273, Geese, n/a; 302, Scoters, Melanitta spp.; 349, Burrowing owl, Athene cunicularia hypugea; 396, Phalaropes, Phalaropus spp.; 406, Cinnamon teal, Anas cyanoptera; 455, Yellow-billed cuckoo, Coccyzus americanus; 626, American peregrine falcon, Falco peregrinus anatum; 722, Common yellowthroat, Geothlypis trichas; 814, Band-tailed pigeon, Patagioenas fasciata; 1001, Gulls, n/a; 1002, Shorebirds, n/a; 1003, Waterfowl, n/a; 1004, Wading birds, n/a; 1005, Raptors, n/a; 1006, Diving birds, n/a; 1008, Terns, n/a; 1009, Shearwaters, n/a; 1013, Dabbling ducks, n/a; 1014, Diving ducks, n/a; 1019, Sea ducks, n/a; 1021, Ducks, n/a; 1022, Seabirds, n/a; 1026, Grebes, n/a; 1035, Pelicans, Pelecanus spp.; 1037, Cormorants, Phalacrocorax spp.

**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: ADAMS, J. (US GEOLOGICAL SURVEY, MOSS LANDING)*

*Publication Date: 2005*

*Title: DISTRIBUTION OF SEABIRDS AND MARINE MAMMALS IN*
CENTRAL CALIFORNIA

Type_of_Source_Media: PERSONAL COMMUNICATION
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: BIRDS INFORMATION
Source_Information:
  Citation_Information:
    Originator: ALLEN, S. (NATIONAL PARK SERVICE, POINT REYES)
    Publication_Date: 2005
    Title: DISTRIBUTION AND SEASONALITY OF SPECIES AND SOC_ECON FEATURES ON NPS LANDS

Type_of_Source_Media: PERSONAL COMMUNICATION
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: BIRDS INFORMATION
Source_Information:
  Citation_Information:
    Originator: ANDERSON, D. (NPS, ORICK)
    Publication_Date: 2007
    Title: REDWOOD NATIONAL PARK RESOURCES

Type_of_Source_Media: PERSONAL COMMUNICATION
Source_Time_Period_of_Content:
  Time_Period_Information:
    Single_Date/Time:
      Calendar_Date: 2007
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: BIRDS INFORMATION
Source_Information:
  Citation_Information:
    Originator: CALIFORNIA STATE PARKS (CSP) NORTH COAST REDWOODS DISTRICT (NCRD)
    Publication_Date: 2005
Title:
MAPS OF SPECIAL STATUS SPECIES, REC ACTIVITIES, AND MGT
ISSUES AT CSP NCRD STATE PARKS

Geospatial Data Presentation Form: HARDCOPY MAP
Other Citation Details: CSP NORTH COAST REDWOOD DISTRICT

Source Scale Denominator: 10,000-20,000
Type of Source Media: PAPER
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: BIRDS INFORMATION
Source Information:
Source Citation:
Citation Information:
Originator:
CAPITOLO, CARTER, YOUNG, MCCHERSNYES, MCIVER,
GOLIGHTLY, AND GRESS
Publication Date: 2004

Title:
CHANGES IN BREEDING POPULATION SIZE OF BRANDT'S AND
DOUBLE-CRESTED CORMORANTS IN CALIFORNIA, 1975-2003

Geospatial Data Presentation Form: HARDCOPY TEXT
Other Citation Details:
UNPUBLISHED REPORT, DEPARTMENT OF WILDLIFE,
HUMBOLDT STATE UNIVERSITY (HSU), ARCATA, CALIFORNIA

Type of Source Media: PAPER
Source Time Period of Content:
Time Period Information:
Range of Dates/Times:
Beginning Date: 1975
Ending Date: 2003
Source Currentness Reference: DATE OF SURVEY
Source Citation Abbreviation: NONE
Source Contribution: BIRDS INFORMATION
Source Information:
Source Citation:
Citation Information:
Originator: CAPITOLO, MCCHERSNYES, CARTER, PARKER, HALL,
YOUNG, GOLIGHTLY
Publication Date: 2006

Title:
WHOLE-COLONY COUNTS OF COMU, BRCO, AND DCCO AT
SAMPLE COLONIES IN NORTHERN AND CENTRAL CALIFORNIA,
1996-2004

Geospatial Data Presentation Form: HARDCOPY TEXT
Other Citation Details:
UNPUBLISHED REPORT, DEPT. OF WILDLIFE, HSU, ARCATA, CA;
USFWS, SFB NWR COMPLEX, NEWARK, CA. 40 PP.

Type of Source Media: PAPER
Source Time Period of Content:
Time Period Information:
Single Date/Time:
Calendar Date: 2006
Source Currentness Reference: DATE OF PUBLICATION
Source Citation Abbreviation: NONE
Source Contribution: BIRDS INFORMATION
Source Information:
Source Citation:
Citation Information:
Originator:
CALIFORNIA DEPT. OF FISH & GAME (CDF&G) BIOGEOGRAPHIC DATA BRANCH
Publication Date: 2007
Title: CALIFORNIA NATURAL DIVERSITY DATABASE
Geospatial Data Presentation Form: VECTOR DIGITAL DATA
Other Citation Details:
<http://www.dfg.ca.gov/biogeodata/> (Contact the site webmaster if this URL is no longer active.)
Source Scale Denominator: VARIES
Type of Source Media: CD-ROM
Source Time Period of Content:
Time Period Information:
Single Date/Time:
Calendar Date: 2007
Source Currentness Reference: DATE OF PUBLICATION
Source Citation Abbreviation: NONE
Source Contribution: BIRDS INFORMATION
Source Information:
Source Citation:
Citation Information:
Originator: CDF&G, U.S. COAST GUARD (USCG)
Publication Date: 2005
Title:
SAN FRANCISCO GEOGRAPHIC RESPONSE AREA 1 SONOMA AND NORTH MARIN COAST
Geospatial Data Presentation Form: HARDCOPY TEXT
Other Citation Details: ACP 2 SF BAY & DELTA - GRA 1
Type of Source Media: DISC
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: BIRDS INFORMATION
Source Information:
Source Citation:
Citation Information:

Northern California ESI: BIRDS (Bird Polygons)
Publication Date: 2003
Title:
VARIATION IN SHOREBIRD USE OF DIURNAL, HIGH-TIDE ROOSTS: HOW CONSISTENTLY ARE ROOSTS USED?
Geospatial Data Presentation Form: HARDCOPY TEXT
Other Citation Details: WATERBIRDS: VOLUME 26, ISSUE 4 (PP. 484-493)
Type of Source Media: ONLINE
Source Time Period of Content:
Time Period Information:
Single Date/Time:
Calendar Date: 2003
Source Currentness Reference: DATE OF PUBLICATION
Source Citation Abbreviation: NONE
Source Contribution: BIRDS INFORMATION
Source Information:
Source Citation:
Citation Information:
Originator: DAYTON, J. (CDF&G)
Publication Date: 2007
Title: FISH, WILDLIFE, AND HABITAT DISTRIBUTION IN NORTHERN CALIFORNIA
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: 2007
Source Currentness Reference: DATE OF COMMUNICATION
Source Citation Abbreviation: NONE
Source Contribution: BIRDS INFORMATION
Source Information:
Source Citation:
Citation Information:
Originator: DEUEL, B. (CDF&G, REDDING)
Publication Date: 2007
Title:
BIRD AND MAMMAL DISTRIBUTION AND SEASONALITY IN NORTHERN CALIFORNIA
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: 2007
Source Currentness Reference: DATE OF COMMUNICATION
Source Citation Abbreviation: NONE
Source Contribution: BIRDS INFORMATION
Source Information:
Source Citation:
Citation Information:
Originator: HARRIS, JAY (CSP, EUREKA)
Publication_Date: 2007
Title: CALIFORNIA STATE PARK RESOURCES
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: 2007
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Source_Citation_Abbreviation: NONE
Source_Contribution: BIRDS INFORMATION
Source_Information:
  Source_Citation:
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      Originator: HARRIS, S.
      Publication_Date: 2006
      Title: NORTHEASTERN CALIFORNIA BIRDS
      Geospatial_Data_Presentation_Form: HARDCOPY TEXT
      Other_Citation_Details: LIVING GOLD PRESS, KLAMATH RIVER, CA
      Type_of_Source_Media: PAPER
      Source_Time_Period_of_Content:
        Time_Period_Information:
          Single_Date/Time:
            Calendar_Date: 2006
      Source_Currentness_Reference: DATE OF PUBLICATION
      Source_Citation_Abbreviation: NONE
      Source_Contribution: BIRDS INFORMATION
    Source_Information:
      Source_Citation:
        Citation_Information:
          Originator: HUMBOLDT STATE UNIVERSITY
          Publication_Date: 2007
          Title: ARCATA MARSH AND WILDLIFE SANCTUARY
          Geospatial_Data_Presentation_Form: HARDCOPY TEXT
          Other_Citation_Details:
            <http://www.humboldt.edu/~ere_dept/marsh/birds.html> (Contact the site webmaster if this URL is no longer active.)
          Type_of_Source_Media: ONLINE
          Source_Time_Period_of_Content:
            Time_Period_Information:
              Single_Date/Time:
                Calendar_Date: 2007
          Source_Currentness_Reference: DATE OF PUBLICATION
          Source_Citation_Abbreviation: NONE
          Source_Contribution: BIRDS INFORMATION
        Source_Information:
          Source_Citation:
            Citation_Information:
              Originator: KELLY, J.P. AND S.L. TAPPEN
              Publication_Date: 1998
Title: DISTRIBUTION, ABUNDANCE, AND IMPLICATIONS FOR CONSERVATION FOR WINTER WATERBIRDS ON TOMALES BAY, CALIFORNIA

Type of Source Media: ONLINE

Source Time Period of Content:
Time Period Information:
Single Date/Time:
Calendar Date: 1998
Source Currentness Reference: DATE OF PUBLICATION
Source Citation Abbreviation: NONE
Source Contribution: BIRDS INFORMATION

Source Information:
Source Citation:
Citation Information:
Originator: KOVACS, K.
Publication Date: 2007
Title: WADING BIRD, RAPTOR, AND FISH DISTRIBUTION AND SEASONALITY
Geospatial Data Presentation Form: EXPERT KNOWLEDGE
Other Citation Details: UNPUBLISHED

Type of Source Media: PERSONAL COMMUNICATION

Source Time Period of Content:
Time Period Information:
Single Date/Time:
Calendar Date: 2007
Source Currentness Reference: DATE OF COMMUNICATION
Source Citation Abbreviation: NONE
Source Contribution: BIRDS INFORMATION

Source Information:
Source Citation:
Citation Information:
Originator: LEVALLEY, R. (MAD RIVER BIOLOGISTS, ARCATA)
Publication Date: 2007
Title: COASTAL RESOURCE DISTRIBUTION AND SEASONALITY IN NORTHERN CALIFORNIA
Geospatial Data Presentation Form: EXPERT KNOWLEDGE
Other Citation Details: UNPUBLISHED

Type of Source Media: PERSONAL COMMUNICATION
Originator: MADRONE AUDUBON SOCIETY  
Publication_Date: 2000  
Title: GUALALA RIVER  
Geospatial_Data_Presentation_Form: HARDCOPY TEXT  
Other_Citation_Details:  
<http://audubon.sonoma.net/birding/RROS.html#anchor126937> (Contact the site webmaster if this URL is no longer active.)

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: BIRDS INFORMATION  
Source_Information:  
Source_Citation:  
Citation_Information:  
Originator: MADRONE AUDUBON SOCIETY, SONOMA COUNTY, CALIFORNIA, USA  
Publication_Date: 1997  
Title: BODEGA BAY  
Geospatial_Data_Presentation_Form: WEBSITE  
Other_Citation_Details:  
<http://audubon.sonoma.net/birding/bodega_bay.html> (Contact the site webmaster if this URL is no longer active.)

Type_of_Source_Media: ONLINE  
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: BIRDS INFORMATION  
Source_Information:  
Source_Citation:  
Citation_Information:  
Originator: MBNMS, CDF&G OSPR, MBSF  
Publication_Date: 2006  
Title:  
SENSITIVITY OF COASTAL ENVIRONMENTS TO SPILLED OIL: CENTRAL CALIFORNIA ATLAS  
Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA  
Other_Citation_Details: NOAA OR&R HAZMAT, SEATTLE, WASHINGTON  
Source_Scale_Denominator: VARIES  
Type_of_Source_Media: CD-ROM  
Source_Time_Period_of_Content:  
Time_Period_Information:  
Single_Date/Time:  
Calendar_Date: 2006  
Source_Currentness_Reference: DATE OF PUBLICATION  
Source_Citation_Abbreviation: NONE
Source_Contribution: BIRDS INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
  Originator: MELLO, J. (CDF&G, EUREKA)
  Publication_Date: 2007
  Title: MARINE RESOURCE DISTRIBUTION AND SEASONALITY IN NORTHERN CALIFORNIA
Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
Other_Citation_Details: UNPUBLISHED
Type_of_Source_Media: PERSONAL COMMUNICATION
Source_Time_Period_of_Content:
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      Calendar_Date: 2007
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: BIRDS INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
  Originator: MILLER, MEYER, AND RALPH; RALPH AND MILLER
  Publication_Date: 2002
  Title: LAND/SEASCAPE PATTERNS ASSOCIATED W/ MARBLED MURRELETS ABUNDANCE OFFSHORE; OFFSHORE POP ESTIMATES OF MARBLED MURRELETS
Geospatial_Data_Presentation_Form: HARDCOPY TEXT
Other_Citation_Details:
Type_of_Source_Media: PAPER
Source_Time_Period_of_Content:
  Time_Period_Information:
    Range_of_Dates/Times:
      Beginning_Date: 1989
      Ending_Date: 1998
Source_Currentness_Reference: DATE OF SURVEY
Source_Citation_Abbreviation: NONE
Source_Contribution: BIRDS INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
  Originator: NELSON, E. (USFWS, LOLETA)
  Publication_Date: 2007
  Title: HUMBOLDT BAY NWR AND CASTLE ROCK NWR SPECIES DISTRIBUTION
Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
Other_Citation_Details: UNPUBLISHED
Type_of_Source_Media: PERSONAL COMMUNICATION
Source_Time_Period_of_Content:
Time_Period_Information:
  Single_Date/Time:
    Calendar_Date: 2007
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: BIRDS INFORMATION
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  Citation_Information:
    Originator: NPS
    Publication_Date: 2007
    Title: REDWOOD NATIONAL PARK RESOURCES
    Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
    Other_Citation_Details: UNPUBLISHED
  Type_of_Source_Media: PERSONAL COMMUNICATION
Source_Time_Period_of_Content:
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    Single_Date/Time:
      Calendar_Date: 2007
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: BIRDS INFORMATION
Source_Information:
  Citation_Information:
    Originator: PAGE, G.
    Publication_Date: 2007
    Title: SNOWY PLOVER DISTRIBUTION AND SEASONALITY
    Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
    Other_Citation_Details: UNPUBLISHED
  Type_of_Source_Media: PERSONAL COMMUNICATION
Source_Time_Period_of_Content:
  Time_Period_Information:
    Single_Date/Time:
      Calendar_Date: 2007
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: BIRDS INFORMATION
Source_Information:
  Citation_Information:
    Originator: PRBO
    Publication_Date: 2007
    Title: 2003-2007 SUMMER AND WINTER SNOWY PLOVER SURVEYS OF THE PACIFIC COAST
    Geospatial_Data_Presentation_Form: SPREADSHEET
    Other_Citation_Details: UNPUBLISHED
  Type_of_Source_Media: EMAIL
Source_Time_Period_of_Content:
  Time_Period_Information:
    Range_of_Dates/Times:
Beginning Date: 2003
Ending Date: 2007
Source Currentness Reference: DATE OF SURVEY
Source Citation Abbreviation: NONE
Source Contribution: BIRDS INFORMATION
Source Information:
Source Citation:
Citation Information:
Originator: ROBERSON, D.
Publication Date: 2002
Title: MONTEREY BIRDS
Geospatial Data Presentation Form: HARDCOPY TEXT
Other Citation Details: MONTEREY PENINSULA AUDUBON SOCIETY, CARMEL, CA
Type of Source Media: PAPER
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: BIRDS INFORMATION
Source Information:
Source Citation:
Citation Information:
Originator: STRONG, C.S. AND JAQUES, D.L.
Publication Date: 2000
Title:
   AERIAL SURVEYS OF BROWN PELICANS AT ROOST SITES WITHIN MBNMS/GFNMS, 1998-2000
Geospatial Data Presentation Form: HARDCOPY TEXT
Other Citation Details:
   A REPORT TO MBNMS AND GFNMS, THE AMERICAN TRADER OILSPILL RESTORATION TRUSTEE COUNCIL, AND CDF&G
Type of Source Media: DISC
Source Time Period of Content:
Time Period Information:
Range of Dates/Times:
   Beginning Date: 1998
   Ending Date: 2000
Source Currentness Reference: DATE OF SURVEY
Source Citation Abbreviation: NONE
Source Contribution: BIRDS INFORMATION
Source Information:
Source Citation:
Citation Information:
Originator: THE GOLD RIDGE RESOURCE CONSERVATION DISTRICT
Publication Date: 2007
Title: THE ESTERO AMERICANO WATERSHED MANAGEMENT PLAN
Geospatial Data Presentation Form: HARDCOPY TEXT
Other Citation Details:
   SWRCB CONTRACT NO. 03-138-250-1
Type of Source Media: ONLINE
Three main sources of data were used to depict bird distribution and seasonality for this data layer: 1) personal interviews with resource experts from the U.S. Fish and Wildlife Service (USFWS), California Department of Fish & Game (CDF&G), Mad River Biologists, Point Reyes Bird Observatory (PRBO), National Park Service (NPS), California State Parks (CSP) and NOAA; 2) numerous published and unpublished documents; and 3) digital data sets provided by CDF&G.

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; and/or 3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer. The compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. If necessary, edits to the BIRDS data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.
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: 7511
    SDTS Terms Description:
      SDTS Point and Vector Object Type: Area point
      Point and Vector Object Count: 7510
    SDTS Terms Description:
      SDTS Point and Vector Object Type: Complete chain
      Point and Vector Object Count: 8809
    SDTS Terms Description:
      SDTS Point and Vector Object Type: Link
      Point and Vector Object Count: 432248
    SDTS Terms Description:
      SDTS Point and Vector Object Type: Node, planar graph
      Point and Vector Object Count: 8152

Spatial Reference Information:
  Horizontal Coordinate System Definition:
    Geographic:
      Latitude Resolution: 0.0000001
      Longitude Resolution: 0.0000001
      Geographic Coordinate Units: Decimal degrees
    Geodetic Model:
      Horizontal Datum Name: North American Datum of 1927
      Ellipsoid Name: Clark 1866
      Semi-major Axis: 6378206.40000
      Denominator of Flattening Ratio: 294.978698

Entity and Attribute Information:
  Overview Description:
    Entity and Attribute Overview:
    In addition to the geographic data layers, six relational attribute or data tables, BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS, are used to store the complex biological data in the ESI data structure. The geographic data layer containing biological resource information (in this case, BIRDS) is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or it can be linked directly using RARNUM. The ID is a unique combination of the atlas number (for the Northern California atlas, the number is 207), an element/layer specific number (BIRDS are layer 1, FISH are layer 2, etc.), and a unique record number. The RARNUM represents a unique combination of species, seasonalities, concentrations, and source information. For each of
these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases. BIORES and the other relational data tables are described below in detail. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way these tables relate to the geographic data layers and other attribute tables in the ESI data structure.

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

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

Detailed_Description:

Entity_Type:

  Entity_Type_Label: BIRDS.PAT
  Entity_Type_Definition:
  The BIRDS.PAT table contains attribute information for the vector polygons in this data set representing bird nesting, migratory staging, roosting, 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 (207), 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: 2070100002
Range Domain Maximum: 2070107533

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: 207000001
      Range Domain Maximum: 207000506

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: 207000001
      Range Domain Maximum: 207001115

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 (207), 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: 2070100002
      Range Domain Maximum: 2072200500

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:**

<table>
<thead>
<tr>
<th>Range Domain</th>
<th>Range Domain Minimum</th>
<th>Range Domain Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>207000001</td>
<td>207001115</td>
</tr>
</tbody>
</table>

**Attribute:**

**Attribute Label:** SPECIES_ID

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

**Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

<table>
<thead>
<tr>
<th>Range Domain</th>
<th>Range Domain Minimum</th>
<th>Range Domain Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>N</td>
</tr>
</tbody>
</table>

**Attribute:**

**Attribute Label:** CONC

**Attribute Definition:**
The field CONC refers to "concentration," abundance, or density values, and may contain counts of individuals for each species present at a particular nesting or staging site, or a term that describes relative abundance of birds at a particular site. The field may contain counts of individuals (XX BIRDS or XX INDIV), a range of individuals (XX-XXX BIRDS), or an estimate (1000s). In cases where no quantitative data were available, the field may contain descriptive terms such as "HIGH" or "COMMON". If no concentration information was available from any source, the CONC field is populated with ".". Counts were derived from a variety of surveys, and may range in date (see the Lineage section).

**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:**

<table>
<thead>
<tr>
<th>Range Domain</th>
<th>Range Domain Minimum</th>
<th>Range Domain Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>N</td>
</tr>
</tbody>
</table>

**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**

**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.
**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**: SPECIES  
- **Entity Type Label**: SPECIES  
- **Entity Type Definition**: The data table SPECIES identifies all species in the ESI data set. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure. Refer to the Completeness_Report for a list of layer-specific species.  
- **Entity Type Definition Source**: 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_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.
  Enumerated_Domain:
    Enumerated_Domain_Value: FISH
    Enumerated_Domain_Value_Definition: Fish
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Enumerated_Domain:
    Enumerated_Domain_Value: HABITAT
    Enumerated_Domain_Value_Definition: Habitats and Plants
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Enumerated_Domain:
    Enumerated_Domain_Value: INVERT
    Enumerated_Domain_Value_Definition: Invertebrates
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Enumerated_Domain:
    Enumerated_Domain_Value: M_MAMMAL
    Enumerated_Domain_Value_Definition: Marine Mammals
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Enumerated_Domain:
    Enumerated_Domain_Value: REPTILE
    Enumerated_Domain_Value_Definition: Reptiles and Amphibians
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  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.

- **Enumerated Domain:**
  - **Enumerated Domain Value:** amphibian
  - **Enumerated Domain Value Definition:** Amphibian
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

- **Enumerated Domain:**
  - **Enumerated Domain Value:** bivalve
  - **Enumerated Domain Value Definition:** Bivalve
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

- **Enumerated Domain:**
  - **Enumerated Domain Value:** cephalopod
  - **Enumerated Domain Value Definition:** Cephalopod
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

- **Enumerated Domain:**
  - **Enumerated Domain Value:** crab
  - **Enumerated Domain Value Definition:** Crab
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

- **Enumerated Domain:**
  - **Enumerated Domain Value:** diadromous
  - **Enumerated Domain Value Definition:** Diadromous fish
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

- **Enumerated Domain:**
  - **Enumerated Domain Value:** diving
  - **Enumerated Domain Value Definition:** Diving bird
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

- **Enumerated Domain:**
  - **Enumerated Domain Value:** dolphin
  - **Enumerated Domain Value Definition:** Dolphin
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

- **Enumerated Domain:**
  - **Enumerated Domain Value:** echinoderm
  - **Enumerated Domain Value Definition:** Echinoderm
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

- **Enumerated Domain:**
  - **Enumerated Domain Value:** e_nursery
  - **Enumerated Domain Value Definition:** Estuarine nursery fish
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.
Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: e_resident
  Enumerated Domain Value Definition: Estuarine resident
  Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: freshwater
  Enumerated Domain Value Definition: Freshwater fish
  Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: gastropod
  Enumerated Domain Value Definition: Gastropod
  Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: gull_tern
  Enumerated Domain Value Definition: Gull or tern
  Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: insect
  Enumerated Domain Value Definition: Insect
  Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: 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: passerine
  Enumerated Domain Value Definition: Passerine bird
  Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: pelagic
  Enumerated Domain Value Definition: Pelagic bird
  Enumerated Domain Value Definition Source: Research Planning, Inc.
Enumerated_Domain_Value: pinniped
Enumerated_Domain_Value_Definition: Pinniped
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: plant
Enumerated_Domain_Value_Definition: Plant
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: raptor
Enumerated_Domain_Value_Definition: Raptor
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: sav
Enumerated_Domain_Value_Definition: Submerged aquatic vegetation
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 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: sm_mammal
Enumerated_Domain_Value_Definition: Small mammal
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: turtle
Enumerated_Domain_Value_Definition: Turtle
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: ungulate
Enumerated_Domain_Value_Definition: Ungulate
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: wading
Enumerated_Domain_Value_Definition: Wading bird
**Enumerated_Domain_Value_Definition_Source:** Research Planning, Inc.

**Attribute_Domain_Values:**

**Enumerated_Domain:**
- **Enumerated_Domain_Value:** waterfowl
- **Enumerated_Domain_Value_Definition:** Waterfowl
- **Enumerated_Domain_Value_Definition_Source:** Research Planning, Inc.

**Attribute_Domain_Values:**

**Enumerated_Domain:**
- **Enumerated_Domain_Value:** whale
- **Enumerated_Domain_Value_Definition:** Whale
- **Enumerated_Domain_Value_Definition_Source:** Research Planning, Inc.

**Attribute:**

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

**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.

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

**Attribute:**

**Attribute_Label:** EL_SPE
**Attribute_Definition:** Concatenation of ELEMENT and SPECIES_ID. This item links records in the SPECIES data table to records in the BIORES and STATUS data tables.
**Attribute_Definition_Source:** Research Planning, Inc.

