

# Hawaii ESI: HYDRO (Hydrology Polygons and Lines)

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

##### *Originator:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

*Publication\_Date:* 200111

*Title:* Hawaii ESI: HYDRO (Hydrology Polygons and Lines)

*Edition:* Second

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

##### *Series\_Information:*

*Series\_Name:* None

*Issue\_Identification:* Hawaii

##### *Publication\_Information:*

*Publication\_Place:* Seattle, Washington

##### *Publisher:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

##### *Other\_Citation\_Details:*

Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

### *Description:*

#### *Abstract:*

This data set contains vector arcs and polygons representing coastal hydrography used in the creation of the Environmental Sensitivity Index (ESI) for Hawaii. The HYDRO data layer contains all annotation used in producing the atlas. The annotation features are categorized into three subclasses in order to simplify the mapping and quality control procedures: GEOG or

geographic features, SOC or socioeconomic features, and HYDRO or water features. This data set comprises a portion of the ESI for Hawaii. 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:* 2000

*Ending\_Date:* 2001

*Currentness\_Reference:*

These data were compiled during 2000-2001. The completeness dates for these data range from 1978 to 2001 and are documented in the Source\_Information section.

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* None Scheduled

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -179.278

*East\_Bounding\_Coordinate:* -154.598

*North\_Bounding\_Coordinate:* 29.252

*South\_Bounding\_Coordinate:* 18.713

*Keywords:*

*Theme:*

*Theme\_Keyword\_Thesaurus:* None

*Theme\_Keyword:* ESI