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

Northern California ESI: BIRDS (Bird Polygons)
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.
<table>
<thead>
<tr>
<th>Attribute</th>
<th>Attribute Label</th>
<th>Attribute Definition</th>
<th>Attribute Definition Source</th>
<th>Enumerated Domain</th>
<th>Enumerated Domain Value</th>
<th>Enumerated Domain Value Definition</th>
<th>Enumerated Domain Value Definition Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attribute</td>
<td>OCT</td>
<td>October</td>
<td>Research Planning, Inc.</td>
<td>Enumerated Domain</td>
<td>X</td>
<td>Present in October</td>
<td>Research Planning, Inc.</td>
</tr>
<tr>
<td>Attribute</td>
<td>NOV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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').
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.

- **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.

- **Enumerated Domain Value:** -
  - **Enumerated Domain Value Definition:** Breed category not used or not appropriate for record(s) in question
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

Attribute:

**Attribute Label:** BREED2

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

**Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

**Enumerated Domain:**
- **Enumerated Domain Value:** Y
  - **Enumerated Domain Value Definition:** Life-history stage or activity present
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

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

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

Attribute:
    Attribute_Label: BREED3
    Attribute_Definition:
        Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED3 = molting; if ELEMENT is "FISH" then BREED3 = larvae; if ELEMENT is "INVERT" then BREED3 = larvae; if ELEMENT is "REPTILE" then BREED3 = internesting; if ELEMENT is "M_MAMMAL" then BREED3 = pupping. This attribute is not used for HABITAT or T_MAMMAL elements.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: Y
            Enumerated_Domain_Value_Definition: Life-history stage or activity present
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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

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

Attribute:
    Attribute_Label: BREED4
    Attribute_Definition:
        Life history stage or activity type, where: if ELEMENT is "FISH" then BREED4 = juveniles; if ELEMENT is "INVERT" then BREED4 = juveniles; if ELEMENT is "REPTILE" then BREED4 = juveniles; if ELEMENT is "M_MAMMAL" then BREED4 = molting. This attribute is not used for BIRD, HABITAT, or T_MAMMAL elements.
    Attribute_Definition_Source: Research Planning, Inc.
    Attribute_Domain_Values:
        Enumerated_Domain:
            Enumerated_Domain_Value: Y
            Enumerated_Domain_Value_Definition: Life-history stage or activity present
            Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated Domain:
  Enumerated Domain Value: N
  Enumerated Domain Value Definition: Life-history stage or activity not present or not reported
  Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: -
  Enumerated Domain Value Definition: Breed category not used or not appropriate for record(s) in question
  Enumerated Domain Value Definition Source: Research Planning, Inc.

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

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: Y
  Enumerated Domain Value Definition: Life-history stage or activity present
  Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: N
  Enumerated Domain Value Definition: Life-history stage or activity not present or not reported
  Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: -
  Enumerated Domain Value Definition: Breed category not used or not appropriate for record(s) in question
  Enumerated Domain Value Definition Source: Research Planning, Inc.

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

Attribute:
  Attribute Label: SOURCE_ID
  Attribute Definition:
  Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; and SOURCE_ID in the ESI and HYDRO data layers.
  Attribute Definition Source: Research Planning, Inc.

Attribute Domain Values:
Range_Domain:
  Range_Domain_Minimum: 1
  Range_Domain_Maximum: N

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

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

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

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

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

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

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

**Entity_Type:**

**Entity_Type_Label:** STATUS

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

**Entity_Type_Definition_Source:** Research Planning, Inc.

**Attribute:**

**Attribute_Label:** ELEMENT

**Attribute_Definition:** Major categories of biological data.

**Attribute_Definition_Source:** Research Planning, Inc.

**Attribute_Domain_Values:**

- **Enumerated_Domain:**
  - **Enumerated_Domain_Value:** BIRD
    - **Enumerated_Domain_Value_Definition:** Birds
    - **Enumerated_Domain_Value_Definition_Source:** Research Planning, Inc.
  - **Enumerated_Domain_Value:** FISH
    - **Enumerated_Domain_Value_Definition:** Fish
    - **Enumerated_Domain_Value_Definition_Source:** Research Planning, Inc.
  - **Enumerated_Domain_Value:** HABITAT
    - **Enumerated_Domain_Value_Definition:** Habitats and Plants
    - **Enumerated_Domain_Value_Definition_Source:** Research Planning, Inc.
  - **Enumerated_Domain_Value:** INVERT
    - **Enumerated_Domain_Value_Definition:** Invertebrates
    - **Enumerated_Domain_Value_Definition_Source:** Research Planning, Inc.
  - **Enumerated_Domain_Value:** M_MAMMAL
    - **Enumerated_Domain_Value_Definition:** Marine Mammals
    - **Enumerated_Domain_Value_Definition_Source:** Research Planning, Inc.
  - **Enumerated_Domain_Value:** REPTILE
    - **Enumerated_Domain_Value_Definition:** Reptiles and Amphibians
    - **Enumerated_Domain_Value_Definition_Source:** Research Planning, Inc.
  - **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: STATE
Attribute_Definition: Two-letter state abbreviation.
Attribute_Definition_Source: Research Planning, Inc.

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute: COUNTRY
Attribute_Definition: Three-letter country abbreviation.
Attribute_Definition_Source: Research Planning, Inc.

Unrepresentable_Domain: Acceptable values change from atlas to atlas.

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

Enumerated_Domain:
Enumerated_Domain_Value: E
Enumerated_Domain_Value_Definition: Endangered on state list
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

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

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

Attribute: F
Attribute_Definition: Federal threatened or endangered status.
Attribute_Definition_Source: Research Planning, Inc.

Enumerated_Domain:
Enumerated_Domain_Value: E
Enumerated_Domain_Value_Definition: Endangered on federal list
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

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

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: 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.

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

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

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

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

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.

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**: 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.

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**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 Northern California

**Distribution Liability**: 

Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration (NOAA), 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 the widest community of GIS/mapping users. Distribution formats include Access Personal Geodatabase, ARC export files, Shape files, and MARPLOT map folders. An ArcMap .mxd file, an ArcView 3.x ESI project, and an ESI_Viewer product for use with the MARPLOT data are also included on the distribution CDs/DVDs 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: 200902
Metadata_Review_Date: 200902
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

Generated by md version 2.8.21 on Thu Mar 19 19:32:13 2009
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: NESTS (Nest Points)

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

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:


Publication_Date: 200812

Title:
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: NESTS (Nest Points)

Edition: Second

Geospatial_Data_Presentation_Form: Vector digital data

Series_Information:

Series_Name: None

Issue_Identification: Northern California

Publication_Information:

Publication Place: Seattle, Washington

Publisher:

Other_Citation_Details:
Description:

Abstract:
This data set contains sensitive biological resource data for seabirds, diving birds, gulls, terns, and shorebirds in Northern California. Vector points in this data set represent bird nesting and roosting 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 Northern California. 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 Northern California 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: 1975
Ending_Date: 2007

Currentness_Reference:
The biological data were compiled during 2007. The currentness dates for the data range from 1975 to 2007 and are documented in the Lineage section.

Status:

Progress: Complete

Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:
West_BoundingCoordinate: -124.45800
East_BoundingCoordinate: -122.75000
North_BoundingCoordinate: 37.97900
South_BoundingCoordinate: 42.00000

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: Nest
Theme_Keyword: Bird
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 Northern California ESI data.  
*Browse Graphic File Type:* JPEG

**Data Set Credit:**

This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Emergency Response Division (formerly Hazardous Materials Response Division), Seattle, Washington and Assessment and Restoration Division, Silver Spring, Maryland; Department of Homeland Security, U.S. Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.; and Department of Fish and Game, Office of Spill Prevention and Response, Sacramento, California.

**Native Data Set Environment:**

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO® (version 9.2) and SQL SERVER® (version 2000). The hardware configuration is PCs 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, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, soc_econ.e00, t_mammal.e00. Associated relational and desktop data tables provided in ARC export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

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**Data Quality Information:**

**Attribute Accuracy:**

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_Conistency_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® to ARC/INFO® consistencies. A final review is made by the GIS manager, where the data are written to CD or DVD, 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 IDs and RARNUMs or HUNUMs are also generated. The new IDs 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 RARNUMs are also modified to include the atlas number, so multiple atlases can be combined and RARNUMs remain unique. RARNUMs are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUMs are also modified to include the atlas number.

**Completeness_Report:**
These data represent a synthesis of expert knowledge, available hardcopy documents, survey data, and digital data on bird nesting and roosting locations. See also the BIRDS (Bird Polygons) data layer, part of the larger Northern California ESI database, for additional bird information. These data do not necessarily represent all nest occurrences in Northern California. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 8, Double-crested cormorant, Phalacrocorax auritus; 9, Brandt's cormorant, Phalacrocorax penicillatus; 10, Pelagic cormorant, Phalacrocorax pelagicus; 37, Western gull, Larus occidentalis; 46, Common murre, Uria aalge; 47, Pigeon guillemot, Cepphus columba; 49, Cassin's auklet, Pteroharumus aleuticus; 50, Rhinoceros auklet, Cerorhinca monocerata; 51, Tufted puffin, Fratercula cirrhata; 68, Black oystercatcher, Haematopus bachmani; 96, Leach's storm-petrel, Oceanodroma leucorhoa; 102, Fork-tailed storm-petrel, Oceanodroma furcata; 118, Brown pelican, Pelecanus occidentalis; 144, Ashy storm-petrel, Oceanodroma homochroa; 626, American peregrine falcon, Falco peregrinus anatum.

**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:**
USFWS, SFB NWR COMPLEX, NEWARK, CA. 40 PP.

Type_of_Source_Media: PAPER
Source_Time_Period_of_Content:
  Time_Period_Information:
    Single_Date/Time:
      Calendar_Date: 2006
  Source_Currentness_Reference: DATE OF PUBLICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: NESTS INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator:
        CARTER, H.R., P.J. CAPITOLO, G.J. MCCHESNEY, W.R. MCIVER, AND J.E. TAKEKAWA
      Publication_Date: 2000
    Title:
      POPULATION MONITORING OF SEABIRDS IN CALIFORNIA:
      COLONY/SUBCOLONY DATABASES FOR 1985-1995 SURVEYS OF BREEDING COLONIES OF COMU, BRCO, DCCO
    Geospatial_Data_Presentation_Form: HARDCOPY TEXT
    Other_Citation_Details:
      UNPUBLISHED FINAL REPORT, USGS WERC, DIXON, CA; HSU, DEPT OF WILDLIFE, ARCATA, CA; USFWS, SFB NWRC, NEWARK, CA. 71 PP.

Type_of_Source_Media: PAPER
Source_Time_Period_of_Content:
  Time_Period_Information:
    Range_of_Dates/Times:
      Beginning_Date: 1985
      Ending_Date: 1995
  Source_Currentness_Reference: DATE OF SURVEY
Source_Citation_Abbreviation: NONE
Source_Contribution: NESTS INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: HARRIS, S.
      Publication_Date: 2006
    Title: NORTHWESTERN CALIFORNIA BIRDS
    Geospatial_Data_Presentation_Form: HARDCOPY TEXT
    Other_Citation_Details: LIVING GOLD PRESS, KLAMATH RIVER, CA

Type_of_Source_Media: PAPER
Source_Time_Period_of_Content:
  Time_Period_Information:
    Single_Date/Time:
      Calendar_Date: 2006
  Source_Currentness_Reference: DATE OF PUBLICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: NESTS INFORMATION
Source_Information:
  Source_Citation:
Range_of_Dates/Times:
  Beginning_Date: 1989
  Ending_Date: 1991
Source_Currentness_Reference: DATE OF SURVEY
Source_Citation_Abbreviation: NONE
Source_Contribution: NESTS INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: NOAA NATIONAL OCEAN SERVICE (NOS) OFFICE OF RESPONSE AND RESTORATION (OR&R) HAZARDOUS MATERIALS RESPONSE DIVISION
    Publication_Date: 2001
    Title: SENSITIVITY OF COASTAL ENVIRONMENTS AND WILDLIFE TO SPILLED OIL: NORTHERN CALIFORNIA
    Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
    Other_Citation_Details: SEATTLE, WASHINGTON
    Source_Scale_Denominator: 24,000
    Type_of_Source_Media: CD-ROM
    Source_Time_Period_of_Content:
      Time_Period_Information:
        Range_of_Dates/Times:
          Beginning_Date: 1994
          Ending_Date: 2001
        Source_Currentness_Reference: DATE OF PUBLICATION
        Source_Citation_Abbreviation: NONE
        Source_Contribution: NESTS INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: ROBERSON, D.
      Publication_Date: 2002
      Title: MONTEREY BIRDS
      Geospatial_Data_Presentation_Form: HARDCOPY TEXT
      Other_Citation_Details: MONTEREY PENINSULA AUDUBON SOCIETY, CARMEL, CA
    Type_of_Source_Media: PAPER
    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: NESTS INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: ROLETTO, J. (NOAA, GFNMS)
      Publication_Date: 2005
      Title:
Three main sources of data were used to depict nest distribution and seasonality for this data layer: 1) personal interviews with resource experts from U.S. Fish and Wildlife Service (USFWS); 2) unpublished seabird colony survey reports; and 3) digital data sets provided by NOAA.

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; and/or 3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer. The compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. If necessary, edits to the NESTS data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.
Process_Date: 200812

Process_Contact:

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_orProvince: 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: 127

Spatial_Reference_Information:
  Horizontal_Coordinate_System_Definition:
    Geographic:
      Latitude_Resolution: 0.0000001
      Longitude_Resolution: 0.0000001
      Geographic_Coordinate_Units: Decimal degrees
    Geodetic_Model:
      Horizontal_Datum_Name: North American Datum of 1927
      Ellipsoid_Name: Clark 1866
      Semi-major_Axis: 6378206.400000
      Denominator_of_Flattening_Ratio: 294.978698

Entity_and_Attribute_Information:
  Overview_Description:
    Entity_and_Attribute_Overview:
      In addition to the geographic data layers, six relational attribute or data tables, BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS, are used to store the complex biological data in the ESI data structure. The geographic data layer containing biological resource information (in this case, NESTS) is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or it can be linked directly using RARNUM. The ID is a unique combination of the atlas number (for the Northern California atlas, the number is 207), an element/layer specific number (BIRDS are layer 1, FISH are layer 2, etc.), and a unique record number. The RARNUM represents a unique combination of species, seasonalities, concentrations, and source information. For each of these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases. BIORES and the other
relational data tables are described below in detail. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way these tables relate to the geographic data layers and other attribute tables in the ESI data structure.

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

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

**Detailed_Description:**

**Entity_Type:**

**Entity_Type_Label:** NESTS.PAT

**Entity_Type_Definition:**

The NESTS.PAT table contains attribute information for the vector points in this data set representing bird nesting and roosting 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 (207), element number (5), and record number.

**Attribute_Definition_Source:** NOAA

**Attribute_Domain_Values:**

**Range_Domain:**

- **Range_Domain_Minimum:** 2070500001
- **Range_Domain_Maximum:** 2070500127
**Attribute**

**Label:** RARNUM  
**Definition:** An identifier that links directly to the BIORES table or the flat format BIOFILE table.  
**Definition Source:** NOAA  
**Domain Values:**  
**Range Domain:**  
  **Minimum:** 207000044  
  **Maximum:** 207000247  

**Detailed Description:**

**Entity Type:**  
**Label:** BIO_LUT  
**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.  
**Definition Source:** Research Planning, Inc.

**Attribute:**

**Label:** RARNUM  
**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.  
**Definition Source:** NOAA  
**Domain Values:**  
**Range Domain:**  
  **Minimum:** 207000001  
  **Maximum:** 207001115  

**Attribute:**

**Label:** ID  
**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 (207), element number (5), and record number. ID values of 9999 are holes in polygons and do not contain information.  
**Definition Source:** NOAA  
**Domain Values:**  
**Range Domain:**  
  **Minimum:** 2070100002  
  **Maximum:** 2072200500  

**Detailed Description:**

**Entity Type:**  
**Label:** BIORES  
**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.  
**Definition Source:** Research Planning, Inc.
**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:** 207000001
  - **Range Domain Maximum:** 207001115

---

**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

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**Attribute Label:** CONC

**Attribute Definition:**
The field CONC refers to "concentration,” abundance, or density values, and may contain counts of individuals for each species present at a particular nesting or wintering site, or a term that describes relative abundance of birds at a particular site. The field may contain counts of individuals (XX INDIV) or counts of nests (XX NESTS). If no concentration information was available from any source, the CONC field is populated with "-". Counts were derived from a variety of surveys, and may range in date (see the Lineage section).

**Attribute Definition Source:** Research Planning, Inc.

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

---

**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 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 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 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 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 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

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

**Attribute:**

**Attribute Label:** NAME

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

**Attribute Definition Source:** Research Planning, Inc.
Attribute \_Label: GEN\_SPEC
Attribute \_Definition: Species scientific name for the entire ESI data set.
Attribute \_Definition \_Source: Research Planning, Inc.
Attribute \_Domain \_Values:
  \textbf{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:
  \textbf{Enumerated Domain:}
    Enumerated \_Domain \_Value: BIRD
    Enumerated \_Domain \_Value \_Definition: Birds
    Enumerated \_Domain \_Value \_Definition \_Source: Research Planning, Inc.
  \textbf{Enumerated Domain:}
    Enumerated \_Domain \_Value: FISH
    Enumerated \_Domain \_Value \_Definition: Fish
    Enumerated \_Domain \_Value \_Definition \_Source: Research Planning, Inc.
  \textbf{Enumerated Domain:}
    Enumerated \_Domain \_Value: HABITAT
    Enumerated \_Domain \_Value \_Definition: Habitats and Plants
    Enumerated \_Domain \_Value \_Definition \_Source: Research Planning, Inc.
  \textbf{Enumerated Domain:}
    Enumerated \_Domain \_Value: INVERT
    Enumerated \_Domain \_Value \_Definition: Invertebrates
    Enumerated \_Domain \_Value \_Definition \_Source: Research Planning, Inc.
  \textbf{Enumerated Domain:}
    Enumerated \_Domain \_Value: M\_MAMMAL
    Enumerated \_Domain \_Value \_Definition: Marine Mammals
    Enumerated \_Domain \_Value \_Definition \_Source: Research Planning, Inc.
  \textbf{Enumerated Domain:}
    Enumerated \_Domain \_Value: REPTILE
    Enumerated \_Domain \_Value \_Definition: Reptiles and Amphibians
    Enumerated \_Domain \_Value \_Definition \_Source: Research Planning, Inc.
  \textbf{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:
  \textbf{Enumerated Domain:}
    Enumerated \_Domain \_Value: alcid
    Enumerated \_Domain \_Value \_Definition: Alcid
Attribute_Domain: Enumerated_Domain
- Enumerated_Domain_Value: amphibian
  Enumerated_Domain_Value_Definition: Amphibian
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain: Enumerated_Domain
- Enumerated_Domain_Value: bivalve
  Enumerated_Domain_Value_Definition: Bivalve
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain: Enumerated_Domain
- Enumerated_Domain_Value: cephalopod
  Enumerated_Domain_Value_Definition: Cephalopod
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain: Enumerated_Domain
- Enumerated_Domain_Value: crab
  Enumerated_Domain_Value_Definition: Crab
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain: Enumerated_Domain
- Enumerated_Domain_Value: diadromous
  Enumerated_Domain_Value_Definition: Diadromous fish
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain: Enumerated_Domain
- Enumerated_Domain_Value: diving
  Enumerated_Domain_Value_Definition: Diving bird
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain: Enumerated_Domain
- Enumerated_Domain_Value: dolphin
  Enumerated_Domain_Value_Definition: Dolphin
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain: Enumerated_Domain
- Enumerated_Domain_Value: echinoderm
  Enumerated_Domain_Value_Definition: Echinoderm
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain: Enumerated_Domain
- Enumerated_Domain_Value: e_nursery
  Enumerated_Domain_Value_Definition: Estuarine nursery fish
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain: Enumerated_Domain
- Enumerated_Domain_Value: e_resident
  Enumerated_Domain_Value_Definition: Estuarine resident
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated Domain:
   Enumerated Domain Value: freshwater
   Enumerated Domain Value Definition: Freshwater fish
   Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
   Enumerated Domain:
      Enumerated Domain Value: gastropod
      Enumerated Domain Value Definition: Gastropod
      Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
   Enumerated Domain:
      Enumerated Domain Value: gull_tern
      Enumerated Domain Value Definition: Gull or tern
      Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
   Enumerated Domain:
      Enumerated Domain Value: insect
      Enumerated Domain Value Definition: Insect
      Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
   Enumerated Domain:
      Enumerated Domain Value: 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: passerine
      Enumerated Domain Value Definition: Passerine bird
      Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
   Enumerated Domain:
      Enumerated Domain Value: pelagic
      Enumerated Domain Value Definition: Pelagic bird
      Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
   Enumerated Domain:
      Enumerated Domain Value: pinniped
      Enumerated Domain Value Definition: Pinniped
      Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
   Enumerated Domain:
      Enumerated Domain Value: plant
Enumerated Domain Value Definition: Plant
Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
- Enumerated Domain:
  - Enumerated Domain Value: raptor
  - Enumerated Domain Value Definition: Raptor
  - Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
- Enumerated Domain:
  - Enumerated Domain Value: sav
  - Enumerated Domain Value Definition: Submerged aquatic vegetation
  - Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
- Enumerated Domain:
  - Enumerated Domain Value: 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: sm_mammal
  - Enumerated Domain Value Definition: Small mammal
  - Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
- Enumerated Domain:
  - Enumerated Domain Value: turtle
  - Enumerated Domain Value Definition: Turtle
  - Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
- Enumerated Domain:
  - Enumerated Domain Value: ungulate
  - Enumerated Domain Value Definition: Ungulate
  - Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
- Enumerated Domain:
  - Enumerated Domain Value: wading
  - Enumerated Domain Value Definition: Wading bird
  - Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
- Enumerated Domain:
  - Enumerated Domain Value: waterfowl
  - Enumerated Domain Value Definition: Waterfowl
  - Enumerated Domain Value Definition Source: Research Planning, Inc.
Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value: whale
    Enumerated Domain Value Definition: Whale
    Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute:
  Attribute Label: NHP
  Attribute Definition: Natural Heritage Program global ranking.
  Attribute Definition Source: Network of Natural Heritage Program

Attribute Domain Values:
  Codeset Domain:
    Codeset Name: NHP Global Conservation Status Rank
    Codeset Source: Natural Heritage Program

Attribute:
  Attribute Label: DATE_PUB
  Attribute Definition: Date of NHP listing.
  Attribute Definition Source: Research Planning, Inc.

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value: YYYYMM
    Enumerated Domain Value Definition: YYYY for year and optionally MM for month
    Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value: 0
    Enumerated Domain Value Definition: Date unspecified
    Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute:
  Attribute Label: EL_SPE
  Attribute Definition:
    Concatenation of ELEMENT and SPECIES_ID. This item links records in the SPECIES data table to records in the BIORES and STATUS data tables.
  Attribute Definition Source: Research Planning, Inc.

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

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

Attribute:
**Attribute Label**: ELEMENT  
**Attribute Definition**: Major categories of biological data.  
**Attribute Definition Source**: Research Planning, Inc.

**Attribute Domain Values**:
- **Enumerated Domain**:
  - **Enumerated Domain Value**: BIRD  
  - **Enumerated Domain Value Definition**: Birds  
  - **Enumerated Domain Value Definition Source**: Research Planning, Inc.
- **Enumerated Domain**:
  - **Enumerated Domain Value**: FISH  
  - **Enumerated Domain Value Definition**: Fish  
  - **Enumerated Domain Value Definition Source**: Research Planning, Inc.
- **Enumerated Domain**:
  - **Enumerated Domain Value**: HABITAT  
  - **Enumerated Domain Value Definition**: Habitats and Plants  
  - **Enumerated Domain Value Definition Source**: Research Planning, Inc.
- **Enumerated Domain**:
  - **Enumerated Domain Value**: INVERT  
  - **Enumerated Domain Value Definition**: Invertebrates  
  - **Enumerated Domain Value Definition Source**: Research Planning, Inc.
- **Enumerated Domain**:
  - **Enumerated Domain Value**: M_MAMMAL  
  - **Enumerated Domain Value Definition**: Marine Mammals  
  - **Enumerated Domain Value Definition Source**: Research Planning, Inc.
- **Enumerated Domain**:
  - **Enumerated Domain Value**: REPTILE  
  - **Enumerated Domain Value Definition**: Reptiles and Amphibians  
  - **Enumerated Domain Value Definition Source**: Research Planning, Inc.
- **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 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
Attribute:

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

Attribute:

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

Detailed_Description:
Entity_Type:

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

Attribute:

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

Attribute:

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

Attribute_Domain_Values:

Range_Domain:
  Range_Domain_Minimum: 1
  Range_Domain_Maximum: 12

Attribute:

Attribute_Label: BREED1

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

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

Attribute_Domain_Values:

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

Attribute_Domain_Values:

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

Attribute:

Attribute_Label: BREED2

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

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

Attribute_Domain_Values:

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

Attribute_Domain_Values:
Enumerated_Domain:

Enumerated_Domain_Value: -

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

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: BREED3

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Y

Enumerated_Domain_Value_Definition: Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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.

Enumerated_Domain_Value:

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

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: BREED4

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Y

Enumerated_Domain_Value_Definition: Life-history stage or activity present

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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.

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

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

Attribute:
  Attribute_Label: SOURCE_ID
  Attribute_Definition:
    Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; and SOURCE_ID in the ESI and HYDRO data layers.
  Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Range_Domain:
    Range_Domain_Minimum: 1
    Range_Domain_Maximum: N

Attribute:
  Attribute_Label: ORIGINATOR
  Attribute_Definition: Author or developer of source material or data set.
**Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

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

**Attribute:**

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

**Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

*Enumerated Domain:*

*Enumerated Domain Value:* YYYYMM

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

*Enumerated Domain Value Definition Source:* Research Planning, Inc.

**Attribute:**

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

**Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

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

**Attribute:**

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

**Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

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

**Attribute:**

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

**Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

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

**Attribute:**

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

**Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

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

**Attribute:**

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

**Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

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

**Detailed Description:**

**Entity Type:**

**Entity Type Label:** STATUS

**Entity Type Definition:**

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

Entity_Type_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: ELEMENT
Attribute_Definition: Major categories of biological data.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:
    Enumerated_Domain_Value: BIRD
    Enumerated_Domain_Value_Definition: Birds
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

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

Attribute_Domain_Values:

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

Attribute_Domain_Values:

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

Attribute_Domain_Values:

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

Attribute_Domain_Values:

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

Attribute_Domain_Values:

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

Attribute:

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

Range_Domain:
    Range_Domain_Minimum: 1
    Range_Domain_Maximum: N
Attribute:
  Attribute_Label: STATE
  Attribute_Definition: Two-letter state abbreviation.
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Unrepresentable_Domain: Acceptable values change from atlas to atlas.

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

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

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

Attribute:
  Attribute_Label: I
Attribute Definition: International threatened or endangered status.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: E
  Enumerated Domain Value Definition: Endangered on international list
  Enumerated Domain Value Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: T
  Enumerated Domain Value Definition: Threatened on international list
  Enumerated Domain Value Definition Source: NOAA ESI Guidelines
Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: C
  Enumerated Domain Value Definition: Species of Special Concern
  Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute:
Attribute Label: S_DATE
Attribute Definition:
  Publication date of source material used to assign state status values for each species, if used.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: YYYYMM
  Enumerated Domain Value Definition: YYYY for year and optionally MM for month
  Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute:
Attribute Label: F_DATE
Attribute Definition:
  Publication date of source material used to assign federal status values for each species, if used.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: YYYYMM
  Enumerated Domain Value Definition: YYYY for year and optionally MM for month
  Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute:
Attribute Label: I_DATE
Attribute Definition:
  Publication date of source material used to assign international status values for each species, if used.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
Enumerated Domain:
  Enumerated Domain Value: YYYYMM
  Enumerated Domain Value Definition: YYYY for year and optionally MM for month
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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

Distribution_Information:
Distributor:
Contact_Information:
Contact_Person_Primary:
  Contact_Person: John Kaperick
  Contact_Organization: NOAA, Office of Response and Restoration
Contact_Address:
  Address_Type: Physical Address
  Address: 7600 Sand Point Way N.E.
  City: Seattle
  State_or_Province: Washington
  Postal_Code: 98115-6349
  Contact_Voice_Telephone: (206) 526-6400
  Contact_Facsimile_Telephone: (206) 526-6329
Resource_Description: ESI Atlas for Northern California
Distribution_Liability:
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration (NOAA), 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 the widest community of GIS/mapping users. Distribution formats include Access Personal Geodatabase, ARC export files, Shape files, and MARPLOT map folders. An ArcMap .mxd file, an ArcView 3.x ESI project, and an ESI_Viewer product for use with the MARPLOT data are also included on the distribution CDs/DVDs 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: 200902
Metadata_Review_Date: 200902

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
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: FISH (Fish Polygons)

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

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:
Publication Date: 200812
Title:
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: FISH (Fish Polygons)
Edition: Second
Geospatial Data Presentation Form: Vector digital data
Series Information:
Series Name: None
Issue Identification: Northern California
Publication Information:
Publication Place: Seattle, Washington
Publisher:
Other Citation Details:
Description:

Abstract:
This data set contains sensitive biological resource data for marine, estuarine, anadromous, and freshwater fish species in Northern California. Vector polygons in this data set represent fish distribution, concentration areas, nursery areas, and salmon/trout spawning runs. Species specific abundance, seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer.

This data set comprises a portion of the Environmental Sensitivity Index (ESI) data for Northern California. 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 Northern California 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: 1972
Ending_Date: 2007

Currentness_Reference:
The biological data were compiled during 2007. The currentness dates for this data range from 1972 to 2007 and are documented in the Lineage section.

Status:
Progress: Complete
Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:
West_Bounding_Coordinate: -124.45800
East_Bounding_Coordinate: -122.75000
North_Bounding_Coordinate: 37.97900
South_Bounding_Coordinate: 42.00000

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
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.

Depicts the relationships between spatial data layers and attribute data tables for the Northern California ESI data.

This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Emergency Response Division (formerly Hazardous Materials Response Division), Seattle, Washington and Assessment and Restoration Division, Silver Spring, Maryland; Department of Homeland Security, U.S. Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.; and Department of Fish and Game, Office of Spill Prevention and Response, Sacramento, California.

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO® (version 9.2) and SQL SERVER® (version 2000). The hardware configuration is PCs 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, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, socecon.e00, t_mammal.e00. Associated relational and desktop data tables provided in Arc export and text format are bio_lut, biofile, biores, breed, breed_dt, seasonal, soc_dat, soc_lut, sources, species, and status.

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® to ARC/INFO® consistencies. A final review is made by the GIS manager, where the data are written to CD or DVD, 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 IDs and RARNUMs or HUNUMs are also generated. The new IDs 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 RARNUMs are also modified to include the atlas number, so multiple atlases can be combined and RARNUMs remain unique. RARNUMs are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUMs are also modified to include the atlas number.

**Completeness_Report:**
These data represent a synthesis of expert knowledge, digital data, and hardcopy documents. See also the FISHL (Fish Lines) data layer, part of the larger Northern California ESI database, for additional fish information. These data do not necessarily represent all fish occurrences in Northern California. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 2, Lingcod, Ophiodon elongatus; 3, Pacific sanddab, Citharichthys sordidus; 7, Pacific halibut, Hippoglossus stenolepis; 11, English sole, Parophrys vetulus; 12, Starry flounder, Platichthys stellatus; 15, Sand sole, Psettichthys melanisticus; 18, Plainfin midshipman, Porichthys notatus; 21, Pacific tomcod, Microgadus proximus; 26, Copper rockfish, Sebastes caurinus; 28, Yellowtail rockfish, Sebastes flavidus; 29, Black rockfish, Sebastes melanops; 30, Bocaccio, Sebastes paucispinis; 32, Canary rockfish (orange), Sebastes pinniger; 33, Chilipepper, Sebastes goodei; 38, Brown rockfish, Sebastes auriculatus; 40, Big skate, Raja binoculata; 41, Longnose skate, Raja rhina; 43, White sturgeon, Acipenser transmontanus; 44, Green sturgeon, Acipenser medirostris; 45, Coastal cutthroat trout, Oncorhynchus clarkii clarkii; 46, Kelp greenling, Hexagrammos decagrammuns; 47, Rock greenling, Hexagrammos lagocephalus; 49, Buffalo sculpin, Enophrhis bison; 51, Pacific staghorn sculpin, Leptocephalus armatus; 52, Tidepool sculpin, Oligocottus maculosus; 53, Cabezon, Scorpaenichthys marmoratus; 54, Redtail surfperch, Amphistichus rhodoterus; 56, Shiner surfperch, Cymatogaster aggregata; 57, Striped surfperch, Embiotoca lateralis; 58, Walleye surfperch, Hyperprosopon argenteum; 59, Pike surfperch, Rhacoehilus voncula; 60, White seaperch, Phanerodon furcatu; 61, Penpoint gunnel, Apodichthys flavidus; 62, Saddleback gunnel, Pholis ornata; 64, Quartzback rockfish, Sebastes maliger; 66, Pacific herring, Clupea pallasii pallasii; 67, Northern anchovy, Engraulis mordax; 68, Chinook salmon, Oncorhynchus tshawytscha; 69, Coho salmon, Oncorhynchus kisutch; 72, Chum salmon, Oncorhynchus keta; 74, Steelhead, Oncorhynchus mykiss; 75, Surf smelt, Hypomesus americanus; 77, Eulachon, Thaleichthys pacificus; 79, White seabass, Atractoscion nobilis; 80, Pacific sand lance, Ammodytes hexapterus; 81, Spiny dogfish, Squalus acanthias; 83, Salmon, n/a; 87, American shad, Alosa sapidissima; 91, Threespine stickleback, Gasterosteus aculeatus; 104, Striped bass, Morone saxatilis; 106, California grunion, Leuresthes tenuis; 152, Longfin smelt, Spinichthys thaleichthys; 177, Leopard shark, Triakis semifasciata; 179, Largemouth bass, Micropterus salmoides; 192, Topsmelt, Atherinops affinis; 193, Jacksmelt, Atherinopsis californiensis; 195, Silver surfperch, Hyperprosopon ellipticum; 196, Blue rockfish, Sebastes mystinus; 197, Grass rockfish, Sebastes rastrelliger; 219, Pacific lamprey, Lampetra tridentata; 223, Rockfish, Sebastes spp.; 230, Surflinck, n/a; 225, California halibut, Paralichthys californicus; 226, Tidewater goby, Eucyclogobius
newberryi; 227, Prickly sculpin, Cottus asper; 228, Night smelt, Spirinchus starksi; 473, Bat ray, Myliobatis californica; 494, White croaker, Genyonemus lineatus; 567, Sculpin, Cottidae; 894, Barred surfperch, Amphistichus argenteus; 895, Rainbow seaperch, Hypsurus caryi; 899, Rubberlip surfperch, Rhacochilus toxotes; 992, Sixgill shark, Hexanchus griseus; 1014, Speckled sanddab, Citharichthys stigmaeus; 1029, Gobies, n/a; 1072, Vermilion rockfish, Sebastes miniatus; 1075, Black-and-yellow rockfish, Sebastes chrysomelas; 1077, China rockfish, Sebastes nebulosus; 1078, Gopher rockfish, Sebastes carnatus; 1083, Calico surfperch, Amphistichus koelzi; 1084, Monkeyface prickleback, Cebidichthys violaceus; 1086, Pacific sardine, Sardinops sagax; 1087, White shark, Carcharodon carcharias; 1110, Arrow goby, Clevelandia ios; 1111, Sandpaper skate, Bathyraja interrupta; 1112, California skate, Raja inornata; 1113, Bay pipefish, Syngnathus leporhynchus; 1115, Bay goby, Lepidogobius lepidus; 1116, Sevengill shark, Notorynchus cepedianus; 1119, Gray smoothhound, Mustelus californicus; 1120, Brown smoothhound, Mustelus henlei; 1121, California roach, Hesperoleucus symmetricus; 1122, Coastrange sculpin, Cottus aleuticus; 1123, Silverspotted sculpin, Blepsias cirrhosus; 1124, Jack mackerel, Trachurus symmetricus; 1125, Ringtail snailfish, Liparis rutteri.

**Positional Accuracy:**

**Horizontal Positional Accuracy:**

Spatial components for the biological data layers can come from expert interviews, hardcopy, or digital sources. Some of the spatial components of the biological data layers may have been developed using regional experts who estimate concentration areas. It is difficult to estimate the positional accuracy of such data, except to state that they are compiled on hardcopy base maps with a scale of 1:24,000. 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:* ALLEN, S. (NATIONAL PARK SERVICE, POINT REYES)

**Publication Date:** 2005

**Title:** DISTRIBUTION AND SEASONALITY OF SPECIES AND SOC_ECON FEATURES ON NPS LANDS

**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:** 2005

**Source Currentness Reference:** DATE OF COMMUNICATION

**Source Citation Abbreviation:** NONE

**Source Contribution:** FISH INFORMATION

**Source Information:**

**Source Citation:**
Originator: ASHTON, D.
Publication_Date: 2007
Title: SALMONID DISTRIBUTION AND SEASONALITY IN NORTHERN CALIFORNIA
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: 2007
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: FISH INFORMATION
Source_Information:
Source_Citation:
  Citation_Information:
    Originator: BARNHART, R.A., M.J. BOYD, AND J.E. PEQUEGNAT
    Publication_Date: 1992
    Title: THE ECOLOGY OF HUMBOLDT BAY, CALIFORNIA: AN ESTUARINE PROFILE
    Geospatial_Data_Presentation_Form: HARDCOPY TEXT
    Other_Citation_Details:
      U.S. DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE, BIOLOGICAL REPORT 1, WASHINGTON D.C.
Type_of_Source_Media: PAPER
Source_Time_Period_of_Content:
  Time_Period_Information:
    Single_Date/Time:
      Calendar_Date: 1992
Source_Currentness_Reference: DATE OF PUBLICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: FISH INFORMATION
Source_Information:
Source_Citation:
  Citation_Information:
    Originator: BUSBY, M.S., R.A. BARNHART, P.P. PETROS
    Publication_Date: 1988
    Title: NATURAL RESOURCES OF THE MATTOLE RIVER ESTUARY, CALIFORNIA: NATURAL RESOURCES AND HABITAT INVENTORY SUMMARY REPORT
    Geospatial_Data_Presentation_Form: HARDCOPY TEXT
    Other_Citation_Details:
      BLM AGREEMENT NUMBER CA-950-CA6-018, CA COOPERATIVE FISHERY RESEARCH UNIT, HSU
Type_of_Source_Media: ONLINE
Source_Time_Period_of_Content:
  Time_Period_Information:
    Single_Date/Time:
      Calendar_Date: 1988
Source_Currentness_Reference: DATE OF PUBLICATION
Source Citation Abbreviation: NONE
Source Contribution: FISH INFORMATION
Source Information:
Source Citation:
Citation Information:
Originator:
BUSBY, WAINWRIGHT, BRYANT, LIERHEIMER, WAPLES, WAKNITZ, AND LAGOMARSINO
Publication Date: 1996
Title:
STATUS REVIEW OF WEST COAST STEELHEAD FROM WASHINGTON, IDAHO, OREGON, AND CALIFORNIA
Geospatial Data Presentation Form: HARDCOPY TEXT
Other Citation Details: U.S. DEP. COMMER., NOAA TECH. MEMO. NMFS-NWFS-27, 261 P.
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: FISH INFORMATION
Source Information:
Source Citation:
Citation Information:
Originator: CANNATA, S.
Publication Date: 2007
Title:
DISTRIBUTION OF FISH AND INVERTS IN RIVERS AND ESTUARIES IN NORTHERN CALIFORNIA
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: 2007
Source Currentness Reference: DATE OF COMMUNICATION
Source Citation Abbreviation: NONE
Source Contribution: FISH INFORMATION
Source Information:
Source Citation:
Citation Information:
Originator: CANNATA, S.
Publication Date: 1998
Title:
OBSERVATIONS OF STEELHEAD TROUT COHO SALMON AND WATER QUALITY OF THE NAVARRO RIVER ESTUARY/LAGOON MAY 1996 TO DEC. 1997
Geospatial Data Presentation Form: HARDCOPY TEXT
Other Citation Details: UNPUBLISHED
Type of Source Media: EMAIL
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: FISH INFORMATION
Source Information:
Source Citation:
  Citation Information:
    Originator: CALIFORNIA DEPT. OF FISH & GAME (CDF&G)
    Publication Date: 2007
    Title: KEY SPAWNING AREAS FOR PACIFIC HERRING
    Geospatial Data Presentation Form: VECTOR DIGITAL DATA
    Other Citation Details: UNPUBLISHED
Type of Source Media: EMAIL
Source Time Period of Content:
  Time Period Information:
    Range_of Dates/Times:
      Beginning_Date: 2001
      Ending_Date: 2007
Source Currentness Reference: DATE OF SURVEY
Source Citation Abbreviation: NONE
Source Contribution: FISH INFORMATION
Source Information:
Source Citation:
  Citation Information:
    Originator: CALIFORNIA DEPT. OF FISH & GAME (CDF&G)
    Publication Date: 2001
    Title: CALIFORNIA'S LIVING MARINE RESOURCES: A STATUS REPORT - COASTAL CUTTHROAT TROUT
    Geospatial Data Presentation Form: HARDCOPY TEXT
    Other Citation Details: CDF&G
Type of Source Media: ONLINE
Source Time Period of Content:
  Time Period Information:
    Single Date/Time:
      Calendar Date: 2001
Source Currentness Reference: DATE OF PUBLICATION
Source Citation Abbreviation: NONE
Source Contribution: FISH INFORMATION
Source Information:
Source Citation:
  Citation Information:
    Originator: CALIFORNIA DEPT. OF FISH & GAME (CDF&G)
    Publication Date: 2004
    Title: RECOVERY STRATEGY FOR CALIFORNIA COHO SALMON
    Geospatial Data Presentation Form: HARDCOPY TEXT
    Other Citation Details: REPORT TO THE CALIFORNIA FISH AND GAME COMMISSION, 594 PP.
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: FISH INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: CALIFORNIA DEPT. OF FISH & GAME (CDF&G)
      Publication_Date: 2001
      Title:
        CALIFORNIA'S MARINE LIVING RESOURCES: A STATUS REPORT - SANDDABS
      Geospatial_Data_Presentation_Form: HARDCOPY TEXT
      Other_Citation_Details: CDF&G
Type_of_Source_Media: ONLINE
Source_Time_Period_of_Content:
  Time_Period_Information:
    Single_Date/Time:
      Calendar_Date: 2001
Source_Currentness_Reference: DATE OF PUBLICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: FISH INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: CALIFORNIA DEPT. OF FISH & GAME (CDF&G) BIOGEOGRAPHIC DATA BRANCH
      Publication_Date: 2007
      Title: CALIFORNIA NATURAL DIVERSITY DATABASE
      Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
      Other_Citation_Details:
        <http://www.dfg.ca.gov/biogeodata/> (Contact the site webmaster if this URL is no longer active.)
Source_Scale_Denominator: VARIES
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:
  Time_Period_Information:
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Source_Currentness_Reference: DATE OF PUBLICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: FISH INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: CDF&G MARINE REGION
      Publication_Date: 2007
CALIFORNIA DEPT. OF FISH & GAME (CDF&G), U.S. COAST GUARD (USCG)
Publication_Date: 2005
Title:
SAN FRANCISCO GEOGRAPHIC RESPONSE AREA 1 SONOMA AND NORTH MARIN COAST
Geospatial_Data_Presentation_Form: HARDCOPY TEXT
Other_Citation_Details: ACP 2 SF BAY & DELTA - GRA 1
Type_of_Source_Media: DISC
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: FISH INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: COX, B. (CDF&G)
Publication_Date: 2007
Title:
FISH, INVERTS, AND HABITATS IN SONOMA/MARIN COUNTY STREAMS AND ESTUARIES
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: 2007
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: FISH INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: DAYTON, J. (CDF&G)
Publication_Date: 2007
Title: FISH, WILDLIFE, AND HABITAT DISTRIBUTION IN NORTHERN CALIFORNIA
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: 2007
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: FISH INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
  Originator: DILLON, J. (NMFS)
  Publication_Date: 2007
  Title: MARINE FISH DISTRIBUTION
  Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
  Other_Citation_Details: UNPUBLISHED
Type_of_Source_Media: PERSONAL COMMUNICATION
Source_Time_Period_of_Content:
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      Calendar_Date: 2007
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Source_Citation_Abbreviation: NONE
Source_Contribution: FISH INFORMATION
Source_Information:
Source_Citation:
Source_Information:
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Citation_Information:
  Originator: FREY, V. (CDF&G, EUREKA)
  Publication_Date: 2007
  Title: MARINE RESOURCE DISTRIBUTION AND SEASONALITY IN NORTHERN CALIFORNIA
  Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
  Other_Citation_Details: UNPUBLISHED
Type_of_Source_Media: PERSONAL COMMUNICATION
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      Calendar_Date: 2007
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Source_Citation_Abbreviation: NONE
Source_Contribution: FISH INFORMATION
Source_Information:
Source_Citation:
Source_Information:
Source_Citation:
Citation_Information:
  Originator: HARRIS, JAY (CSP, EUREKA)
  Publication_Date: 2007
  Title: CALIFORNIA STATE PARK RESOURCES
  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: 2007
  Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: FISH INFORMATION
Source_Information:
Source_Citation:
Source_Information:
Citation Information:

Originator: MONTEREY BAY NATIONAL MARINE SANCTUARY (MBNMS), CDF&G OFFICE OF SPILL PREVENTION AND RESPONSE (OSPR), MONTEREY BAY SANCTUARY FOUNDATION (MBSF)
Publication Date: 2006
Title: SENSITIVITY OF COASTAL ENVIRONMENTS TO SPILLED OIL: CENTRAL CALIFORNIA ATLAS
Geospatial Data Presentation Form: VECTOR DIGITAL DATA
Other Citation Details: NOAA OR&R HAZMAT, SEATTLE, WASHINGTON
Source Scale Denominator: VARIES
Type of Source Media: CD-ROM
Source Time Period of Content: Time Period Information:
  Single Date/Time: Calendar Date: 2006
Source Currentness Reference: DATE OF PUBLICATION
Source Citation Abbreviation: NONE
Source Contribution: FISH INFORMATION
Source Information:

Citation Information:
  Originator: MELLO, J. (CDF&G, EUREKA)
  Publication Date: 2007
  Title: MARINE RESOURCE DISTRIBUTION AND SEASONALITY IN NORTHERN CALIFORNIA
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: 2007
Source Currentness Reference: DATE OF COMMUNICATION
Source Citation Abbreviation: NONE
Source Contribution: FISH INFORMATION
Source Information:

Citation Information:
  Originator: MILLER, D.J. AND R.N. LEA
  Publication Date: 1972
  Title: GUIDE TO THE COASTAL MARINE FISHES OF CALIFORNIA FISH BULLETIN NO. 157
Geospatial Data Presentation Form: HARDCOPY TEXT
Other Citation Details: CALIFORNIA DEPARTMENT OF FISH AND GAME, SACRAMENTO, 1972
Type of Source Media: PAPER
Source Time Period of Content: Time Period Information:
Single_Date/Time:
    Calendar_Date: 1972
Source_Currentness_Reference: DATE OF PUBLICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: FISH INFORMATION
Source_Information:
Source_Citation:
    Citation_Information:
        Originator: MONACO, M.E., R.L. EMMETT, D.M. NELSON, AND S.A. HINTON
        Publication_Date: 1990
        Title: DISTRIBUTION AND ABUNDANCE OF FISHES AND INVERTEBRATES IN WEST COAST ESTUARIES, VOLUME I. DATA SUMMARIES.
        Geospatial_Data_Presentation_Form: HARDCOPY TEXT
        Other_Citation_Details: ELMR REP. NO. 4. NOAA/NOS STRATEGIC ENVIRONMENTAL ASSESSMENTS DIVISION, SILVER SPRING, MD 232 P.
        Type_of_Source_Media: PAPER
        Source_Time_Period_of_Content:
            Single_Date/Time:
                Calendar_Date: 1990
            Source_Currentness_Reference: DATE OF PUBLICATION
        Source_Citation_Abbreviation: NONE
        Source_Contribution: FISH INFORMATION
        Source_Information:
Source_Citation:
    Citation_Information:
        Originator: MYERS, KOPE, BRYANT, TEEL, LIERHEIMER, WAINWRIGHT, GRANT, WAKNITZ, NEELY, LINDLEY, AND WAPLES
        Publication_Date: 1998
        Title: STATUS REVIEW OF CHINOOK SALMON FROM WASHINGTON, IDAHO, OREGON, AND CALIFORNIA
        Geospatial_Data_Presentation_Form: HARDCOPY TEXT
        Other_Citation_Details: U.S. DEPT. COMMERCE, NOAA TECH. MEMO. NMFS-NWFSC-35, 443 P.
        Type_of_Source_Media: PAPER
        Source_Time_Period_of_Content:
            Single_Date/Time:
                Calendar_Date: 1998
            Source_Currentness_Reference: DATE OF PUBLICATION
        Source_Citation_Abbreviation: NONE
        Source_Contribution: FISH INFORMATION
        Source_Information:
Source_Citation:
    Citation_Information:
        Originator: NMFS (NOAA FISHERIES)
Publication_Date: 2005
Title: DISTRIBUTION AND SEASONALITY OF FISH AND INVERTEBRATES AND SOC_ECON FEATURES
Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
Other_Citation_Details: UNPUBLISHED
Type_of_Source_Media: PERSONAL COMMUNICATION
Source_Time_Period_of_Content:
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Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: FISH INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: ROBERTS, E. (CDF&G, EUREKA)
Publication_Date: 2007
Title: MARINE RESOURCE DISTRIBUTION AND SEASONALITY
Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
Other_Citation_Details: UNPUBLISHED
Type_of_Source_Media: PERSONAL COMMUNICATION
Source_Time_Period_of_Content:
  Time_Period_Information:
    Single_Date/Time:
      Calendar_Date: 2007
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: FISH INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: SPENCE, B.C., G.A. LOMNICKY, R.M. HUGHES, AND R.P. NOVITZKI
Publication_Date: 1996
Title: AN ECOSYSTEM APPROACH TO SALMONID CONSERVATION
Geospatial_Data_Presentation_Form: HARDCOPY TEXT
Other_Citation_Details:
  TR-4501-96-6057. MANTECH ENVIRONMENTAL RESEARCH SERVICES CORP. CORVALLIS, OR
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: FISH INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
Single_Date/Time:
    Calendar_Date: 2005
Source_Currentness_Reference: DATE OF PUBLICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: FISH INFORMATION
Source_Information:
Source_Citation:
    Citation_Information:
        Originator: USCG SECTOR SAN FRANCISCO
        Publication_Date: 2005
        Title: 2005 SECTOR SAN FRANCISCO AREA ACP 1 NORTH COAST;
            VOLUME 2: MENDOCINO COUNTY SECTION 9814
        Geospatial_Data_Presentation_Form: HARDCOPY TEXT
        Other_Citation_Details: USCG SECTOR SAN FRANCISCO, OCTOBER 1, 2005
        Source_Scale_Denominator: VARIES
        Type_of_Source_Media: ONLINE
        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: FISH INFORMATION
Source_Information:
Source_Citation:
    Citation_Information:
        Originator: USFWS (ARCATA)
        Publication_Date: 2007
        Title: TIDEWATER GOBY LOCATIONS
        Geospatial_Data_Presentation_Form: SPREADSHEET
        Other_Citation_Details: UNPUBLISHED
        Type_of_Source_Media: EMAIL
        Source_Time_Period_of_Content:
            Time_Period_Information:
                Single_Date/Time:
                    Calendar_Date: 2007
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: FISH INFORMATION
Source_Information:
Source_Citation:
    Citation_Information:
        Originator: WEITKAMP, WAINWRIGHT, BRYANT, MILNER, TEEL,
            KOPE, WAPLES
        Publication_Date: 1995
        Title: STATUS REVIEW OF COHO SALMON FROM WASHINGTON,
            OREGON, AND CALIFORNIA
        Geospatial_Data_Presentation_Form: HARDCOPY TEXT
        Other_Citation_Details: U.S. DEPT. COMMERCE, NOAA TECH. MEMO.
Three main sources of data were used to depict fish distribution and seasonality for this data layer: 1) personal interviews with resource experts from the California Department of Fish & Game (CDF&G), NOAA National Marine Fisheries Service (NMFS), National Park Service (NPS), and California State Parks (CSP); 2) published and unpublished documents and maps; and 3) digital data provided by NMFS displaying distribution of steelhead and chinook salmon in rivers and streams, CDF&G digital data displaying coastal cutthroat trout, and USFWS tabular data for tidewater goby locations.

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; and/or 3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer. The compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. If necessary, edits to the FISH data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.

Process_Date: 200812

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: 6955

SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: Area point
Point_and_Vector_Object_Count: 6954

SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: Complete chain
Point_and_Vector_Object_Count: 7759

SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 294542

SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 7528

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

Geodetic_Model:
Horizontal_Datum_Name: North American Datum of 1927
Ellipsoid_Name: Clark 1866
Semi-major_Axis: 6378206.400000
Denominator_of_Flattening_Ratio: 294.978698

Entity_and_Attribute_Information:
Overview_Description:
Entity_and_Attribute_Overview:
In addition to the geographic data layers, six relational attribute or data tables, BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS, are used to store the complex biological data in the ESI data structure. The geographic data layer containing biological resource information (in this case, FISH) is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or it can be linked directly using RARNUM. The ID is a unique combination of the atlas number (for the Northern California atlas, the number is 207), 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, seasonalties, concentrations, and source information. For each of these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases. BIORES and the other relational data tables are described below in detail. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way these tables relate to the geographic data layers and other attribute tables in the ESI data structure.

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

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

Detailed_Description:

Entity_Type:

Entity_Type_Label: FISH.PAT

Entity_Type_Definition:
The FISH.PAT table contains attribute information for the vector polygons in this data set representing fish distribution, concentration areas, nursery areas, and salmon/trout spawning runs. Note that all attribute information is stored in a series of relational files, described below. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the relationships between attribute tables in the ESI data structure.

Entity_Type_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: ID

Attribute_Definition:
An identifier that links vector objects in the biology data layers to records in the BIO_LUT data table. ID is a concatenation of atlas number (207), 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: 2070200002
Range_Domain_Maximum: 2070206975

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: 207000507
    Range_Domain_Maximum: 207000717

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. 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: 207000001
      Range_Domain_Maximum: 207001115

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 (207), 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: 2070100002
      Range_Domain_Maximum: 2072200500

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**

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

**Attribute Definition Source**: Research Planning, Inc.

**Attribute Domain Values**:

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

**Attribute**

Attribute **Label**: CONC
**Attribute Definition:**
The field CONC refers to "concentration," abundance, or density values of a species at a particular location. No quantitative data were available for fish, so the concentration field may contain a descriptive term such as "HIGH" or "VERY HIGH". If no concentration information was available from any source, 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: 
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.
Enumerated_Domain:
    Enumerated_Domain_Value: FISH
    Enumerated_Domain_Value_Definition: Fish
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
    Enumerated_Domain_Value: HABITAT
    Enumerated_Domain_Value_Definition: Habitats and Plants
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
    Enumerated_Domain_Value: INVERT
    Enumerated_Domain_Value_Definition: Invertebrates
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
    Enumerated_Domain_Value: M_MAMMAL
    Enumerated_Domain_Value_Definition: Marine Mammals
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
    Enumerated_Domain_Value: REPTILE
    Enumerated_Domain_Value_Definition: Reptiles and Amphibians
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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: amphibian
  Enumerated_Domain_Value_Definition: Amphibian
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: bivalve
    Enumerated_Domain_Value_Definition: Bivalve
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Enumerated_Domain:
    Enumerated_Domain_Value: cephalopod
    Enumerated_Domain_Value_Definition: Cephalopod
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Enumerated_Domain:
    Enumerated_Domain_Value: crab
    Enumerated_Domain_Value_Definition: Crab
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Enumerated_Domain:
    Enumerated_Domain_Value: diadromous
    Enumerated_Domain_Value_Definition: Diadromous fish
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Enumerated_Domain:
    Enumerated_Domain_Value: diving
    Enumerated_Domain_Value_Definition: Diving bird
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Enumerated_Domain:
    Enumerated_Domain_Value: dolphin
    Enumerated_Domain_Value_Definition: Dolphin
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Enumerated_Domain:
    Enumerated_Domain_Value: echinoderm
    Enumerated_Domain_Value_Definition: Echinoderm
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Enumerated_Domain:
    Enumerated_Domain_Value: e_nursery
    Enumerated_Domain_Value_Definition: Estuarine nursery fish
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Enumerated_Domain:
    Enumerated_Domain_Value: e_resident
    Enumerated_Domain_Value_Definition: Estuarine resident
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Enumerated_Domain:
    Enumerated_Domain_Value: freshwater
    Enumerated_Domain_Value_Definition: Freshwater fish
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
  Enumerated_Domain_Value: gastropod
  Enumerated_Domain_Value_Definition: Gastropod
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: gull_tern
    Enumerated_Domain_Value_Definition: Gull or tern
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: insect
    Enumerated_Domain_Value_Definition: Insect
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: 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: passerine
    Enumerated_Domain_Value_Definition: Passerine bird
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: pelagic
    Enumerated_Domain_Value_Definition: Pelagic bird
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: pinniped
    Enumerated_Domain_Value_Definition: Pinniped
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: plant
    Enumerated_Domain_Value_Definition: Plant
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: raptor
Enumerated_Domain_Value_Definition: Raptor
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: sav
Enumerated_Domain_Value_Name: Submerged aquatic vegetation
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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_Name: Sea otter
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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_Name: Shorebird
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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_Name: Shrimps
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Enumerated_Domain_Value_Definition: Shrimps
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: sm mammal
Enumerated_Domain_Value_Name: Small mammal
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Enumerated_Domain_Value_Definition: Small mammal
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: turtle
Enumerated_Domain_Value_Name: Turtle
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Enumerated_Domain_Value_Definition: Turtle
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: ungulate
Enumerated_Domain_Value_Name: Ungulate
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Enumerated_Domain_Value_Definition: Ungulate
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: wading
Enumerated_Domain_Value_Name: Wading bird
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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_Name: Waterfowl
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Enumerated_Domain_Value_Definition: Waterfowl
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: whale
Enumerated_Domain_Value_Name: Whale
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Enumerated_Domain_Value_Definition: Whale
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute:
  Attribute_Label: NHP
  Attribute_Definition: Natural Heritage Program global ranking.
  Attribute_Definition_Source: Network of Natural Heritage Program
  Attribute_Domain_Values:
    Codeset_Domain:
      Codeset_Name: NHP Global Conservation Status Rank
      Codeset_Source: Natural Heritage Program

Attribute:
  Attribute_Label: DATE_PUB
  Attribute_Definition: Date of NHP listing.
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: YYYYMM
      Enumerated_Domain_Value_Definition: YYYY for year and optionally MM for month
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: 0
      Enumerated_Domain_Value_Definition: Date unspecified
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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

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

Attribute:
  Attribute_Label: ELEMENT
  Attribute_Definition: Major categories of biological data.
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:

Enumerated_Domain_Value: BIRD
Enumerated_Domain_Value_Definition: Birds
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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

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

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

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

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

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

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

Attribute_Domain_Values:
  Range_Domain:
    Range_Domain_Minimum: 1
    Range_Domain_Maximum: N

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

Attribute_Domain_Values:
  Range_Domain:
    Range_Domain_Minimum: 1
Range_Domain_Maximum: N

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

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

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

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

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

Attribute:
Attribute_Label: JUN
Attribute_Definition: June
Attribute_Definition_Source: Research Planning, Inc.
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.
- **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.
- **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.
- **Range Domain:**
  - **Range Domain Minimum:** 1
  - **Range Domain Maximum:** 12
Attribute:
Attribute_Label: BREED1
Attribute_Definition:
Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED1 = nesting; if ELEMENT is "FISH" then BREED1 = spawning; if ELEMENT is "INVERT" then BREED1 = spawning; if ELEMENT is "REPTILE" then BREED1 = nesting; if ELEMENT is "M_MAMMAL" then BREED1 = mating. This attribute is not used for HABITAT or T_MAMMAL elements.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Y
Enumerated_Domain_Value_Definition: Life-history stage or activity present
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: N
Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: -
Enumerated_Domain_Value_Definition: Breed category not used or not appropriate for record(s) in question
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
Attribute_Label: BREED2
Attribute_Definition:
Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED2 = migrating; if ELEMENT is "FISH" then BREED2 = eggs; if ELEMENT is "INVERT" then BREED2 = eggs; if ELEMENT is "REPTILE" then BREED2 = hatching; if ELEMENT is "M_MAMMAL" then BREED2 = calving. This attribute is not used for HABITAT or T_MAMMAL elements.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Y
Enumerated_Domain_Value_Definition: Life-history stage or activity present
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: N
Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: -
Enumerated_Domain_Value_Definition: Breed category not used or not appropriate for record(s) in question
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute: **BREED3**

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

**Attribute_Definition_Source:** Research Planning, Inc.

**Attribute_Domain_Values:**

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

- **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: **BREED4**

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

**Attribute_Definition_Source:** Research Planning, Inc.

**Attribute_Domain_Values:**

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

- **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.

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

Detailed_Description:

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

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

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

Attribute:
  Attribute_Label: DATE_PUB
Attribute Definition:
Date of source material, publication, or date of personal communication with expert source.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
Enumerated Domain:
    Enumerated Domain Value: YYYYMM
    Enumerated Domain Value Definition: YYYY for year and optionally MM for month
    Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute:
Attribute Label: TITLE
Attribute Definition: Title of source material or data.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
    Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute Label: DATA_FORMAT
Attribute Definition: The format of the source material.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
    Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute Label: PUBLICATION
Attribute Definition: Additional citation information.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
    Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute Label: SCALE
Attribute Definition: Description of the source scale.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
    Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute Label: TIME_PERIOD
Attribute Definition: Date(s) of data collection that the source material is based upon.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
    Unrepresentable Domain: Acceptable values change from atlas to atlas.

Detailed Description:
Entity Type:
    Entity Type Label: STATUS
    Entity Type Definition:
The data table STATUS identifies the species that are listed as either threatened or endangered by a state, federal, or international authority. See the Browse Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.
    Entity Type Definition Source: Research Planning, Inc.

Attribute:
    Attribute Label: ELEMENT
Attribute Definition: Major categories of biological data.
Attribute Definition Source: Research Planning, Inc.

Attribute Domain Values:
- Enumerated Domain:
  - Enumerated Domain Value: BIRD
  - Enumerated Domain Value Definition: Birds
  - Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
- Enumerated Domain Value: FISH
  - Enumerated Domain Value Definition: Fish
  - Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
- Enumerated Domain Value: HABITAT
  - Enumerated Domain Value Definition: Habitats and Plants
  - Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
- Enumerated Domain Value: INVERT
  - Enumerated Domain Value Definition: Invertebrates
  - Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
- Enumerated Domain Value: M_MAMMAL
  - Enumerated Domain Value Definition: Marine Mammals
  - Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
- Enumerated Domain Value: REPTILE
  - Enumerated Domain Value Definition: Reptiles and Amphibians
  - Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
- 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.
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
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<td>Publication date of source material used to assign state status values for each species, if used.</td>
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<td>Enumerated Domain_Value Definition: YYYY for year and optionally MM for month</td>
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<tr>
<td>Attribute</td>
<td>Attribute Label: EL_SPE</td>
<td>Concatenation of ELEMENT and SPECIES_ID. This item links the STATUS data table</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enumerated Domain_Value: Northern California ESI: FISH (Fish Polygons) 44 of 46</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</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 Northern California

Distribution Liability:

Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration (NOAA), 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 the widest community of GIS/mapping users. Distribution formats include Access Personal Geodatabase, ARC export files, Shape files, and MARPLOT map folders. An ArcMap .mxd file, an ArcView 3.x ESI project, and an ESI_Viewer product for use with the MARPLOT data are also included on the distribution CDs/DVDs 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: 200902
Metadata Review Date: 200902
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

Generated by mp version 2.8.21 on Thu Mar 19 19:51:45 2009
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: FISHL (Fish Lines)

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

Metadata:

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

Identification_Information:

Citation:

Originator:

Publication_Date: 200812

Title:
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: FISHL (Fish Lines)

Edition: Second

Geospatial_Data_Presentation_Form: Vector digital data

Series_Information:

Series_Name: None
Issue_Identification: Northern California

Publication_Information:

Publication_Place: Seattle, Washington

Publisher:

Other_Citation_Details:
Guard, Office of Incident Management and Preparedness, Washington, D.C.; and Department of Fish and Game, Office of Spill Prevention and Response, Sacramento, California.

Description:

Abstract:

This data set contains sensitive biological resource data for anadromous and threatened/endangered stream species in Northern California. Vector lines in this data set represent trout and salmon spawning runs and sensitive stream 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 Northern California. 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 Northern California 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: 1959
Ending_Date: 2007

Currentness_Reference:

The biological data were compiled during 2007. The currentness dates for the data range from 1959 to 2007 and are documented in the Lineage section.

Status:

Progress: Complete
Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_BoundingCoordinate: -124.45800
East_BoundingCoordinate: -122.75000
North_BoundingCoordinate: 37.97900
South_BoundingCoordinate: 42.00000

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: Northern California
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 Northern California ESI data.
Browse_Graphic_File_Type: JPEG

Data_Set_Credit:
This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Emergency Response Division (formerly Hazardous Materials Response Division), Seattle, Washington and Assessment and Restoration Division, Silver Spring, Maryland; Department of Homeland Security, U.S. Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.; and Department of Fish and Game, Office of Spill Prevention and Response, Sacramento, California.

Native_Data_Set_Environment:
The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO® (version 9.2) and SQL SERVER® (version 2000). The hardware configuration is PCs 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, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, soc econ.e00, t_mammal.e00. Associated relational and desktop data tables provided in ARC export and text format are bio_lut, biofile, bioreis, 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® to ARC/INFO® consistencies. A final review is made by the GIS manager, where the data are written to CD or DVD, 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 IDs and RARNUMs or HUNUMs are also generated. The new IDs 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 RARNUMs are also modified to include the atlas number, so multiple atlases can be combined and RARNUMs remain unique. RARNUMs are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUMs are also modified to include the atlas number.

Completeness_Report:
These data represent a synthesis of expert knowledge, digital data and hardcopy maps. See also the FISH (Fish Polygons) data layer, part of the larger Northern California ESI database, for additional fish information. These data do not necessarily represent all fish occurrences in Northern California. The following species are included in this data set: (Species ID, Common Name, Scientific Name [n/a if not applicable]): 44, Green sturgeon, Acipenser medirostris; 45, Coastal cutthroat trout, Oncorhynchus clarkii clarkii; 68, Chinook salmon, Oncorhynchus tshawytscha; 69, Coho salmon, Oncorhynchus kisutch; 70, Pink salmon, Oncorhynchus gorbuscha; 74, Steelhead, Oncorhynchus mykiss; 226, Tidewater goby, Eucyclogobius newberryi.

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: ASHTON, D.
Publication_Date: 2007
Title: SALMONID DISTRIBUTION AND SEASONALITY IN NORTHERN CALIFORNIA
Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
Other_Citation_Details: UNPUBLISHED
Type_of_Source_Media: PERSONAL COMMUNICATION
Source_Time_Period_of_Content:
Other_Citation_Details: REPORT TO THE CALIFORNIA FISH AND GAME COMMISSION, 594 PP.
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: FISHL INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: CDF&G BIOGEOGRAPHIC DATA BRANCH
      Publication_Date: 2007
      Title: CALIFORNIA NATURAL DIVERSITY DATABASE
      Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
      Other_Citation_Details: <http://www.dfg.ca.gov/biogeodata/> (Contact the site webmaster if this URL is no longer active.)
    Source_Scale_Denominator: VARIES
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:
  Time_Period_Information:
    Single_Date/Time:
      Calendar_Date: 2007
Source_Currentness_Reference: DATE OF PUBLICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: FISHL INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: COX, B. (CDF&G)
      Publication_Date: 2007
      Title:
      FISH, INVERTS, AND HABITATS IN SONOMA/MARIN COUNTY STREAMS AND ESTUARIES
      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: 2007
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: FISHL INFORMATION
Source_Information:
  Source_Citation:
    Citation_Information:
      Originator: DILLON, J. (NMFS)
      Publication_Date: 2007
Northern California ESI:  FISHL (Fish Lines)

Citation Information:
Originator: SPENCE, B.C., G.A. LOMNICKY, R.M. HUGHES, AND R.P. NOVITZKI
Publication Date: 1996
Title: AN ECOSYSTEM APPROACH TO SALMONID CONSERVATION
Geospatial Data Presentation Form: HARDCOPY TEXT
Other Citation Details:
TR-4501-96-6057. MANTECH ENVIRONMENTAL RESEARCH SERVICES CORP. CORVALLIS, OR

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: U.S. FISH AND WILDLIFE SERVICE
Publication Date: 2005
Title: RECOVERY PLAN FOR THE TIDEWATER GOBY
Geospatial Data Presentation Form: HARDCOPY TEXT
Other Citation Details: U.S. FISH AND WILDLIFE SERVICE, PORTLAND, OREGON. VI + 199 PP.

Type of Source Media: ONLINE
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: FISHL INFORMATION

Source Information:
Source Citation:
Citation Information:
Originator: U.S. GEOLOGICAL SURVEY (USGS)
Publication Date: 1972
Title: SCANNED TOPOGRAPHIC MAPS
Geospatial Data Presentation Form: HARDCOPY MAP
Other Citation Details:
[http://archive.casil.ucdavis.edu/casil/maps/drg/7.5_minute_series_albers_nad83_trimmed/] (Contact the site webmaster if this URL is no longer active.)

Source Scale Denominator: 24,000
Type of Source Media: PAPER
Source Time Period of Content:
Time Period Information:
Single Date/Time:
    Calendar Date: 1959
Source Currentness Reference: DATE OF PUBLICATION
Three main sources of data were used to depict fish distribution and seasonality for this data layer: 1) personal interviews with resource experts from the California Department of Fish & Game (CDF&G) and NOAA National Marine Fisheries Service (NMFS); 2) published documents and maps; and 3) digital data provided by NMFS displaying distribution of steelhead and chinook salmon in rivers and streams, CDF&G digital data displaying coastal cutthroat trout, and USFWS tabular data for tidewater goby locations.

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; and/or 3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer. The compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. If necessary, edits to the FISHL data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.
Contact Information:

Contact Organization Primary:
  Contact Organization: NOAA, Office of Response and Restoration
  Contact Person: Jill Petersen

Contact Address:
  Address Type: Physical address
  Address: 7600 Sand Point Way, N.E.
  City: Seattle
  State or Province: Washington
  Postal Code: 98115-6349

Contact Voice Telephone: (206) 526-6944
Contact Facsimile Telephone: (206) 526-6329
Contact Electronic Mail Address: Jill.Petersen@noaa.gov

Spatial Data Organization Information:

Direct Spatial Reference Method: Vector

Point and Vector Object Information:
  SDTS Terms Description:
    SDTS Point and Vector Object Type: Complete chain
    Point and Vector Object Count: 500
  SDTS Terms Description:
    SDTS Point and Vector Object Type: Link
    Point and Vector Object Count: 42781
  SDTS Terms Description:
    SDTS Point and Vector Object Type: Node, planar graph
    Point and Vector Object Count: 716

Spatial Reference Information:

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

  Geodetic Model:
    Horizontal Datum Name: North American Datum of 1927
    Ellipsoid Name: Clark 1866
    Semi-major Axis: 6378206.400000
    Denominator of Flattening Ratio: 294.978698

Entity and Attribute Information:

Overview Description:
  Entity and Attribute Overview:
  In addition to the geographic data layers, six relational attribute or data tables, BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS, are used to store the complex biological data in the ESI data structure. The geographic data layer containing biological resource information (in this case, 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 Northern California atlas, the number is 207), 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 trout and salmon spawning runs and sensitive stream 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 (207), 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:**

N
northern California ESI:  FISHL (Fish Lines)
Range Domain:
  Range Domain Minimum: 2072200001
  Range Domain Maximum: 2072200500

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: 207000516
      Range Domain Maximum: 207000629

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: 207000001
      Range Domain Maximum: 207001115

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 (207), 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: 2070100002
      Range Domain Maximum: 2072200500

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:**

<table>
<thead>
<tr>
<th>Range Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range Domain Minimum: 207000001</td>
</tr>
<tr>
<td>Range Domain Maximum: 207001115</td>
</tr>
</tbody>
</table>

**Attribute:**

**Attribute Label:** SPECIES_ID

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

**Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

<table>
<thead>
<tr>
<th>Range Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range Domain Minimum: 1</td>
</tr>
<tr>
<td>Range Domain Maximum: N</td>
</tr>
</tbody>
</table>

**Attribute:**

**Attribute Label:** CONC

**Attribute Definition:**
The field CONC refers to "concentration," abundance, or density values of a species at a particular location. No quantitative data were available for fish, so the concentration field may contain a descriptive concentration term, such as "HIGH". If no concentration information was available from any source, the CONC field is populated with ".-".

**Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

<table>
<thead>
<tr>
<th>Unrepresentable Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptable values change from atlas to atlas</td>
</tr>
</tbody>
</table>

**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:**

<table>
<thead>
<tr>
<th>Range Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range Domain Minimum: 1</td>
</tr>
<tr>
<td>Range Domain Maximum: N</td>
</tr>
</tbody>
</table>

**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:**

<table>
<thead>
<tr>
<th>Range Domain</th>
</tr>
</thead>
</table>
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 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 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 = 'B000101').
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 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 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.
    Enumerated_Domain:
      Enumerated_Domain_Value: FISH
      Enumerated_Domain_Value_Definition: Fish
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Enumerated_Domain:
      Enumerated_Domain_Value: HABITAT
      Enumerated_Domain_Value_Definition: Habitats and Plants
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Enumerated_Domain:
      Enumerated_Domain_Value: INVERT
      Enumerated_Domain_Value_Definition: Invertebrates
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Enumerated_Domain:
      Enumerated_Domain_Value: M_MAMMAL
      Enumerated_Domain_Value_Definition: Marine Mammals
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Enumerated_Domain:
      Enumerated_Domain_Value: REPTILE
      Enumerated_Domain_Value_Definition: Reptiles and Amphibians
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    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: amphibia
Enumerated_Domain_Value_Definition: Amphibian
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: dolphin
Enumerated_Domain_Value_Definition: Dolphin
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: e_resident
Enumerated_Domain_Value_Definition: Estuarine resident
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: freshwater
  Enumerated_Domain_Value_Definition: Freshwater fish
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: gastropod
  Enumerated_Domain_Value_Definition: Gastropod
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: gull_tern
  Enumerated_Domain_Value_Definition: Gull or tern
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: insect
  Enumerated_Domain_Value_Definition: Insect
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: 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: passerine
  Enumerated_Domain_Value_Definition: Passerine bird
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: pelagic
  Enumerated_Domain_Value_Definition: Pelagic bird
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: pinniped
  Enumerated_Domain_Value_Definition: Pinniped
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Enumerated_Domain:
    Enumerated_Domain_Value: plant
    Enumerated_Domain_Value_Definition: Plant
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: raptor
        Enumerated_Domain_Value_Definition: Raptor
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: sav
        Enumerated_Domain_Value_Definition: Submerged aquatic vegetation
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: 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: sm_mammal
        Enumerated_Domain_Value_Definition: Small mammal
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: turtle
        Enumerated_Domain_Value_Definition: Turtle
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: ungulate
        Enumerated_Domain_Value_Definition: Ungulate
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: wading
        Enumerated_Domain_Value_Definition: Wading bird
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: waterfowl
*Enumerated_Domain_Value_Definition*: Waterfowl  
*Enumerated_Domain_Value_Definition_Source*: Research Planning, Inc.

**Attribute_Domain_Values:**

*Enumerated_Domain:*

*Enumerated_Domain_Value: whale*

*Enumerated_Domain_Value_Definition: Whale*

*Enumerated_Domain_Value_Definition_Source*: Research Planning, Inc.

**Attribute:**

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

**Attribute_Domain_Values:**

*Codeset_Domain:*

*Codeset_Name*: NHP Global Conservation Status Rank  
*Codeset_Source*: Natural Heritage Program

**Attribute:**

*Attribute_Label*: DATE_PUB  
*Attribute_Definition*: Date of NHP listing.  
*Attribute_Definition_Source*: Research Planning, Inc.

**Attribute_Domain_Values:**

*Enumerated_Domain:*

*Enumerated_Domain_Value: YYYYMM*

*Enumerated_Domain_Value_Definition*: YYYY for year and optionally MM for month  
*Enumerated_Domain_Value_Definition_Source*: Research Planning, Inc.

**Attribute:**

*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.
  - **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.
  - **Enumerated Domain Value:** -
    **Enumerated Domain Value Definition:** Breed category not used or not appropriate for record(s) in question
    **Enumerated Domain Value Definition Source:** Research Planning, Inc.

**Attribute:**

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

**Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

- **Enumerated Domain:**
  - **Enumerated Domain Value:** Y
  - **Enumerated Domain Value Definition:** Life-history stage or activity present
    **Enumerated Domain Value Definition Source:** Research Planning, Inc.
  - **Enumerated Domain Value:** N
  - **Enumerated Domain Value Definition:** Life-history stage or activity not present or not reported
Attribute: BREED3

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

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

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

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.

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.
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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

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

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

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

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

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

Attribute:
    Attribute_Label: SOURCE_ID
    Attribute_Definition:
        Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; and SOURCE_ID in the ESI and HYDRO data layers.
    Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
    Range_Domain:
        Range_Domain_Minimum: 1
        Range_Domain_Maximum: N
Attribute 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.

**Enumerated_Domain:**

- **Enumerated_Domain_Value:** FISH
  - **Enumerated_Domain_Value_Definition:** Fish
  - **Enumerated_Domain_Value_Definition_Source:** Research Planning, Inc.

**Enumerated_Domain:**

- **Enumerated_Domain_Value:** HABITAT
  - **Enumerated_Domain_Value_Definition:** Habitats and Plants
  - **Enumerated_Domain_Value_Definition_Source:** Research Planning, Inc.

**Enumerated_Domain:**

- **Enumerated_Domain_Value:** INVERT
  - **Enumerated_Domain_Value_Definition:** Invertebrates
  - **Enumerated_Domain_Value_Definition_Source:** Research Planning, Inc.

**Enumerated_Domain:**

- **Enumerated_Domain_Value:** M_MAMMAL
  - **Enumerated_Domain_Value_Definition:** Marine Mammals
  - **Enumerated_Domain_Value_Definition_Source:** Research Planning, Inc.

**Enumerated_Domain:**

- **Enumerated_Domain_Value:** REPTILE
  - **Enumerated_Domain_Value_Definition:** Reptiles and Amphibians
  - **Enumerated_Domain_Value_Definition_Source:** Research Planning, Inc.

**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:**

Northern California ESI: FISHL (Fish Lines)
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
    Enumerated Domain:
      Enumerated Domain Value: T
      Enumerated Domain Value Definition: Threatened on state list
      Enumerated Domain Value Definition Source: NOAA ESI Guidelines
    Enumerated Domain:
      Enumerated Domain Value: C
      Enumerated Domain Value Definition: Species of Special Concern
      Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute:
  Attribute Label: F
  Attribute Definition: Federal threatened or endangered status.
  Attribute Definition Source: 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
    Enumerated Domain:
      Enumerated Domain Value: T
      Enumerated Domain Value Definition: Threatened on federal list
      Enumerated Domain Value Definition Source: NOAA ESI Guidelines
    Enumerated Domain:
      Enumerated Domain Value: C
      Enumerated Domain Value Definition: Species of Special Concern
      Enumerated Domain Value Definition Source: NOAA ESI Guidelines
Attribute:
  Attribute_Label: I
  Attribute_Definition: International threatened or endangered status.
  Attribute_Definition_Source: 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:** YYY 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_orProvince:** Washington

**Postal_Code:** 98115-6349

**Contact_Voice_Telephone:** (206) 526-6400

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

**Resource_Description:** ESI Atlas for Northern California

**Distribution_Liability:**

Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration (NOAA), 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 the widest community of GIS/mapping users. Distribution formats include Access Personal Geodatabase, ARC export files, Shape files, and MARPLOT map folders. An ArcMap .mxd file, an ArcView 3.x ESI project, and an ESI_Viewer product for use with the MARPLOT data are also included on the distribution CDs/DVDs 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.
Northern California ESI: FISHL (Fish Lines)

Metadata_Reference_Information:
Metadata_Date: 200902
Metadata_Review_Date: 200902
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_orProvince: 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

Generated by mp version 2.8.21 on Thu Mar 19 19:58:54 2009
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: INVERT (Invertebrate Polygons)

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

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:

Publication_Date: 200812

Title:
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: INVERT (Invertebrate Polygons)

Edition: Second

Geospatial_Data_Presentation_Form: Vector digital data

Series_Information:

Series_Name: None

Issue_Identification: Northern California

Publication_Information:

Publication_Place: Seattle, Washington

Publisher:

Other_Citation_Details:
Description:

Abstract:

This data set contains sensitive biological resource data for marine, estuarine, freshwater, and terrestrial invertebrate species in Northern California. Vector polygons in this data set represent invertebrate distribution and concentration areas. Species-specific abundance, seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer.

This data set comprises a portion of the Environmental Sensitivity Index (ESI) data for Northern California. ESI data characterize the marine and coastal environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources.

Purpose:

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

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1990
Ending_Date: 2007

Currentness_Reference:

The biological data were compiled during 2007. The currentness dates for the data range from 1990 to 2007 and are documented in the Lineage section.

Status:

Progress: Complete

Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_BoundingCoordinate: -124.45800
East_BoundingCoordinate: -122.75000
North_BoundingCoordinate: 37.97900
South_BoundingCoordinate: 42.00000

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: Northern California
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 Northern
California ESI data.
Browse_Graphic_File_Type: JPEG

Data_Set_Credit:
This project was supported by the National Oceanic and Atmospheric Administration (NOAA),
National Ocean Service, Office of Response and Restoration, Emergency Response Division
(formerly Hazardous Materials Response Division), Seattle, Washington and Assessment and
Restoration Division, Silver Spring, Maryland; Department of Homeland Security, U.S. Coast Guard,
Office of Incident Management and Preparedness, Washington, D.C.; and Department of Fish and
Game, Office of Spill Prevention and Response, Sacramento, California.

Native_Data_Set_Environment:
The software packages used to develop the atlas are Environmental Systems Research Institute's
ARC/INFO® (version 9.2) and SQL SERVER® (version 2000). The hardware configuration is PCs

The Spatial_Data_Organization Information section refers only to the source files in the ARC export
format. The following files are included in that data set: birds.e00, esi.e00, fish.e00, fishl.e00,
habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00,
socecon.e00, t_mammal.e00. Associated relational and desktop data tables provided in ARC export
and text format are bio_lut, biofile, biore, 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® to ARC/INFO® consistencies. A final review is made by the GIS manager, where the data are written to CD or DVD, 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 IDs and RARNUMs or HUNUMs are also generated. The new IDs 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 RARNUMs are also modified to include the atlas number, so multiple atlases can be combined and RARNUMs remain unique. RARNUMs are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUMs are also modified to include the atlas number.

Completeness_Report:
These data represent a synthesis of expert knowledge, available hardcopy documents, maps, and digital data on invertebrate distribution and concentration areas. These data do not necessarily represent all invertebrate occurrences in Northern California. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 1, California butterclam, Saxidomus nuttallii; 3, California bay shrimp, Crangon franciscorum; 5, Ocean pink shrimp, Pandalus jordani; 8, Spot prawn, Pandalus platyceros; 14, Dungeness crab, Cancer magister; 15, Lined shore crab, Pachygrapsus crassipes; 19, Bay mussel, Mytilus edulis; 20, California mussel, Mytilus californianus; 21, Washington butterclam, Saxidomus gigantea; 23, Horseneck gaper, Tresus capax; 24, Pacific gaper, Tresus nuttallii; 25, Softshell clam, Mya arenaria; 26, Manila clam, Venerupis philippinarum; 28, Pacific razor clam, Siliqua patula; 29, Pacific littleneck, Protothaca staminea; 32, Geoduck, Panopea abrupta; 37, California market squid, Loligo opalescens; 38, California native oyster, Ostrea conchaphila; 53, Red rock crab, Cancer productus; 57, Brown rock crab, Cancer antennarius; 61, Red abalone, Haliotis rufescens; 62, Black abalone, Haliotis cracherodii; 66, California jackknife clam, Tagelus californianus; 70, Purple shore crab, Hemigrapsus nudus; 79, Pacific oyster, Crassostrea gigas; 290, California freshwater shrimp, Syncaris pacifica; 294, San Bruno elfin butterfly, Incisalia mossii bayensis; 304, Green crab, Carcinus maenas; 354, Pacific sand crab, Emerita analoga; 447, Ghost shrimp, Calianassa sp.; 505, Monarch butterfly, Danaus Plexippus; 510, Yellow shore crab, Hemigrapsus oregonensis; 526, Lewis's moonsnail, Eupisia lewisi; 549, Myrtle's silverspot, Speyeria zerene myrtleae; 555, Globose dune beetle, Coelus globosus; 577, Mediterranean mussel, Mytilus galloprovincialis; 578, Oregon silverspot butterfly, Speyeria zerene hippolyta; 579, Behren's silverspot butterfly, Speyeria zerene behrensi; 580, Lotus blue butterfly, Lycaeides argyrognomon lotis; 581, Zebra leafslug, Phyllaplysis taylori; 582, Black tegula, Tegula funebralis; 583, Brown tegula, Tegula brunnea; 1009, Sea urchins, n/a; 1015, Mussels, n/a; 1052, Cockles, n/a.

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:** ALLEN, S. (NATIONAL PARK SERVICE, POINT REYES)

**Publication_Date:** 2005

**Title:**

DISTRIBUTION AND SEASONALITY OF SPECIES AND SOC_ECON FEATURES ON NPS LANDS

**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:** 2005

**Source_Currentness_Reference:** DATE OF COMMUNICATION

**Source_Citation_Abbreviation:** NONE

**Source_Contribution:** INVERT INFORMATION

**Source Information:**

**Source Citation:**

**Citation Information:**

**Originator:** BARNHARDT, R.A., M.J. BOYD, AND J.E. PEQUEGNAT

**Publication_Date:** 1992

**Title:**

ESSENTIAL FISH HABITAT SPECIES IN HUMBOLDT BAY CA, FROM THE ECOLOGY OF HUMBOLDT BAY: AN ESTUARINE PROFILE

**Geospatial_Data_Presentation_Form:** HARDCOPY TEXT

**Other_Citation_Details:** U.S. FISH AND WILDLIFE SERVICE BIOLOGICAL REPORT 1. 121 PP.

**Type_of_Source_Media:** PAPER

**Source_Time_Period_of_Content:**

**Time_Period_Information:**

**Single_Date/Time:**

**Calendar_Date:** 1992

**Source_Currentness_Reference:** DATE OF PUBLICATION

**Source_Citation_Abbreviation:** NONE

**Source_Contribution:** INVERT INFORMATION

**Source Information:**

**Source Citation:**

**Citation Information:**

**Originator:** CANNATA, S.

**Publication_Date:** 2007

**Title:**

DISTRIBUTION OF FISH AND INVERTS IN RIVERS AND ESTUARIES
Publication Date: 2007
Title: MARINE SPORTFISH AND OTHER MARINE RESOURCES
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: 2007
Source Currentness Reference: DATE OF COMMUNICATION
Source Citation Abbreviation: NONE
Source Contribution: INVERT INFORMATION
Source Information:
Source Citation:
  Citation Information:
    Originator: CDF&G, USCG
    Publication Date: 2005
    Title:
      SAN FRANCISCO GEOGRAPHIC RESPONSE AREA 1 SONOMA AND NORTH MARIN COAST
    Geospatial Data Presentation Form: HARDCOPY TEXT
    Other Citation Details: ACP 2 SF BAY & DELTA - GRA 1
  Type of Source Media: DISC
  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: INVERT INFORMATION
  Source Information:
  Source Citation:
    Citation Information:
      Originator: FREY, V. (CDF&G, EUREKA)
      Publication Date: 2007
      Title:
        MARINE RESOURCE DISTRIBUTION AND SEASONALITY IN NORTHERN CALIFORNIA
      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: 2007
    Source Currentness Reference: DATE OF COMMUNICATION
    Source Citation Abbreviation: NONE
    Source Contribution: INVERT INFORMATION
  Source Information:
  Source Citation:
    Citation Information:
      Originator: HARRIS, JAY (CSP, EUREKA)
COASTAL RESOURCE DISTRIBUTION AND SEASONALITY IN
NORTHERN CALIFORNIA

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: 2007
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: INVERT INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: MAAHS, M. AND S. CANNATA
Publication_Date: 1998
Title:
THE ALBION RIVER ESTUARY. ITS HISTORY, WATER QUALITY,
AND USE BY SALMONIDS AND OTHER FISH AND WILDLIFE
SPECIES.
Geospatial_Data_Presentation_Form: HARDCOPY TEXT
Other_Citation_Details: CDF&G, UNPUBLISHED REPORT

Type_of_Source_Media: EMAIL
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: INVERT INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: MELLO, J. (CDF&G, EUREKA)
Publication_Date: 2007
Title:
MARINE RESOURCE DISTRIBUTION AND SEASONALITY IN
NORTHERN CALIFORNIA
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: 2007
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: INVERT INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: MONACO, M.E., R.L. EMMETT, D.M. NELSON, AND S.A. HINTON
Publication Date: 1990
Title:
DISTRIBUTION AND ABUNDANCE OF FISHES AND INVERTEBRATES IN WEST COAST ESTUARIES, VOLUME I. DATA SUMMARIES.
Geospatial Data Presentation Form: HARDCOPY TEXT
Other Citation Details:
ELMR REP. NO. 4. NOAA/NOS STRATEGIC ENVIRONMENTAL ASSESSMENTS DIVISION, SILVER SPRING, MD 232 P.

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: INVERT INFORMATION
Source Information:
Source Citation:
Citation Information:
Originator: NOAA NOS OR&R HAZMAT
Publication Date: 2001
Title:
SENSITIVITY OF COASTAL ENVIRONMENTS AND WILDLIFE TO SPILLED OIL: NORTHERN CALIFORNIA
Geospatial Data Presentation Form: VECTOR DIGITAL DATA
Other Citation Details: SEATTLE, WASHINGTON

Source Scale Denominator: 24,000
Type of Source Media: CD-ROM
Source Time Period of Content:
Time Period Information:
Range of Dates/Times:
Beginning Date: 1994
Ending Date: 2001
Source Currentness Reference: DATE OF PUBLICATION
Source Citation Abbreviation: NONE
Source Contribution: INVERT INFORMATION
Source Information:
Source Citation:
Citation Information:
Originator: ODA, K. (CDF&G, BELMONT)
Publication Date: 2005
Title:
DISTRIBUTION AND SEASONALITY OF FISH AND INVERTEBRATES AND SOC_ECON FEATURES
Geospatial Data Presentation Form: EXPERT KNOWLEDGE
Other Citation Details: UNPUBLISHED
Type of Source Media: PERSONAL COMMUNICATION
Source Time Period of Content:
Time Period Information:
Source Information:
Citation Information:
Originator: ROBERTS, E. (CDF&G, EUREKA)
Publication Date: 2007
Title: MARINE RESOURCE DISTRIBUTION AND SEASONALITY
Geospatial Data Presentation Form: EXPERT KNOWLEDGE
Other Citation Details: UNPUBLISHED
Type of Source Media: PERSONAL COMMUNICATION
Source Time Period of Content:
Single Date/Time:
Calendar Date: 2007
Source Currentness Reference: DATE OF COMMUNICATION
Source Citation Abbreviation: NONE
Source Contribution: INVERT INFORMATION
Source Information:
Citation Information:
Originator: SAKAI, W. (SANTA MONICA COLLEGE)
Publication Date: 2004
Title: ACCESSIBLE MONARCH OVERWINTERING COLONIES IN CALIFORNIA
Geospatial Data Presentation Form: WEBSITE
Other Citation Details:
<http://homepage.smc.edu/SAKAI_WALTER/MONARCH%20BUTTERFLY/MONARCH.HTM> (Contact the site webmaster if this URL is no longer active.)
Type of Source Media: ONLINE
Source Time Period of Content:
Single Date/Time:
Calendar Date: 2004
Source Currentness Reference: DATE OF PUBLICATION
Source Citation Abbreviation: NONE
Source Contribution: INVERT INFORMATION
Source Information:
Citation Information:
Originator: THE GOLD RIDGE RESOURCE CONSERVATION DISTRICT
Publication Date: 2007
Title: THE ESTERO AMERICANO WATERSHED MANAGEMENT PLAN
Geospatial Data Presentation Form: HARDCOPY TEXT
Other Citation Details: SWRCB CONTRACT NO. 03-138-250-1
Type of Source Media: ONLINE
Source Time Period of Content:
Time Period Information:
Northern California ESI: INVERT (Invertebrate Polygons)
Three main sources of data were used to depict invert distribution and seasonality for this data layer: 1) personal interviews with resource experts from the California Department of Fish & Game (CDF&G), NOAA National Marine Fisheries Service (NMFS), National Park Service (NPS), and California State Parks (CSP); 2) published and unpublished documents and maps; and 3) CDF&G digital data displaying sensitive species occurrences.

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; and/or 3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer. The compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. If necessary, edits to the INVERT data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are
created.

**Process_Date:** 200812
**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:** 6987
- **SDTS Terms Description:**
  **SDTS Point and Vector Object Type:** Area point
  **Point and Vector Object Count:** 6986
- **SDTS Terms Description:**
  **SDTS Point and Vector Object Type:** Complete chain
  **Point and Vector Object Count:** 8201
- **SDTS Terms Description:**
  **SDTS Point and Vector Object Type:** Link
  **Point and Vector Object Count:** 348697
- **SDTS Terms Description:**
  **SDTS Point and Vector Object Type:** Node, planar graph
  **Point and Vector Object Count:** 7991

**Spatial Reference Information:**

**Horizontal Coordinate System Definition:**

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

**Geodetic Model:**
- **Horizontal Datum Name:** North American Datum of 1927
- **Ellipsoid Name:** Clark 1866
- **Semi-major Axis:** 6378206.40000
- **Denominator of Flattening Ratio:** 294.978698

**Entity and Attribute Information:**
Overview_Description:

Entity_and_Attribute_Overview:

In addition to the geographic data layers, six relational attribute or data tables, BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS, are used to store the complex biological data in the ESI data structure. The geographic data layer containing biological resource information (in this case, INVERT) is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or it can be linked directly using RARNUM. The ID is a unique combination of the atlas number (for the Northern California atlas, the number is 207), 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, seasonality, concentrations, and source information. For each of these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases. BIORES and the other relational data tables are described below in detail. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way these tables relate to the geographic data layers and other attribute tables in the ESI data structure.

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

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

Detailed_Description:

Entity_Type:

Entity_Type_Label: INVERT.PAT

Entity_Type_Definition:

The INVERT.PAT table contains attribute information for the vector polygons in this data set representing invertebrate distribution and concentration areas. Note that all attribute information is stored in a series of relational files, described below. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the relationships between attribute tables in the ESI data structure.
**Entity_Type_Definition_Source:** Research Planning, Inc.

**Attribute:**
- **Attribute_Label:** ID
- **Attribute_Definition:** An identifier that links vector objects in the biology data layers to records in the BIO_LUT data table. ID is a concatenation of atlas number (207), 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:** 207000001
    - **Range_Domain_Maximum:** 207001115

**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:** 207000001
    - **Range_Domain_Maximum:** 207001115

**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.
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: 207000001
Range Domain Maximum: 207001115

Attribute:

Attribute Label: SPECIES_ID

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

Attribute Definition Source: Research Planning, Inc.

Attribute Domain Values:

Range Domain:
Range Domain Minimum: 1
Range Domain Maximum: N

Attribute:

Attribute Label: CONC

Attribute Definition:
The field CONC refers to "concentration," abundance, or density values, and may
contain counts of a species at a particular location. Descriptive terms such as "HIGH"
were used to describe the relative abundance of particular invertebrate species at
specific locations. In cases where no concentration information was available from any
source, the field was populated with "-".

Attribute Definition Source: Research Planning, Inc.

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

Attribute:

Attribute Label: SEASON_ID

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

Attribute Definition Source: Research Planning, Inc.

Attribute Domain Values:
Range_Domain:
  Range_Domain_Minimum: 1
  Range_Domain_Maximum: N

Attribute:
  Attribute_Label: G_SOURCE
  Attribute_Definition:
  Geographic source identifier that links records in the BIORES data table to records in
  the SOURCES data table.
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum: 1
      Range_Domain_Maximum: N

Attribute:
  Attribute_Label: S_SOURCE
  Attribute_Definition:
  Seasonality source identifier that links records in the BIORES data table to records in
  the SOURCES data table.
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Range_Domain:
      Range_Domain_Minimum: 1
      Range_Domain_Maximum: N

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

Enumerated Domain:

Enumerated Domain Value: REPTILE
Enumerated Domain Value Definition: Reptiles and Amphibians
Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: T_MAMMAL
Enumerated Domain Value Definition: Terrestrial Mammals
Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute:

Attribute Label: EL_SPE
Attribute Definition:

Concatenation of ELEMENT and SPECIES_ID. This item links records in the BIORES data table to records in the SPECIES and STATUS data tables.
Attribute Definition Source: Research Planning, Inc.

Attribute Domain Values:

Enumerated Domain:

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

Attribute:

Attribute Label: EL_SPE_SEA
Attribute Definition:

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

Attribute Domain Values:

Enumerated Domain:

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

Detailed Description:

Entity Type:

Entity Type Label: SPECIES
Entity Type Definition:

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

Attribute:

Attribute Label: SPECIES_ID
Attribute Definition:

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

**Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

**Range Domain:**

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

**Attribute:**

**Attribute Label:** NAME

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

**Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

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

**Attribute:**

**Attribute Label:** GEN_SPEC

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

**Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

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

**Attribute:**

**Attribute Label:** ELEMENT

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

**Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

**Enumerated Domain:**

- **Enumerated Domain Value:** BIRD
  - **Enumerated Domain Value Definition:** Birds
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

**Enumerated Domain:**

- **Enumerated Domain Value:** FISH
  - **Enumerated Domain Value Definition:** Fish
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

**Enumerated Domain:**

- **Enumerated Domain Value:** HABITAT
  - **Enumerated Domain Value Definition:** Habitats and Plants
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

**Enumerated Domain:**

- **Enumerated Domain Value:** INVERT
  - **Enumerated Domain Value Definition:** Invertebrates
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

**Enumerated Domain:**

- **Enumerated Domain Value:** M_MAMMAL
  - **Enumerated Domain Value Definition:** Marine Mammals
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

**Enumerated Domain:**

- **Enumerated Domain Value:** REPTILE
  - **Enumerated Domain Value Definition:** Reptiles and Amphibians
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: T_MAMMAL
    Enumerated_Domain_Value_Definition: Terrestrial Mammals
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
  Attribute_Label: SUBELEMENT
  Attribute_Definition: Element subgroup delineating a logical grouping of species.
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:
      Enumerated_Domain_Value: alcid
      Enumerated_Domain_Value_Definition: Alcid
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Enumerated_Domain:
      Enumerated_Domain_Value: amphibian
      Enumerated_Domain_Value_Definition: Amphibian
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Enumerated_Domain:
      Enumerated_Domain_Value: bivalve
      Enumerated_Domain_Value_Definition: Bivalve
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Enumerated_Domain:
      Enumerated_Domain_Value: cephalopod
      Enumerated_Domain_Value_Definition: Cephalopod
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Enumerated_Domain:
      Enumerated_Domain_Value: crab
      Enumerated_Domain_Value_Definition: Crab
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Enumerated_Domain:
      Enumerated_Domain_Value: diadromous
      Enumerated_Domain_Value_Definition: Diadromous fish
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Enumerated_Domain:
      Enumerated_Domain_Value: diving
      Enumerated_Domain_Value_Definition: Diving bird
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Enumerated_Domain:
      Enumerated_Domain_Value: dolphin
      Enumerated_Domain_Value_Definition: Dolphin
      Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Enumerated_Domain:
      Enumerated_Domain_Value: echinoderm
Enumerated_Domain: Echinoderm
Enumerated_Domain_Value: e_nursery
Enumerated_Domain_Value: Estuarine nursery fish
Enumerated_Domain_Value_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: e_resident
Enumerated_Domain_Value: Estuarine resident
Enumerated_Domain_Value_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: freshwater
Enumerated_Domain_Value: Freshwater fish
Enumerated_Domain_Value_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: gastropod
Enumerated_Domain_Value: Gastropod
Enumerated_Domain_Value_Source: Research Planning, Inc.

Attribute_Domain_Values:
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Enumerated_Domain_Value: gull_tern
Enumerated_Domain_Value: Gull or tern
Enumerated_Domain_Value_Source: Research Planning, Inc.

Attribute_Domain_Values:
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Enumerated_Domain_Value: Insect
Enumerated_Domain_Value_Source: Research Planning, Inc.

Attribute_Domain_Values:
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Enumerated_Domain_Value: Kelp
Enumerated_Domain_Value_Source: Research Planning, Inc.

Attribute_Domain_Values:
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Enumerated_Domain_Value: m_benthic
Enumerated_Domain_Value: Marine benthic fish
Enumerated_Domain_Value_Source: Research Planning, Inc.

Attribute_Domain_Values:
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Enumerated_Domain_Value: m_pelagic
Enumerated_Domain_Value: Marine pelagic fish
Enumerated_Domain_Value_Source: Research Planning, Inc.

Attribute_Domain_Values:
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Enumerated_Domain_Value: passerine
Enumerated_Domain_Value: Passerine bird
Enumerated_Domain_Value_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: pelagic
  Enumerated_Domain_Value_Definition: Pelagic bird
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: pinniped
  Enumerated_Domain_Value_Definition: Pinniped
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: plant
  Enumerated_Domain_Value_Definition: Plant
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
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  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:
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  Enumerated_Domain_Value_Definition: Sea otter
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
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  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: sm_mammal
  Enumerated_Domain_Value_Definition: Small mammal
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
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  Enumerated_Domain_Value: turtle
  Enumerated_Domain_Value_Definition: Turtle
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
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<table>
<thead>
<tr>
<th>Attribute</th>
<th>Attribute Label</th>
<th>Attribute Definition</th>
<th>Attribute Definition Source</th>
<th>Attribute Domain Values</th>
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</thead>
<tbody>
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<td>Enumerated_Domain</td>
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<td>Natural Heritage Program global ranking.</td>
<td>Network of Natural Heritage Program</td>
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<td>Codeset_Name: NHP Global Conservation Status Rank</td>
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<td>DATE_PUB</td>
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<td>Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.</td>
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<td></td>
<td>EL_SPE</td>
<td>Concatenation of ELEMENT and SPECIES_ID. This item links records in the SPECIES data table to records in the BIORES and STATUS data tables.</td>
<td>Research Planning, Inc.</td>
<td>Enumerated_Domain:</td>
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<td>Enumerated_Domain_Value_Definition: Where E is the first character of ELEMENT and the next five characters</td>
</tr>
</tbody>
</table>
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.
  - **Enumerated Domain:**
    - **Enumerated Domain Value:** FISH
    - **Enumerated Domain Value Definition:** Fish
    - **Enumerated Domain Value Definition Source:** Research Planning, Inc.
  - **Enumerated Domain:**
    - **Enumerated Domain Value:** HABITAT
    - **Enumerated Domain Value Definition:** Habitats and Plants
    - **Enumerated Domain Value Definition Source:** Research Planning, Inc.
  - **Enumerated Domain:**
    - **Enumerated Domain Value:** INVERT
    - **Enumerated Domain Value Definition:** Invertebrates
    - **Enumerated Domain Value Definition Source:** Research Planning, Inc.
  - **Enumerated Domain:**
    - **Enumerated Domain Value:** M_MAMMAL
    - **Enumerated Domain Value Definition:** Marine Mammals
    - **Enumerated Domain Value Definition Source:** Research Planning, Inc.
  - **Enumerated Domain:**
    - **Enumerated Domain Value:** REPTILE
    - **Enumerated Domain Value Definition:** Reptiles and Amphibians
    - **Enumerated Domain Value Definition Source:** Research Planning, Inc.
  - **Enumerated Domain:**
    - **Enumerated Domain Value:** T_MAMMAL
    - **Enumerated Domain Value Definition:** Terrestrial Mammals
    - **Enumerated Domain Value Definition Source:** Research Planning, Inc.
Attribute: 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: 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: 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: 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: 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: 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.

- **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.

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

Attribute:

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

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

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

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

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

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

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

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

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

Attribute_Domain_Values:

Enumerated_Domain:

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

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.

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: 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.

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 Label: SOURCE_ID
Attribute Definition:
   Source identifier that links records in the SOURCES data table to the items
   G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in
   the BIORES table; and SOURCE_ID in the ESI and HYDRO data layers.
Attribute Definition Source: Research Planning, Inc.
 Attribute Domain Values:
   Range Domain:
      Range Domain Minimum: 1
      Range Domain Maximum: N

Attribute:
Attribute Label: ORIGINATOR
Attribute Definition: Author or developer of source material or data set.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
   Unrepresentable Domain: Acceptable values change from atlas to atlas.

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

Attribute:
Attribute Label: TITLE
Attribute Definition: Title of source material or data.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
   Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute Label: DATA_FORMAT
Attribute Definition: The format of the source material.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
   Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute Label: PUBLICATION
Attribute Definition: Additional citation information.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
   Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute Label: SCALE
Attribute Definition: Description of the source scale.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
   Unrepresentable Domain: Acceptable values change from atlas to atlas.
Attribute:

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

Detailed_Description:

Entity_Type:

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

Attribute:

Attribute_Label: ELEMENT
Attribute_Definition: Major categories of biological data.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: BIRD
  Enumerated_Domain_Value_Definition: Birds
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: FISH
  Enumerated_Domain_Value_Definition: Fish
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: HABITAT
  Enumerated_Domain_Value_Definition: Habitats and Plants
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: INVERT
  Enumerated_Domain_Value_Definition: Invertebrates
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: M_MAMMAL
  Enumerated_Domain_Value_Definition: Marine Mammals
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: REPTILE
  Enumerated_Domain_Value_Definition: Reptiles and Amphibians
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
Enumerated_Domain_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
Attribute: I
Attribute Label: International threatened or endangered status.
Attribute Definition: International threatened or endangered status.
Attribute Definition Source: Research Planning, Inc.
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: S_DATE
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: F_DATE
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.
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 Northern California

**Distribution Liability:**

Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration (NOAA), 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 the widest community of GIS/mapping users. Distribution formats include Access Personal Geodatabase, ARC export files, Shape files, and MARPLOT map folders. An ArcMap .mxd file, an ArcView 3.x ESI project, and an ESI Viewer product for use with the MARPLOT data are also included on the distribution CDs/DVDs 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: 200902
Metadata_Review_Date: 200902
Metadata_Contact:
  ContactInformation:
    ContactPerson_Primary:
      ContactPerson: Jill Petersen
      ContactOrganization: NOAA, Office of Response and Restoration
      ContactPosition: GIS Manager
    ContactAddress:
      Address_Type: Physical Address
      Address: 7600 Sand Point Way, N.E.
      City: Seattle
      State_orProvince: Washington
      Postal_Code: 98115-6349
      ContactVoice_Telephone: (206) 526-6944
      ContactFacsimile_Telephone: (206) 526-6329
      ContactElectronicMail_Address: Jill.Petersen@noaa.gov
    Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata

Generated by mp version 2.8.21 on Thu Mar 19 20:04:49 2009
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: REPTILES (Reptile and Amphibian Polygons)

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

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:


Publication_Date: 200812

Title:

Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: REPTILES (Reptile and Amphibian Polygons)

Edition: Second

Geospatial_Data_Presentation_Form: Vector digital data

Series_Information:

Series_Name: None

Issue_Identification: Northern California

Publication_Information:

Publication Place: Seattle, Washington

Publisher:


Other_Citation_Details:

Description:

Abstract:
This data set contains sensitive biological resource data for sea turtles and estuarine frogs and turtles in Northern California. Vector polygons in this data set represent reptile and amphibian distribution. Species-specific abundance, seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer.

This data set comprises a portion of the Environmental Sensitivity Index (ESI) data for Northern California. 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: 2007

Currentness_Reference:
The biological data were compiled during 2007. The currentness dates for the data range from 1994 to 2007 and are documented in the Lineage section.

Status:
Progress: Complete
Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:
Bounding_Coordinates:
   West_BoundingCoordinate: -124.45800
   East_BoundingCoordinate: -122.75000
   North_BoundingCoordinate: 37.97900
   South_BoundingCoordinate: 42.00000

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: Reptiles
   Theme_Keyword: Amphibians

Place:
   Place_Keyword_Thesaurus: None
   Place_Keyword: Northern California
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 Northern California ESI data.
Browse_Graphic_File_Type: JPEG

Data_Set_Credit:
This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Emergency Response Division (formerly Hazardous Materials Response Division), Seattle, Washington and Assessment and Restoration Division, Silver Spring, Maryland; Department of Homeland Security, U.S. Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.; and Department of Fish and Game, Office of Spill Prevention and Response, Sacramento, California.

Native_Data_Set_Environment:
The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO® (version 9.2) and SQL SERVER® (version 2000). The hardware configuration is PCs 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, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, socecon.e00, t_mammal.e00. Associated relational and desktop data tables provided in ARC export and text format are bio_lut, biofile, biore, 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® to ARC/INFO® consistencies. A final review is made by the GIS manager, where the data are written to CD or DVD, 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 IDs and RARNUMs or HUNUMs are also generated. The new IDs 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 RARNUMs are also modified to include the atlas number, so multiple atlases can be combined and RARNUMs remain unique. RARNUMs are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUMs are also modified to include the atlas number.

**Completeness_Report:**

These data represent a synthesis of expert knowledge and digital data on reptile/amphibian distribution. These data do not necessarily represent all reptile and amphibian occurrences in Northern California. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 5, Leatherback sea turtle, Dermochelys coriacea; 54, California red-legged frog, Rana draytonii; 62, Northwestern pond turtle, Clemmys marmorata marmorata; 154, Northern red-legged frog, Rana aurora.

**Positional_Accuracy:**

**Horizontal_Positional_Accuracy:**

Spatial components for the biological data layers can come from expert interviews, hardcopy, or digital sources. Some of the spatial components of the biological data layers may have been developed using regional experts who estimate concentration areas. It is difficult to estimate the positional accuracy of such data, except to state that they are compiled on hardcopy base maps with a scale of 1:24,000. 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: BENSON, S. (NOAA)
Publication_Date: 2006
Title: SEA TURTLE AND MARINE MAMMAL DISTRIBUTION AND SEASONALITY IN CALIFORNIA
Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
Other_Citation_Details: UNPUBLISHED
Type_of_Source_Media: PERSONAL COMMUNICATION

Northern California ESI: REPTILES (Reptile and Amphibian Polygons)
Process Step:

Process Description:

Three main sources of data were used to depict reptile/amphibian distribution and seasonality for this data layer: 1) personal interviews with resource experts from the National Oceanic and Atmospheric Administration (NOAA), 2) published reports, and 3) the California Natural Diversity Database (CNDDB) provided by the California Dept. of Fish and Game (CDF&G).

The above digital and/or hardcopy sources were compiled by the project biologist to create the REPTILES data layer. Depending on the type of source data, three general approaches are used for compiling a biology data layer: 1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles and digitized; 2) hardcopy maps are digitized at their source scale; and/or 3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer. The compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. If necessary, edits to the REPTILES data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.

Process Date: 200812
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: 6588

SDTS Terms Description:
SDTS Point and Vector Object Type: Area point
Point and Vector Object Count: 6587

SDTS Terms Description:
SDTS Point and Vector Object Type: Complete chain
Point and Vector Object Count: 6833

SDTS Terms Description:
SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 193618

SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 6812

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

Geodetic_Model:
  Horizontal_Datum_Name: North American Datum of 1927
  Ellipsoid_Name: Clark 1866
  Semi-major_Axis: 6378206.400000
  Denominator_of_Flattening_Ratio: 294.978698

Entity_and_Attribute_Information:
Overview_Description:
Entity_and_Attribute_Overview:
  In addition to the geographic data layers, six relational attribute or data tables, BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS, are used to store the complex biological data in the ESI data structure. The geographic data layer containing biological resource information (in this case, REPTILES) is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or it can be linked directly using RARNUM. The ID is a unique combination of the atlas number (for the Northern California atlas, the number is 207), an element/layer specific number (BIRDS are layer 1, FISH are layer 2, etc.), and a unique record number. The RARNUM represents a unique combination of species, seasonalities, concentrations, and source information. For each of these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases. BIORES and the other relational data tables are described below in detail. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way these tables relate to the geographic data layers and other attribute tables in the ESI data structure.

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

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

**Detailed_Description:**

**Entity_Type:**

**Entity_Type_Label:** REPTILES.PAT

**Entity_Type_Definition:**

The REPTILES.PAT table contains attribute information for the vector polygons in this data set representing reptile and amphibian distribution. Note that all attribute information is stored in a series of relational files, described below. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the relationships between attribute tables in the ESI data structure.

**Entity_Type_Definition_Source:** Research Planning, Inc.

**Attribute:**

**Attribute_Label:** ID

**Attribute_Definition:**

An identifier that links vector objects in the biology data layers to records in the BIO_LUT data table. ID is a concatenation of atlas number (207), element number (6), and record number. ID values of 9999 are holes in polygons and do not contain information.

**Attribute_Definition_Source:** NOAA

**Attribute_Domain_Values:**

**Range_Domain:**

- **Range_Domain_Minimum:** 2070600114
- **Range_Domain_Maximum:** 2070706503

**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:** 207001097
- **Range_Domain_Maximum:** 207001104

**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: 207000001
  Range_Domain_Maximum: 207001115

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 (207), element number (6), and record number. ID values of 9999 are holes in polygons and do not contain information.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:
Range_Domain:
  Range_Domain_Minimum: 2070100002
  Range_Domain_Maximum: 2072200500

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: 207000001
  Range_Domain_Maximum: 207001115

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

**Attribute:**
**Attribute_Label:** CONC
**Attribute_Definition:**
The field CONC refers to "concentration," abundance, or density values of a species at a particular location. No quantitative count data were available, so the field may contain descriptive terms such as "HIGH" or "VERY LOW". If no concentration information was available from any source, 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: amphibian
  Enumerated_Domain_Value_Definition: Amphibian
  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: dolphin
Enumerated_Domain_Value_Definition: Dolphin
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: e_resident
Enumerated_Domain_Value_Definition: Estuarine resident
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: freshwater
Enumerated_Domain_Value_Definition: Freshwater fish
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: gastropod
Enumerated_Domain_Value_Definition: Gastropod
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: gull_tern
Enumerated_Domain_Value_Definition: Gull or tern
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: insect
Enumerated_Domain_Value_Definition: Insect
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: 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: passerine
    Enumerated_Domain_Value_Definition: Passerine bird
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: pelagic
    Enumerated_Domain_Value_Definition: Pelagic bird
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: pinniped
    Enumerated_Domain_Value_Definition: Pinniped
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: plant
    Enumerated_Domain_Value_Definition: Plant
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: raptor
    Enumerated_Domain_Value_Definition: Raptor
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: sav
    Enumerated_Domain_Value_Definition: Submerged aquatic vegetation
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: 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: sm_mammal
Enumerated Domain Value Definition: Small mammal
Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: turtle
Enumerated Domain Value Definition: Turtle
Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: unglulate
Enumerated Domain Value Definition: Ungulate
Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: wading
Enumerated Domain Value Definition: Wading bird
Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: waterfowl
Enumerated Domain Value Definition: Waterfowl
Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: whale
Enumerated Domain Value Definition: Whale
Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute:
Attribute Label: NHP
Attribute Definition: Natural Heritage Program global ranking.
Attribute Definition Source: Network of Natural Heritage Program
Attribute Domain Values:
Codeset Domain:
Codeset Name: NHP Global Conservation Status Rank
Codeset Source: Natural Heritage Program

Attribute:
Attribute Label: DATE_PUB
Attribute Definition: Date of NHP listing.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
Enumerated Domain:
Enumerated_Domain_Value: YYYYMM
Enumerated_Domain_Value_Definition: YYYY for year and optionally MM for month
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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

Attribute:
Attribute_Label: EL_SPE
Attribute_Definition:
Concatenation of ELEMENT and SPECIES_ID. This item links records in the SPECIES data table to records in the BIORES and STATUS data tables.
Attribute_Definition_Source: Research Planning, Inc.

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

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

Attribute:
Attribute_Label: ELEMENT
Attribute_Definition: Major categories of biological data.
Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: BIRD
Enumerated_Domain_Value_Definition: Birds
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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

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

Attribute_Domain_Values:
Enumerated Domain:
  Enumerated Domain Value: INVERT
  Enumerated Domain Value Definition: Invertebrates
  Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value: M_MAMMAL
    Enumerated Domain Value Definition: Marine Mammals
    Enumerated Domain Value Definition Source: Research Planning, Inc.
  Enumerated Domain:
    Enumerated Domain Value: REPTILE
    Enumerated Domain Value Definition: Reptiles and Amphibians
    Enumerated Domain Value Definition Source: Research Planning, Inc.
  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.
<table>
<thead>
<tr>
<th>Attribute</th>
<th>Attribute Label</th>
<th>Attribute Definition</th>
<th>Attribute Definition Source</th>
<th>Attribute Domain Values</th>
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<td>MAR</td>
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<tr>
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<td>APR</td>
<td>April</td>
<td>Research Planning, Inc.</td>
<td>X</td>
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<td></td>
<td>MAY</td>
<td>May</td>
<td>Research Planning, Inc.</td>
<td>X</td>
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<tr>
<td></td>
<td>JUN</td>
<td>June</td>
<td>Research Planning, Inc.</td>
<td>X</td>
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<tr>
<td></td>
<td>JUL</td>
<td>July</td>
<td>Research Planning, Inc.</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>AUG</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Attribute_Definition: August
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
    Enumerated_Domain:
        Enumerated_Domain_Value: X
        Enumerated_Domain_Value_Definition: Present in August
        Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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

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

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

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

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

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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

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

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

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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

Attribute_Domain_Values:
Range_Domain:
  Range_Domain_Minimum: 1
  Range_Domain_Maximum: 12

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

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

Enumerated Domain:
- Enumerated Domain Value: N
  Enumerated Domain Value Definition: Life-history stage or activity not present or not reported
  Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:

Enumerated Domain:
- Enumerated Domain Value: -
  Enumerated Domain Value Definition: Breed category not used or not appropriate for record(s) in question
  Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute:

Attribute Label: BREED2

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

Attribute Definition Source: Research Planning, Inc.

Attribute Domain Values:

Enumerated Domain:
- Enumerated Domain Value: Y
  Enumerated Domain Value Definition: Life-history stage or activity present
  Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:

Enumerated Domain:
- Enumerated Domain Value: N
  Enumerated Domain Value Definition: Life-history stage or activity not present or not reported
  Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:

Enumerated Domain:
- Enumerated Domain Value: -
  Enumerated Domain Value Definition: Breed category not used or not appropriate for record(s) in question
  Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute:

Attribute Label: BREED3

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

Attribute Definition Source: Research Planning, Inc.

Attribute Domain Values:

Enumerated Domain:
- Enumerated Domain Value: Y
  Enumerated Domain Value Definition: Life-history stage or activity present
  Enumerated Domain Value Definition Source: Research Planning, Inc.
Attribute_Domain_Values:

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

Attribute_Domain_Values:

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

Attribute_Domain_Values:
**Enumerated Domain:**

- **Enumerated Domain Value:** N
- **Enumerated Domain Value Definition:** Life-history stage or activity not present or not reported
- **Enumerated Domain Value Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

- **Enumerated Domain:**
  - **Enumerated Domain Value:** -
  - **Enumerated Domain Value Definition:** Breed category not used or not appropriate for record(s) in question
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

**Detailed Description:**

**Entity Type:**

- **Entity Type Label:** SOURCES
- **Entity Type Definition:**

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

- **Entity Type Definition Source:** Research Planning, Inc.

**Attribute:**

- **Attribute Label:** SOURCE_ID
- **Attribute Definition:** Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; and SOURCE_ID in the ESI and HYDRO data layers.
- **Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

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

**Attribute:**

- **Attribute Label:** ORIGINATOR
- **Attribute Definition:** Author or developer of source material or data set.
- **Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

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

**Attribute:**

- **Attribute Label:** DATE_PUB
- **Attribute Definition:** Date of source material, publication, or date of personal communication with expert source.
- **Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

- **Enumerated Domain:**
  - **Enumerated Domain Value:** YYYYMM
  - **Enumerated Domain Value Definition:** YYYY for year and optionally MM for month
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

**Attribute:**

- **Attribute Label:** TITLE
- **Attribute Definition:** Title of source material or data.
- **Attribute Definition Source:** Research Planning, Inc.
Attribute Domain Values:

Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute Label: DATA_FORMAT
Attribute Definition: The format of the source material.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:

Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute Label: PUBLICATION
Attribute Definition: Additional citation information.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:

Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute Label: SCALE
Attribute Definition: Description of the source scale.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:

Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:

Attribute Label: TIME_PERIOD
Attribute Definition: Date(s) of data collection that the source material is based upon.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:

Unrepresentable Domain: Acceptable values change from atlas to atlas.

Detailed Description:

Entity Type:

Entity Type Label: STATUS
Entity Type Definition:

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

Entity Type Definition Source: Research Planning, Inc.

Attribute:

Attribute Label: ELEMENT
Attribute Definition: Major categories of biological data.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: BIRD
Enumerated Domain Value Definition: Birds
Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: FISH
Enumerated Domain Value Definition: Fish
Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:

Enumerated Domain:
Enumerated_Domain_Value: HABITAT
Enumerated_Domain_Value_Definition: Habitats and Plants
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

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

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

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

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

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

Attribute 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

Attribute 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

Attribute 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').

Attribute Definition Source: Research Planning, Inc.

Distribution Information:
Distributor: Northern California ESI: REPTILES (Reptile and Amphibian Polygons)
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 Northern California

Distribution Liability:
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration (NOAA), 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 the widest community of GIS/mapping users. Distribution formats include Access Personal Geodatabase, ARC export files, Shape files, and MARPLOT map folders. An ArcMap .mxd file, an ArcView 3.x ESI project, and an ESI_Viewer product for use with the MARPLOT data are also included on the distribution CDs/DVDs 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: 200902
Metadata Review Date: 200902
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
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: M_MAMMAL (Marine Mammal Polygons)

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

Metadata:

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

Identification Information:

Citation:

Originator:

Publication Date: 200812

Title:
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: M_MAMMAL (Marine Mammal Polygons)

Edition: Second

Geospatial Data Presentation Form: Vector digital data

Series Information:

Series Name: None

Issue Identification: Northern California

Publication Information:

Publication Place: Seattle, Washington

Publisher:

Other Citation Details:

Materials Response Division), Seattle, Washington and Assessment and Restoration Division, Silver Spring, Maryland; Department of Homeland Security, U.S. Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.; and Department of Fish and Game, Office of Spill Prevention and Response, Sacramento, California.

Description:

Abstract:

This data set contains sensitive biological resource data for seals, whales, dolphins, porpoises, sea otters, and sea lions in Northern California. Vector polygons in this data set represent marine mammal distribution, haul-out sites, and rookeries. 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 Northern California. ESI data characterize the marine and coastal environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources.

Purpose:

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

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1998
Ending_Date: 2007

Currentness_Reference:

The biological data were compiled during 2007. The currentness dates for the data range from 1998 to 2007 and are documented in the Lineage section.

Status:

Progress: Complete
Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -124.45800
East_Bounding_Coordinate: -122.75000
North_Bounding_Coordinate: 37.97900
South_Bounding_Coordinate: 42.00000

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 Mammal

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: Northern California
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 Northern California ESI data.
Browse Graphic File Type: JPEG

Data Set Credit:
This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Emergency Response Division (formerly Hazardous Materials Response Division), Seattle, Washington and Assessment and Restoration Division, Silver Spring, Maryland; Department of Homeland Security, U.S. Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.; and Department of Fish and Game, Office of Spill Prevention and Response, Sacramento, California.

Native Data Set Environment:
The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO® (version 9.2) and SQL SERVER® (version 2000). The hardware configuration is PCs 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, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammap.e00, mgt.e00, nests.e00, reptiles.e00, soc econ.e00, t_mammap.e00. Associated relational and desktop data tables provided in ARC export and text format are bio_lut, biofile, biore, 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® to ARC/INFO® consistencies. A final review is made by the GIS manager, where the data are written to CD or DVD, 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 IDs and RARNUMs or HUNUMs are also generated. The new IDs 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 RARNUMs are also modified to include the atlas number, so multiple atlases can be combined and RARNUMs remain unique. RARNUMs are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUMs are also modified to include the atlas number.

**Completeness_Report:**

**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:** ALLEN, S. (NPS, POINT REYES)

**Publication_Date:** 2005
Source_Contribution: M_MAMMAL INFORMATION
Source_Citation:
Citation_Information:
  Originator: CALIFORNIA DEPT. OF FISH & GAME (CDF&G) STAFF
  Publication_Date: 2007
  Title: MARINE SPORTFISH AND OTHER MARINE RESOURCES
  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: 2007
  Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: M_MAMMAL INFORMATION
Source_Citation:
Citation_Information:
  Originator: CDF&G, USCG
  Publication_Date: 2005
  Title:
    SAN FRANCISCO GEOGRAPHIC RESPONSE AREA 1 SONOMA AND NORTH MARIN COAST
  Geospatial_Data_Presentation_Form: HARDCOPY TEXT
  Other_Citation_Details: ACP 2 SF BAY & DELTA - GRA 1
Type_of_Source_Media: DISC
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: M_MAMMAL INFORMATION
Source_Citation:
Citation_Information:
  Originator: FORNEY, K. (NMFS, MOSS LANDING)
  Publication_Date: 2006
  Title:
    MARINE MAMMAL DISTRIBUTION AND SEASONALITY IN NORTHERN CALIFORNIA
  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_MAMMAL INFORMATION

Source_Citation:

Citation_Information:
    Originator: HARRIS, JAY (CSP, EUREKA)
    Publication_Date: 2007
    Title: CALIFORNIA STATE PARK RESOURCES
    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: 2007
    Source_Currentness_Reference: DATE OF COMMUNICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: M_MAMMAL INFORMATION

Source_Citation:

Citation_Information:
    Originator: LEVALLEY, R. (MAD RIVER BIOLOGISTS, ARCATA)
    Publication_Date: 2007
    Title:
        COASTAL RESOURCE DISTRIBUTION AND SEASONALITY IN NORTHERN CALIFORNIA
    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: 2007
    Source_Currentness_Reference: DATE OF COMMUNICATION
    Source_Citation_Abbreviation: NONE
    Source_Contribution: M_MAMMAL INFORMATION

Source_Citation:

Citation_Information:
    Originator: LOWRY, M. (NMFS, LA JOLLA)
    Publication_Date: 2007
    Title:
        PACIFIC HARBOR SEAL, CALIFORNIA SEA LION, AND STELLER SEA LION HAUL OUT SITES IN NORTHERN CALIFORNIA
    Geospatial_Data_Presentation_Form: SPREADSHEET
    Other_Citation_Details: UNPUBLISHED

Type_of_Source_Media: EMAIL

Source_Time_Period_of_Content:
    Time_Period_Information:
        Range_of_Dates/Times:
            Beginning_Date: 1998
            Ending_Date: 2005
    Source_Currentness_Reference: DATE OF SURVEY
Source Currentness Reference: DATE OF COMMUNICATION
Source Citation Abbreviation: NONE
Source Contribution: M_MAMMAL INFORMATION
Source Information:
Citation Information:
  Originator: ROBERTS, E. (CDF&G, EUREKA)
  Publication Date: 2007
  Title: MARINE RESOURCE DISTRIBUTION AND SEASONALITY
  Geospatial Data Presentation Form: EXPERT KNOWLEDGE
  Other Citation Details: UNPUBLISHED
Type of Source Media: PERSONAL COMMUNICATION
Source Time Period of Content:
  Time Period Information:
    Single Date/Time:
      Calendar Date: 2007
Source Currentness Reference: DATE OF COMMUNICATION
Source Citation Abbreviation: NONE
Source Contribution: M_MAMMAL INFORMATION
Source Information:
Citation Information:
  Originator: TINKER, T (UCSC, LONG MARINE LAB)
  Publication Date: 2005
  Geospatial Data Presentation Form: VECTOR DIGITAL DATA
  Other Citation Details: UNPUBLISHED
Type of Source Media: EMAIL
Source Time Period of Content:
  Time Period Information:
    Range of Dates/Times:
      Beginning Date: 2003
      Ending Date: 2005
Source Currentness Reference: DATE OF SURVEY
Source Citation Abbreviation: NONE
Source Contribution: M_MAMMAL INFORMATION
Source Information:
Citation Information:
  Originator: U.S. COAST GUARD (USCG) SECTOR SAN FRANCISCO
  Publication Date: 2005
  Title: 2005 SECTOR SAN FRANCISCO-ACP 1 NORTH COAST: DEL NORTE COUNTY SECTION 9811
  Geospatial Data Presentation Form: HARDCOPY TEXT
  Other Citation Details: USCG SECTOR SAN FRANCISCO, OCTOBER 1, 2005
Source Scale Denominator: VARIES
Type of Source Media: ONLINE
Source Time Period of Content:
  Time Period Information:
    Single Date/Time:
Three main sources of data were used to depict marine mammal distribution and seasonality for this data layer: 1) personal interviews with resource experts from National Park Service (NPS), California Department of Fish & Game (CDF&G), NOAA National Marine Fisheries Service (NMFS), and Mad River Biologists; 2) numerous published reports and maps; and 3) survey data for seal and sea lion haul outs provided by NMFS.

The above digital and/or hardcopy sources were compiled by the project biologist to create the M_MAMMAL data layer. Depending on the type of source data, three general approaches are used for compiling a biology data layer: 1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles and digitized; 2) hardcopy maps are digitized at their source scale; and/or 3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer. The compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. If necessary, edits to the M_MAMMAL data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.
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: 6811
SDTS_Terms_Description:
  SDTS_Point_and_Vector_Object_Type: Area point
  Point_and_Vector_Object_Count: 6810
SDTS_Terms_Description:
  SDTS_Point_and_Vector_Object_Type: Complete chain
  Point_and_Vector_Object_Count: 7311
SDTS_Terms_Description:
  SDTS_Point_and_Vector_Object_Type: Link
  Point_and_Vector_Object_Count: 263191
SDTS_Terms_Description:
  SDTS_Point_and_Vector_Object_Type: Node, planar graph
  Point_and_Vector_Object_Count: 7113

Spatial_Reference_Information:
Horizontal_Coordinate_System_Definition:
Geographic:
  Latitude_Resolution: 0.0000001
  Longitude_Resolution: 0.0000001
  Geographic_Coordinate_Units: Decimal degrees
Geodetic_Model:
  Horizontal_Datum_Name: North American Datum of 1927
  Ellipsoid_Name: Clark 1866
  Semi-major_Axis: 6378206.400000
  Denominator_of_Flattening_Ratio: 294.978698

Entity_and_Attribute_Information:
Overview_Description:
  Entity_and_Attribute_Overview:
In addition to the geographic data layers, six relational attribute or data tables, BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS, are used to store the complex biological data in the ESI data structure. The geographic data layer containing biological resource information (in this case, M_MAMMAL) is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or it can be linked directly using RARNUM. The ID is a unique combination of the atlas number (for the Northern California atlas, the number is 207), an element/layer specific number (BIRDS are layer 1,
FISH are layer 2, etc.), and a unique record number. The RARNUM represents a unique combination of species, seasonalities, concentrations, and source information. For each of these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases. BIORES and the other relational data tables are described below in detail. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the way these tables relate to the geographic data layers and other attribute tables in the ESI data structure.

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

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

**Detailed_Description:**

**Entity_Type:**

**Entity_Type_Label:** M_MAMMAL.PAT

**Entity_Type_Definition:**

The M_MAMMAL.PAT table contains attribute information for the vector polygons in this data set representing marine mammal distribution, haul-out sites, and rookeries. 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 (207), element number (4), and record number. ID values of 9999 are holes in polygons and do not contain information.

**Attribute_Definition_Source:** NOAA
Attribute Domain Values:
  Range Domain:
    Range Domain Minimum: 2070400002
    Range Domain Maximum: 2070406812

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: 207000835
      Range Domain Maximum: 207041096

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: 207000001
      Range Domain Maximum: 207001115

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 (207), element number (4), and record number. ID values of 9999 are holes in polygons and do not contain information.
  Attribute Definition Source: NOAA
  Attribute Domain Values:
    Range Domain:
      Range Domain Minimum: 2070100002
      Range Domain Maximum: 2072200500

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: 207000001 Range_Domain_Maximum: 207001115

Attribute:

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

Attribute:

Attribute_Label: CONC
Attribute_Definition: The field CONC refers to "concentration," abundance, or density values. The field may contain counts of individual marine mammals (XX INDIV) or a range of peak counts of individuals (XX-XX INDIV). If no quantitative count data were available, the field may contain descriptive terms such as "HIGH" or "RARE". If no concentration information was available from any source, the CONC field is populated with ".-". Counts were derived from a variety of surveys, and may range in date.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values: Unrepresentable_Domain: Acceptable values change from atlas to atlas.

Attribute:

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

Attribute:

Attribute_Label: G_SOURCE
Attribute_Definition: Geographic source identifier that links records in the BIORES data table to records in the SOURCES data table.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Range_Domain:
    Range_Domain_Minimum: 1
    Range_Domain_Maximum: \(\text{N}\)

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: \(\text{N}\)

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.
    Enumerated_Domain_Value:
    Enumerated_Domain_Value: FISH
    Enumerated_Domain_Value_Definition: Fish
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Enumerated_Domain_Value:
    Enumerated_Domain_Value: HABITAT
    Enumerated_Domain_Value_Definition: Habitats and Plants
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Enumerated_Domain_Value:
    Enumerated_Domain_Value: INVERT
    Enumerated_Domain_Value_Definition: Invertebrates
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Enumerated_Domain_Value:
    Enumerated_Domain_Value: M_MAMMAL
    Enumerated_Domain_Value_Definition: Marine Mammals
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Enumerated_Domain_Value:
    Enumerated_Domain_Value: REPTILE
    Enumerated_Domain_Value_Definition: Reptiles and Amphibians
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
    Enumerated_Domain_Value:
    Enumerated_Domain_Value: T_MAMMAL
**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 = 'B00000101').

**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.
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.
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.
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: amphibian
    Enumerated_Domain_Value_Definition: Amphibian
    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: dolphin
    Enumerated_Domain_Value_Definition: Dolphin
    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.
Enumerated Domain:
  Enumerated Domain Value: e_resident
  Enumerated Domain Value Definition: Estuarine resident
  Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value: freshwater
    Enumerated Domain Value Definition: Freshwater fish
    Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value: gastropod
    Enumerated Domain Value Definition: Gastropod
    Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value: gull_tern
    Enumerated Domain Value Definition: Gull or tern
    Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value: insect
    Enumerated Domain Value Definition: Insect
    Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value: 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: passerine
    Enumerated Domain Value Definition: Passerine bird
    Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value: pelagic
    Enumerated Domain Value Definition: Pelagic bird
    Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value: pinniped
Enumerated_Domain_Value_Definition: Pinniped
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: plant
Enumerated_Domain_Value_Definition: Plant
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: raptor
Enumerated_Domain_Value_Definition: Raptor
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: sav
Enumerated_Domain_Value_Definition: Submerged aquatic vegetation
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 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: sm mammal
Enumerated_Domain_Value_Definition: Small mammal
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: turtle
Enumerated_Domain_Value_Definition: Turtle
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: ungulate
Enumerated_Domain_Value_Definition: Ungulate
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: wading
Enumerated_Domain_Value_Definition: Wading bird
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
- Enumerated_Domain:
  - Enumerated_Domain_Value: waterfowl
  - Enumerated_Domain_Value_Definition: Waterfowl
  - Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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

Attribute:
- Attribute_Label: NHP
- Attribute_Definition: Natural Heritage Program global ranking.
- Attribute_Definition_Source: Network of Natural Heritage Program
- Attribute_Domain_Values:
  - Codeset_Domain:
    - Codeset_Name: NHP Global Conservation Status Rank
    - Codeset_Source: Natural Heritage Program

Attribute:
- Attribute_Label: DATE_PUB
- Attribute_Definition: Date of NHP listing.
- Attribute_Definition_Source: Research Planning, Inc.
- Attribute_Domain_Values:
  - Enumerated_Domain:
    - Enumerated_Domain_Value: YYYYMM
    - Enumerated_Domain_Value_Definition: YYYY for year and optionally MM for month
    - Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute:
- 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.
    - **Enumerated Domain:**
      - **Enumerated Domain Value:** FISH
        - **Enumerated Domain Value Definition:** Fish
        - **Enumerated Domain Value Definition Source:** Research Planning, Inc.
    - **Enumerated Domain:**
      - **Enumerated Domain Value:** HABITAT
        - **Enumerated Domain Value Definition:** Habitats and Plants
        - **Enumerated Domain Value Definition Source:** Research Planning, Inc.
    - **Enumerated Domain:**
      - **Enumerated Domain Value:** INVERT
        - **Enumerated Domain Value Definition:** Invertebrates
        - **Enumerated Domain Value Definition Source:** Research Planning, Inc.
    - **Enumerated Domain:**
      - **Enumerated Domain Value:** M_MAMMAL
        - **Enumerated Domain Value Definition:** Marine Mammals
        - **Enumerated Domain Value Definition Source:** Research Planning, Inc.
    - **Enumerated Domain:**
      - **Enumerated Domain Value:** REPTILE
        - **Enumerated Domain Value Definition:** Reptiles and Amphibians
        - **Enumerated Domain Value Definition Source:** Research Planning, Inc.
    - **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
<table>
<thead>
<tr>
<th>Attribute Label</th>
<th>Attribute Definition</th>
<th>Attribute Definition Source</th>
<th>Attribute Domain Values</th>
</tr>
</thead>
</table>
| SEASON_ID       | Numeric identifier for the unique monthly presence and life history characteristics of each species at a given location. | Research Planning, Inc. | Range Domain:  
|                 |                      |                            | Range Domain Minimum: 1  
|                 |                      |                            | Range Domain Maximum: N |
| JAN             | January              | Research Planning, Inc.     | Enumerated Domain:  
|                 |                      |                            | Enumerated Domain Value: X  
|                 |                      |                            | Enumerated Domain Value Definition: Present in January |
|                 |                      |                            | Enumerated Domain Value Definition Source: Research Planning, Inc. |
| FEB             | February             | Research Planning, Inc.     | Enumerated Domain:  
|                 |                      |                            | Enumerated Domain Value: X  
|                 |                      |                            | Enumerated Domain Value Definition: Present in February |
|                 |                      |                            | Enumerated Domain Value Definition Source: Research Planning, Inc. |
| MAR             | March                | Research Planning, Inc.     | Enumerated Domain:  
|                 |                      |                            | Enumerated Domain Value: X  
|                 |                      |                            | Enumerated Domain Value Definition: Present in March |
|                 |                      |                            | Enumerated Domain Value Definition Source: Research Planning, Inc. |
| APR             | April                | Research Planning, Inc.     | Enumerated Domain:  
|                 |                      |                            | Enumerated Domain Value: X  
|                 |                      |                            | Enumerated Domain Value Definition: Present in April |
|                 |                      |                            | Enumerated Domain Value Definition Source: Research Planning, Inc. |
| MAY             | May                  | Research Planning, Inc.     | Enumerated Domain:  
|                 |                      |                            | Enumerated Domain Value: X  
|                 |                      |                            | Enumerated Domain Value Definition Source: Research Planning, Inc. |
Enumerated_Domain:
  Enumerated_Domain_Value: X  
  Enumerated_Domain_Value_Definition: Present in May
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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

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

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

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

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

Attribute:
  Attribute_Label: NOV
  Attribute_Definition: November
**Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

**Enumerated Domain:**

- **Enumerated Domain Value:** X
  - **Enumerated Domain Value Definition:** Present in November
    - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

**Attribute:**

- **Attribute Label:** DEC
  - **Attribute Definition:** December
    - **Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

**Enumerated Domain:**

- **Enumerated Domain Value:** X
  - **Enumerated Domain Value Definition:** Present in December
    - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

**Attribute:**

- **Attribute Label:** EL_SPE_SEA
  - **Attribute Definition:** Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the SEASONAL data table to records in the BIORES and BREED data tables.
    - **Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

**Enumerated Domain:**

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

**Detailed Description:**

**Entity Type:**

- **Entity Type Label:** BREED
  - **Entity Type Definition:**
    The data table BREED identifies the monthly presence of certain life-history stages or activities for each species at a given location.
    - **Entity Type Definition Source:** Research Planning, Inc.

**Attribute:**

- **Attribute Label:** EL_SPE_SEA
  - **Attribute Definition:** Concatenation of ELEMENT, SPECIES_ID, and SEASON_ID. This item links records in the BREED data table to records in the BIORES and SEASONAL data tables.
    - **Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

**Enumerated Domain:**

- **Enumerated Domain Value:** E############
  - **Enumerated Domain Value Definition:**
    Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').
    - **Enumerated Domain Value Definition Source:** Research Planning, Inc.
Attribute:
  Attribute_Label: MONTH
  Attribute_Definition:
  Two-digit calendar month. Each life history stage or activity type for a particular species can have up to 12 records to account for each month of the year.
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Range_Domain:
    Range_Domain_Minimum: 1
    Range_Domain_Maximum: 12

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

Attribute:
  Attribute_Label: BREED2
  Attribute_Definition:
  Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED2 = migrating; if ELEMENT is "FISH" then BREED2 = eggs; if ELEMENT is "INVERT" then BREED2 = eggs; if ELEMENT is "REPTILE" then BREED2 = hatching; if ELEMENT is "M_MAMMAL" then BREED2 = calving. This attribute is not used for HABITAT or T_MAMMAL elements.
  Attribute_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:
    Enumerated_Domain_Value: Y
    Enumerated_Domain_Value_Definition: Life-history stage or activity present
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
  Attribute_Domain_Values:
    Enumerated_Domain:
Enumerated Domain Value: N
Enumerated Domain Value Definition: Life-history stage or activity not present or not reported
Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: -
Enumerated Domain Value Definition: Breed category not used or not appropriate for record(s) in question
Enumerated Domain Value Definition Source: Research Planning, Inc.

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

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: Y
Enumerated Domain Value Definition: Life-history stage or activity present
Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: N
Enumerated Domain Value Definition: Life-history stage or activity not present or not reported
Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: -
Enumerated Domain Value Definition: Breed category not used or not appropriate for record(s) in question
Enumerated Domain Value Definition Source: Research Planning, Inc.

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

Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: Y
Enumerated Domain Value Definition: Life-history stage or activity present
Enumerated Domain Value Definition Source: Research Planning, Inc.

Attribute Domain Values:
Enumerated Domain:
Enumerated_Domain_Value: N
Enumerated_Domain_Value_Definition: Life-history stage or activity not present or not reported
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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

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

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

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

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

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

Attribute:
  Attribute_Label: SOURCE_ID
  Attribute_Definition: Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; and SOURCE_ID in the ESI and HYDRO data layers.
  Attribute_Definition_Source: Research Planning, Inc.
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.
      Enumerated_Domain:
         Enumerated_Domain_Value: FISH
         Enumerated_Domain_Value_Definition: Fish
         Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
      Enumerated_Domain:
         Enumerated_Domain_Value: HABITAT
         Enumerated_Domain_Value_Definition: Habitats and Plants
         Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
      Enumerated_Domain:
         Enumerated_Domain_Value: INVERT
         Enumerated_Domain_Value_Definition: Invertebrates
         Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
      Enumerated_Domain:
         Enumerated_Domain_Value: M_MAMMAL
         Enumerated_Domain_Value_Definition: Marine Mammals
         Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
      Enumerated_Domain:
         Enumerated_Domain_Value: REPTILE
         Enumerated_Domain_Value_Definition: Reptiles and Amphibians
         Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
      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: 
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 Northern California

Distribution Liability:

Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration (NOAA), 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 the widest community of GIS/mapping users. Distribution formats include Access Personal Geodatabase, ARC export files, Shape files, and MARPLOT map folders. An ArcMap .mxd file, an ArcView 3.x ESI project, and an ESI_Viewer product for use with the MARPLOT data are also included on the distribution CDs/DVDs 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.
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: T_MAMMAL (Terrestrial Mammal Polygons)

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

Metadata:

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

Identification_Information:

Citation:

Originator:

Publication_Date: 200812

Title:
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: T_MAMMAL (Terrestrial Mammal Polygons)

Edition: Second

Geospatial_Data_Presentation_Form: Vector digital data

Series_Information:

Series_Name: None
Issue_Identification: Northern California

Publication_Information:

Publication_Place: Seattle, Washington

Publisher:

Other_Citation_Details:
Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Emergency Response Division (formerly Hazardous...
Northern California ESI: T_MAMMAL (Terrestrial Mammal Polygons)

Description:

Abstract:

This data set contains sensitive biological resource data for small mammals and elk in Northern California. Vector polygons in this data set represent terrestrial mammal distribution. Species-specific abundance, seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer.

This data set comprises a portion of the Environmental Sensitivity Index (ESI) data for Northern California. ESI data characterize the marine and coastal environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources.

Purpose:

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

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1998
Ending_Date: 2007

Currentness_Reference:

The biological data were compiled during 2007. The currentness dates for the data range from 1998 to 2007 and are documented in the Lineage section.

Status:

Progress: Complete

Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_BoundingCoordinate: -124.45800
East_BoundingCoordinate: -122.75000
North_BoundingCoordinate: 37.97900
South_BoundingCoordinate: 42.00000

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: Terrestrial Mammal

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: Northern California
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 Northern California ESI data.
Browse_Graphic_File_Type: JPEG

Data_Set_Credit:

This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Emergency Response Division (formerly Hazardous Materials Response Division), Seattle, Washington and Assessment and Restoration Division, Silver Spring, Maryland; Department of Homeland Security, U.S. Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.; and Department of Fish and Game, Office of Spill Prevention and Response, Sacramento, California.

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO® (version 9.2) and SQL SERVER® (version 2000). The hardware configuration is PCs 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, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, socecon.e00, t_mammal.e00. Associated relational and desktop data tables provided in ARC export and text format are bio_lut, biofile, bioreis, 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® to ARC/INFO® consistencies. A final review is made by the GIS manager, where the data are written to CD or DVD, 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 IDs and RARNUMs or HUNUMs are also generated. The new IDs 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 RARNUMs are also modified to include the atlas number, so multiple atlases can be combined and RARNUMs remain unique. RARNUMs are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUMs are also modified to include the atlas number.

Completeness_Report:
These data represent a synthesis of expert knowledge, hardcopy reports, and digital data on terrestrial mammal distribution. These data do not necessarily represent all terrestrial mammal occurrences in Northern California. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 8, Northern river otter, Lontra canadensis; 35, Roosevelt elk, Cervus elaphus roosevelti; 36, Beaver, Castor canadensis; 37, Muskrat, Ondatra zibethicus; 261, Point Reyes jumping mouse, Zapus trinotatus orarius; 262, Point Arena mountain beaver, Aplodontia rufa nigra.

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: ALLEN, S. (NATIONAL PARK SERVICE, POINT REYES)
Publication_Date: 2005
Title: DISTRIBUTION AND SEASONALITY OF SPECIES AND SOC_ECON FEATURES ON NPS LANDS
Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
Other_Citation_Details: UNPUBLISHED
NORTH MARIN COAST

Geospatial Data Presentation Form: HARDCOPY TEXT
Other Citation Details: ACP 2 SF BAY & DELTA - GRA 1

Type of Source Media: DISC
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: T_MAMMAL INFORMATION

Source Information:
Source Citation:
Citation Information:
Originator: DAYTON, J. (CDF&G)
Publication Date: 2007
Title: FISH, WILDLIFE, AND HABITAT DISTRIBUTION IN NORTHERN CALIFORNIA
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: 2007
Source Currentness Reference: DATE OF COMMUNICATION
Source Citation Abbreviation: NONE
Source Contribution: T_MAMMAL INFORMATION

Source Information:
Source Citation:
Citation Information:
Originator: DEUEL, B. (CDF&G, REDDING)
Publication Date: 2007
Title: BIRD AND MAMMAL DISTRIBUTION AND SEASONALITY IN NORTHERN CALIFORNIA
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: 2007
Source Currentness Reference: DATE OF COMMUNICATION
Source Citation Abbreviation: NONE
Source Contribution: T_MAMMAL INFORMATION

Source Information:
Source Citation:
Citation Information:
Originator: HARRIS, JAY (CSP, EUREKA)
Publication Date: 2007
Title: CALIFORNIA STATE PARK RESOURCES
Three main sources of data were used to depict terrestrial mammal distribution and seasonality for this data layer: 1) personal interviews with resource experts from California Department of Fish & Game (CDF&G), California State Parks (CSP), and National Park Service (NPS); 2) published reports; and 3) the California Natural Diversity Database (CNDDB) provided by CDF&G.

The above digital and/or hardcopy sources were compiled by the project biologist to create the T_MAMMAL data layer. Depending on the type of source data, three general approaches are used for compiling a biology data layer: 1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles and digitized; 2) hardcopy maps are digitized at their source scale; and/or 3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer. The compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. If necessary, edits to the T_MAMMAL data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.

Publication_Date: 2005
Title: 2005 SECTOR SAN FRANCISCO-ACP 1 NORTH COAST: DEL NORTE COUNTY SECTION 9811
Geospatial_Data_Presentation_Form: HARDCOPY TEXT
Other_Citation_Details: USCG SECTOR SAN FRANCISCO, OCTOBER 1, 2005
Source_Scale_Denominator: VARIES
Type_of_Source_Media: ONLINE
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: T_MAMMAL INFORMATION
Process_Step:
Process_Description:
  Three main sources of data were used to depict terrestrial mammal distribution and seasonality for this data layer: 1) personal interviews with resource experts from California Department of Fish & Game (CDF&G), California State Parks (CSP), and National Park Service (NPS); 2) published reports; and 3) the California Natural Diversity Database (CNDDB) provided by CDF&G.

The above digital and/or hardcopy sources were compiled by the project biologist to create the T_MAMMAL data layer. Depending on the type of source data, three general approaches are used for compiling a biology data layer: 1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles and digitized; 2) hardcopy maps are digitized at their source scale; and/or 3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer. The compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. If necessary, edits to the T_MAMMAL data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.

Process_Date: 200812
Process_Contact:
  ContactInformation:
    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
Spatial Data Organization Information:
  DirectSpatialReferenceMethod: 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: 73
    SDTS_Terms_Description:
      SDTS_Point_and_Vector_Object_Type: Area point
      Point and Vector Object Count: 72
    SDTS_Terms_Description:
      SDTS_Point_and_Vector_Object_Type: Complete chain
      Point and Vector Object Count: 101
    SDTS_Terms_Description:
      SDTS_Point_and_Vector_Object_Type: Link
      Point and Vector Object Count: 23357
    SDTS_Terms_Description:
      SDTS_Point_and_Vector_Object_Type: Node, planar graph
      Point and Vector Object Count: 97

Spatial Reference Information:
  Horizontal Coordinate System Definition:
    Geographic:
      Latitude Resolution: 0.0000001
      Longitude Resolution: 0.0000001
      Geographic Coordinate Units: Decimal degrees
    Geodetic Model:
      Horizontal Datum Name: North American Datum of 1927
      Ellipsoid Name: Clark 1866
      Semi-major Axis: 6378206.400000
      Denominator of Flattening Ratio: 294.978698

Entity and Attribute Information:
  Overview Description:
  Entity and Attribute Overview:
  In addition to the geographic data layers, six relational attribute or data tables, BIORES, BREEED, SEASONAL, SOURCES, SPECIES, and STATUS, are used to store the complex biological data in the ESI data structure. The geographic data layer containing biological resource information (in this case, T_MAMMAL) is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or it can be linked directly using RARNUM. The ID is a unique combination of the atlas number (for the Northern California atlas, the number is 207), 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, seasonalties, concentrations, and source information. For each of these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases. BIORES and the other relational data tables are described below in detail. See the Browse Graphic section for a link to the entity-relationship diagram, which describes the way these tables relate to the
geographic data layers and other attribute tables in the ESI data structure.

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

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

**Detailed_Description:**

**Entity_Type:**
- **Entity_Type_Label:** T_MAMMAL.PAT
- **Entity_Type_Definition:**
  The T_MAMMAL.PAT table contains attribute information for the vector polygons in this data set representing terrestrial mammal distribution. Note that all attribute information is stored in a series of relational files, described below. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the relationships between attribute tables in the ESI data structure.
- **Entity_Type_Definition_Source:** Research Planning, Inc.

**Attribute:**
- **Attribute_Label:** ID
- **Attribute_Definition:**
  An identifier that links vector objects in the biology data layers to records in the BIO_LUT data table. ID is a concatenation of atlas number (207), element number (9), and record number. ID values of 9999 are holes in polygons and do not contain information.
- **Attribute_Definition_Source:** NOAA
- **Attribute_Domain_Values:**
  - **Range_Domain:**
    - **Range_Domain_Minimum:** 2070900002
    - **Range_Domain_Maximum:** 2070900070

**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: 207001105
  Range Domain Maximum: 207001115

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: 207000001
      Range Domain Maximum: 207001115

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 (207), element number (9), and record number. ID values of 9999 are holes in polygons and do not contain information.
  Attribute Definition Source: NOAA
  Attribute Domain Values:
    Range Domain:
      Range Domain Minimum: 2070100002
      Range Domain Maximum: 2072200500

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: **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**: 207000001  
  - **Range_Domain_Maximum**: 207001115

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 terrestrial mammals, 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_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.

   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.

   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.
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: amphibian
Enumerated_Domain_Value_Definition: Amphibian
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: dolphin
Enumerated_Domain_Value_Definition: Dolphin
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: e_resident
Enumerated_Domain_Value_Definition: Estuarine resident
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: freshwater
Enumerated_Domain_Value_Definition: Freshwater fish
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: gastropod
    Enumerated_Domain_Value_Definition: Gastropod
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: gull_tern
    Enumerated_Domain_Value_Definition: Gull or tern
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: insect
    Enumerated_Domain_Value_Definition: Insect
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: 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: passerine
    Enumerated_Domain_Value_Definition: Passerine bird
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: pelagic
    Enumerated_Domain_Value_Definition: Pelagic bird
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: pinniped
    Enumerated_Domain_Value_Definition: Pinniped
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: plant
    Enumerated_Domain_Value_Definition: Plant
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
Enumerated_Domain_Value: raptor
  Enumerated_Domain_Value_Definition: Raptor
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: sav
    Enumerated_Domain_Value_Definition: Submerged aquatic vegetation
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: 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: sm mammal
    Enumerated_Domain_Value_Definition: Small mammal
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: turtle
    Enumerated_Domain_Value_Definition: Turtle
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: ungulate
    Enumerated_Domain_Value_Definition: Ungulate
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: wading
    Enumerated_Domain_Value_Definition: Wading bird
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: waterfowl
    Enumerated_Domain_Value_Definition: Waterfowl
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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

### Attribute

**Attribute_Label:** NHP  
**Attribute_Definition:** Natural Heritage Program global ranking.  
**Attribute_Definition_Source:** Network of Natural Heritage Program  
**Attribute_Domain_Values:**
- **Codeset_Domain:**
  - **Codeset_Name:** NHP Global Conservation Status Rank  
  - **Codeset_Source:** Natural Heritage Program

### Attribute

**Attribute_Label:** DATE_PUB  
**Attribute_Definition:** Date of NHP listing.  
**Attribute_Definition_Source:** Research Planning, Inc.  
**Attribute_Domain_Values:**
- **Enumerated_Domain:**
  - **Enumerated_Domain_Value:** YYYYMM  
  - **Enumerated_Domain_Value_Definition:** YYYY for year and optionally MM for month  
  - **Enumerated_Domain_Value_Definition_Source:** Research Planning, Inc.

### Attribute

**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:** 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.
EnumeratedDomain:
  EnumeratedDomainValue: BIRD
  EnumeratedDomainValueDefinition: Birds
  EnumeratedDomainValueDefinitionSource: Research Planning, Inc.

AttributeDomainValues:
  EnumeratedDomain:
    EnumeratedDomainValue: FISH
    EnumeratedDomainValueDefinition: Fish
    EnumeratedDomainValueDefinitionSource: Research Planning, Inc.

AttributeDomainValues:
  EnumeratedDomain:
    EnumeratedDomainValue: HABITAT
    EnumeratedDomainValueDefinition: Habitats and Plants
    EnumeratedDomainValueDefinitionSource: Research Planning, Inc.

AttributeDomainValues:
  EnumeratedDomain:
    EnumeratedDomainValue: INVERT
    EnumeratedDomainValueDefinition: Invertebrates
    EnumeratedDomainValueDefinitionSource: Research Planning, Inc.

AttributeDomainValues:
  EnumeratedDomain:
    EnumeratedDomainValue: M_MAMMAL
    EnumeratedDomainValueDefinition: Marine Mammals
    EnumeratedDomainValueDefinitionSource: Research Planning, Inc.

AttributeDomainValues:
  EnumeratedDomain:
    EnumeratedDomainValue: REPTILE
    EnumeratedDomainValueDefinition: Reptiles and Amphibians
    EnumeratedDomainValueDefinitionSource: Research Planning, Inc.

AttributeDomainValues:
  EnumeratedDomain:
    EnumeratedDomainValue: T_MAMMAL
    EnumeratedDomainValueDefinition: Terrestrial Mammals
    EnumeratedDomainValueDefinitionSource: Research Planning, Inc.

Attribute:
  AttributeLabel: SPECIES_ID
  AttributeDefinition:
    Numeric identifier for each species that is unique within each element and refers to a nationwide ESI species list maintained at NOAA.
  AttributeDefinitionSource: Research Planning, Inc.
  AttributeDomainValues:
    RangeDomain:
      RangeDomainMinimum: 1
      RangeDomainMaximum: N

Attribute:
  AttributeLabel: SEASON_ID
  AttributeDefinition:
    Numeric identifier for the unique monthly presence and life history characteristics of each species at a given location.
  AttributeDefinitionSource: Research Planning, Inc.
  AttributeDomainValues:
    RangeDomain:
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 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 Domain Values:**
  - **Enumerated Domain:**
    - **Enumerated Domain Value:** E#######
    - **Enumerated Domain Value Definition:** Where E is the first character of ELEMENT, the next five characters are SPECIES_ID, and the last two characters are SEASON_ID (e.g. ELEMENT = 'BIRD', SPECIES_ID = 1 and SEASON_ID = 1; EL_SPE_SEA = 'B0000101').
  - **Enumerated Domain Value Definition Source:** Research Planning, Inc.

**Attribute:**

- **Attribute Label:** MONTH
- **Attribute Definition:**
  Two-digit calendar month. Each life history stage or activity type for a particular species can have up to 12 records to account for each month of the year.
- **Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

- **Range Domain:**
  - **Range Domain Minimum:** 1
Range_Domain_Maximum: 12

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

Attribute_Definition_Source: Research Planning, Inc.

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

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

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

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

Attribute_Definition_Source: Research Planning, Inc.

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

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

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: -
Enumerated_Domain_Value_Definition: Breed category not used or not appropriate for record(s) in question
Attribute: BREED3

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

Attribute 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.
- 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.
- 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: BREED4

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

Attribute 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.
- 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.
- 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.
enumerated_domain_value_definition_source: Research Planning, Inc.

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

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

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

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

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

Attribute:
  Attribute_Label: SOURCE_ID
  Attribute_DEFINITION:
  Source identifier that links records in the SOURCES data table to the items G_SOURCE and A_SOURCE in the SOC_DAT table; G_SOURCE and S_SOURCE in the BIORES table; and SOURCE_ID in the ESI and HYDRO data layers.
  Attribute_DEFINITION_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Range_Domain:
  Range_Domain_Minimum: 1
  Range_Domain_Maximum: N

Attribute:
  Attribute_Label: ORIGINATOR
  Attribute_DEFINITION: Author or developer of source material or data set.
  Attribute_DEFINITION_Source: Research Planning, Inc.

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

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

Attribute:
Attribute Label: TITLE
Attribute Definition: Title of source material or data.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
  Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute Label: DATA_FORMAT
Attribute Definition: The format of the source material.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
  Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute Label: PUBLICATION
Attribute Definition: Additional citation information.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
  Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute Label: SCALE
Attribute Definition: Description of the source scale.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
  Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:
Attribute Label: TIME_PERIOD
Attribute Definition:
  Date(s) of data collection that the source material is based upon.
Attribute Definition Source: Research Planning, Inc.
Attribute Domain Values:
  Unrepresentable Domain: Acceptable values change from atlas to atlas.

Detailed Description:
Entity Type:
Entity Type Label: STATUS
Entity Type Definition:
The data table STATUS identifies the species that are listed as either threatened or endangered by a state, federal, or international authority. See the Browse Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.
Entity Type Definition Source: Research Planning, Inc.

Attribute:
Attribute_ Label: ELEMENT
Attribute_Definition: Major categories of biological data.
Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: BIRD
    Enumerated_Domain_Value_Definition: Birds
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

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

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

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

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

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

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

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

Attribute_Domain_Values:
  Range_Domain:
    Range_Domain_Minimum: 1
    Range_Domain_Maximum: N

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

Attribute:
  Attribute Label: COUNTRY
  Attribute Definition: Three-letter country abbreviation.
  Attribute Definition Source: Research Planning, Inc.
  Attribute Domain Values:
    Unrepresentable Domain: Acceptable values change from atlas to atlas.

Attribute:
  Attribute Label: S
  Attribute Definition: State threatened or endangered status.
  Attribute Definition Source: Research Planning, Inc.
  Attribute Domain Values:
    Enumerated Domain:
      Enumerated Domain Value: E
      Enumerated Domain Value Definition: Endangered on state list
      Enumerated Domain Value Definition Source: NOAA ESI Guidelines

Attribute Domain Values:
  Enumerated Domain:
    Enumerated Domain Value: T
    Enumerated Domain Value Definition: Threatened on state list
    Enumerated Domain Value Definition Source: NOAA ESI Guidelines

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

Attribute:
  Attribute Label: F
  Attribute Definition: Federal threatened or endangered status.
  Attribute Definition Source: Research Planning, Inc.
  Attribute Domain Values:
    Enumerated Domain:
      Enumerated Domain Value: E
      Enumerated Domain Value Definition: Endangered on federal list
      Enumerated Domain Value Definition Source: NOAA ESI Guidelines

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

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

Attribute:
  Attribute Label: I
  Attribute Definition: International threatened or endangered status.
  Attribute Definition Source: Research Planning, Inc.
  Attribute Domain Values:
    Enumerated Domain:
Enumerated_Domain_Value: E
Enumerated_Domain_Value_Definition: Endangered on international list
Enumerated_Domain_Value_Definition_Source: NOAA ESI Guidelines

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

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

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

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

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

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

*Attribute_Definition_Source:* Research Planning, Inc.

*Attribute_Domain_Values:*

*Enumerated_Domain:*

*Enumerated_Domain_Value: E####*

*Enumerated_Domain_Value_Definition:*

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

*Enumerated_Domain_Value_Definition_Source:* Research Planning, Inc.

---

**Distribution_Information:**

**Distributor:**

**Contact_Information:**

*Contact_Person_Primary:*

*Contact_Person: John Kaperick*

*Contact_Organization: NOAA, Office of Response and Restoration*

*Contact_Address:*

*Address_Type: Physical Address*

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

*City: Seattle*

*State_or_Province: Washington*

*Postal_Code: 98115-6349*

*Contact_Voice_Telephone: (206) 526-6400*

*Contact_Facsimile_Telephone: (206) 526-6329*

**Resource_Description:** ESI Atlas for Northern California

**Distribution_Liability:**

Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration (NOAA), 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 the widest community of GIS/mapping users. Distribution formats include Access Personal Geodatabase, ARC export files, Shape files, and MARPLOT map folders. An ArcMap .mxd file, an ArcView 3.x ESI project, and an ESI_Viewer product for use with the MARPLOT data are also included on the distribution CDs/DVDs 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.

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**Metadata_Reference_Information:**

**Metadata_Date:** 200902

**Metadata_Review_Date:** 200902

**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

Generated by mp version 2.8.21 on Thu Mar 19 21:17:25 2009
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: HABITATS (Habitat Polygons)

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

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:

Publication_Date: 200812

Title:
Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Northern California: HABITATS (Habitat Polygons)

Edition: Second

Geospatial_Data_Presentation_Form: Vector digital data

Series_Information:

Series_Name: None

Issue_Identification: Northern California

Publication_Information:

Publication_Place: Seattle, Washington

Publisher:

Other_Citation_Details:
Description:

Abstract:

This data set contains sensitive biological resource data for kelp, eelgrass, and terrestrial plants in Northern California. Vector polygons in this data set represent eelgrass, kelp, and plant distribution. Species-specific abundance, seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer.

This data set comprises a portion of the Environmental Sensitivity Index (ESI) data for Northern California. 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: 2007

Currentness_Reference:

The biological data were compiled during 2007. The currentness dates for the data range from 1994 to 2007 and are documented in the Lineage section.

Status:

Progress: Complete

Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_Bounding-coordinate: -124.45800

East_Bounding-coordinate: -122.75000

North_Bounding-coordinate: 37.97900

South_Bounding-coordinate: 42.00000

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

Theme_Keyword: Plants

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: Northern California

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 Northern California ESI data.
Browse_Graphic_File_Type: JPEG

Data_Set_Credit:
This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Emergency Response Division (formerly Hazardous Materials Response Division), Seattle, Washington and Assessment and Restoration Division, Silver Spring, Maryland; Department of Homeland Security, U.S. Coast Guard, Office of Incident Management and Preparedness, Washington, D.C.; and Department of Fish and Game, Office of Spill Prevention and Response, Sacramento, California.

Native_Data_Set_Environment:
The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO® (version 9.2) and SQL SERVER® (version 2000). The hardware configuration is PCs 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.e00esi.e00, fish.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, mgt.e00, nests.e00, reptiles.e00, socecon.e00, t_mammal.e00. Associated relational and desktop data tables provided in ARC export and text format are bio_lut, biofile, biore, breed, breedDt, 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® to ARC/INFO® consistencies. A final review is made by the GIS manager, where the data are written to CD or DVD, 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 IDs and RARNUMs or HUNUMs are also generated. The new IDs 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 RARNUMs are also modified to include the atlas number, so multiple atlases can be combined and RARNUMs remain unique. RARNUMs are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUMs are also modified to include the atlas number.

Completeness_Report:
These data represent a synthesis of expert knowledge, maps, and digital data on eelgrass, kelp, and plant distribution. These data do not necessarily represent all habitats occurrences in Northern California. The following species are included in this data set: (Species_ID, Common Name, Scientific Name [n/a if not applicable]): 1, Eelgrass, Zostera marina; 9, Giant kelp, Macrocystis pyrifera; 774, Marsh pea, Lathyrus palustris; 860, Oregon Coast Indian paintbrush, Castilleja affinis ssp. litoralis; 861, Mendocino Coast Indian paintbrush, Castilleja mendocinensis; 862, Pink sand verbena, Abronia umbellata ssp. breviflora; 863, Beach pea, Lathyrus japonicus; 864, Sanddune phacelia, Phacelia argentea; 865, Dark-eyed gilia, Gilia millefoliata; 866, Pacific gilia, Gilia capitata ssp. pacifica; 867, Marsh violet, Viola palustris; 868, Langsdorf's violet, Viola langsdorffii; 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: ALLEN, S. (NATIONAL PARK SERVICE, POINT REYES)
Publication_Date: 2005
Title: DISTRIBUTION AND SEASONALITY OF SPECIES AND SOC_ECON FEATURES ON NPS LANDS
Northern California ESI: HABITATS (Habitat Polygons)
Other_Citation_Details: CDF&G, LOS ALAMITOS, CA
Type_of_Source_Media: ONLINE
Source_Time_Peiod_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
   Beginning_Date: 2002
   Ending_Date: 2005
Source_Currentness_Reference: DATE OF SURVEY
Source_Citation_Abbreviation: NONE
Source_Contribution: HABITATS INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: COX, B. (CDF&G)
Publication_Date: 2007
Title: FISH, INVERTS, AND HABITATS IN SONOMA/MARIN COUNTY STREAMS AND ESTUARIES
Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
Other_Citation_Details: UNPUBLISHED
Type_of_Source_Media: PERSONAL COMMUNICATION
Source_Time_Peiod_of_Content:
Time_Period_Information:
Single_Date/Time:
   Calendar_Date: 2007
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: HABITATS INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: DAYTON, J. (CDF&G)
Publication_Date: 2007
Title: FISH, WILDLIFE, AND HABITAT DISTRIBUTION IN NORTHERN CALIFORNIA
Geospatial_Data_Presentation_Form: EXPERT KNOWLEDGE
Other_Citation_Details: UNPUBLISHED
Type_of_Source_Media: PERSONAL COMMUNICATION
Source_Time_Peiod_of_Content:
Time_Period_Information:
Single_Date/Time:
   Calendar_Date: 2007
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: HABITATS INFORMATION
Source_Information:
Source_Citation:
Citation_Information:
Originator: FREY, V. (CDF&G, EUREKA)
Publication_Date: 2007
Title: MARINE RESOURCE DISTRIBUTION AND SEASONALITY IN
ROLETTO, J. (NOAA, Gulf of the Farallones National Marine Sanctuary)

Publication_Date: 2005
Title:
DISTRIBUTION AND SEASONALITY OF GFNMS SPECIES AND SOC_ECON FEATURES
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: 2005
Source_Currentness_Reference: DATE OF COMMUNICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: HABITATS INFORMATION
Source_Information:
Source_Citation:
  Citation_Information:
    Originator: TERRALOGIC GIS, INC.
    Publication_Date: 2005
Title:
ALTERNATIVE B.3 OF THE PACIFIC COAST GROUNDFISH ESSENTIAL FISH HABITAT (EFH) DRAFT EIS (CANOPY KELP HAPC)
Geospatial_Data_Presentation_Form: VECTOR DIGITAL DATA
Other_Citation_Details: NORTHWEST MARINE FISHERIES SERVICE, NORTHWEST REGION
Type_of_Source_Media: ONLINE
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: HABITATS INFORMATION
Source_Information:
Source_Citation:
  Citation_Information:
    Originator: THE GOLD RIDGE RESOURCE CONSERVATION DISTRICT
    Publication_Date: 2007
Title: THE ESTERO AMERICANO WATERSHED MANAGEMENT PLAN
Geospatial_Data_Presentation_Form: HARDCOPY TEXT
Other_Citation_Details: SWRCB CONTRACT NO. 03-138-250-1
Type_of_Source_Media: ONLINE
Source_Time_Period_of_Content:
  Time_Period_Information:
    Single_Date_Time:
      Calendar_Date: 2007
Source_Currentness_Reference: DATE OF PUBLICATION
Source_Citation_Abbreviation: NONE
Source_Contribution: HABITATS INFORMATION
Process_Step:
**Process_Description:**

Three main sources of data were used to depict habitat distribution and seasonality for this data layer: 1) personal interviews with resource experts from California Department of Fish & Game (CDF&G), National Park Service (NPS), and NOAA; 2) maps and reports provided by California State Parks (CSP) and other agencies; and 3) digital data sets provided by CDF&G, National Marine Fisheries Service (NMFS), and NPS.

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; and/or 3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information on the type of source data for this data layer. The compiled ESI, biology, and human-use data are plotted onto hardcopy draft maps. Following the delivery of draft maps to the participating resource experts, a second set of interviews is conducted to review the maps. If necessary, edits to the HABITATS data layer are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.

**Process_Date:** 200812

**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:** 8370

**SDTS_Terms_Description:**

**SDTS_Point_and_Vector_Object_Type:** Area point

**Point_and_Vector_Object_Count:** 8369

**SDTS_Terms_Description:**

**SDTS_Point_and_Vector_Object_Type:** Complete chain

**Point_and_Vector_Object_Count:** 9322

**SDTS_Terms_Description:**
**SDTS_Point_and_Vector_Object_Type:** Link
**Point_and_Vector_Object_Count:** 1004281

**SDTS_Terms_Description:**
**SDTS_Point_and_Vector_Object_Type:** Node, planar graph
**Point_and_Vector_Object_Count:** 9303

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**Spatial_Reference_Information:**

**Horizontal_Coordinate_System_Definition:**

_Geographic:
- **Latitude_Resolution:** 0.0000001
- **Longitude_Resolution:** 0.0000001
- **Geographic_Coordinate_Units:** Decimal degrees

_Geodetic_Model:
- **Horizontal_Datum_Name:** North American Datum of 1927
- **Ellipsoid_Name:** Clark 1866
- **Semi-major_Axis:** 6378206.400000
- **Denominator_of_Flattening_Ratio:** 294.978698

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**Entity_and_Attribute_Information:**

**Overview_Description:**

_In addition to the geographic data layers, six relational attribute or data tables, BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS, are used to store the complex biological data in the ESI data structure. The geographic data layer containing biological resource information (in this case, 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 Northern California atlas, the number is 207), 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 eelgrass, kelp, and plant distribution. Note that all attribute information is stored in a series of relational files, described below. See the Browse_Graphic section for a link to the entity-relationship diagram, which describes the relationships between attribute tables in the ESI data structure.

**Entity_Type_Definition_Source:** Research Planning, Inc.

**Attribute:**
- **Attribute_Label:** ID

**Attribute_Definition:**
An identifier that links vector objects in the biology data layers to records in the BIO_LUT data table. ID is a concatenation of atlas number (207), 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:** 2070300002
  - **Range_Domain_Maximum:** 2070308370

**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:** 207000718
  - **Range_Domain_Maximum:** 207000739

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: 207000001
  Range_Domain_Maximum: 207001115

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 (207), 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: 2070100002
  Range_Domain_Maximum: 2072200500

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: 207000001
  Range_Domain_Maximum: 207001115

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:
Attribute:
Attribute_Label: CONC
Attribute_Definition: The field CONC refers to "concentration," abundance, or density value of a habitat at a particular location. No quantitative or qualitative information on concentrations of eelgrass, kelp, or terrestrial plants were available, so this 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: amphibian
    Enumerated_Domain_Value_Definition: Amphibian
    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: dolphin
  Enumerated_Domain_Value_Definition: Dolphin
  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: e_resident
  Enumerated_Domain_Value_Definition: Estuarine resident
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: freshwater
  Enumerated_Domain_Value_Definition: Freshwater fish
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: gastropod
  Enumerated_Domain_Value_Definition: Gastropod
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: gull_tern
  Enumerated_Domain_Value_Definition: Gull or tern
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: insect
  Enumerated_Domain_Value_Definition: Insect
  Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
Enumerated_Domain:
  Enumerated_Domain_Value: 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: passerine
    Enumerated_Domain_Value_Definition: Passerine bird
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: pelagic
    Enumerated_Domain_Value_Definition: Pelagic bird
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: pinniped
    Enumerated_Domain_Value_Definition: Pinniped
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: plant
    Enumerated_Domain_Value_Definition: Plant
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: raptor
    Enumerated_Domain_Value_Definition: Raptor
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: sav
    Enumerated_Domain_Value_Definition: Submerged aquatic vegetation
    Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:
  Enumerated_Domain:
    Enumerated_Domain_Value: 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
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**: EL_SPE

**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**: SEASONAL

**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**: ELEMENT

**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.
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_Defined: Life-history stage or activity not present or not reported
Enumerated_Domain_Value_Defined_Source: Research Planning, Inc.

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

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

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

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

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

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

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Y
Enumerated_Domain_Value_Defined: Life-history stage or activity present
Enumerated_Domain_Value_Defined_Source: Research Planning, Inc.
**Enumerated_Domain:**

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

**Attribute_Domain_Values:**

**Enumerated_Domain:**

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

**Attribute:**

**Attribute_Label:** BREED4

**Attribute_Definition:**

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

**Attribute_Definition_Source:** Research Planning, Inc.

**Attribute_Domain_Values:**

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

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

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

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

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

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

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

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

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

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

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

Detailed_Description:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

**Enumerated Domain:**

- **Enumerated Domain Value:** YYYYMM
- **Enumerated Domain Value Definition:** YYYY for year and optionally MM for month
- **Enumerated Domain Value Definition Source:** Research Planning, Inc.

**Attribute:**

**Attribute Label:** F_DATE

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

**Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

**Enumerated Domain:**

- **Enumerated Domain Value:** YYYYMM
- **Enumerated Domain Value Definition:** YYYY for year and optionally MM for month
- **Enumerated Domain Value Definition Source:** Research Planning, Inc.

**Attribute:**

**Attribute Label:** I_DATE

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

**Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

**Enumerated Domain:**

- **Enumerated Domain Value:** YYYYMM
- **Enumerated Domain Value Definition:** YYYY for year and optionally MM for month
- **Enumerated Domain Value Definition Source:** Research Planning, Inc.

**Attribute:**

**Attribute Label:** EL_SPE

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

**Attribute Definition Source:** Research Planning, Inc.

**Attribute Domain Values:**

**Enumerated Domain:**

- **Enumerated Domain Value:** E#####
- **Enumerated Domain Value Definition:** Where E is the first character of ELEMENT and the next five characters are SPECIES_ID (e.g. ELEMENT = 'BIRD' and SPECIES_ID = 1; EL_SPE = 'B00001').
- **Enumerated Domain Value Definition Source:** Research Planning, Inc.

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**Distribution Information:**

**Distributor:**

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

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Resource Description: ESI Atlas for Northern California

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Custom Order Process:
Contact NOAA for distribution options (see Distributor). ESI data are processed into multiple formats to make them useful to the widest community of GIS/mapping users. Distribution formats include Access Personal Geodatabase, ARC export files, Shape files, and MARPLOT map folders. An ArcMap .mxd file, an ArcView 3.x ESI project, and an ESI Viewer product for use with the MARPLOT data are also included on the distribution CDs/DVDs 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: 200902
  Metadata Review Date: 200902
  Metadata Contact:
    Contact Information:
      Contact Person Primary:
        Contact Person: Jill Petersen
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  Metadata Standard Name: Content Standards for Digital Geospatial Metadata

Generated by mp version 2.8.21 on Thu Mar 19 21:22:19 2009
The BIO_LUT table can be bypassed by linking the biology tables to BIORES using RARNUM.

The SOC_LUT table can be bypassed by linking the human-use tables to SOC_DAT using HUNUM.
(The BIO_LUT table can be bypassed by linking the biology tables to BIORES using RARNUM.)

(The SOC_LUT table can be bypassed by linking the human-use tables to SOC_DAT using HUNUM.)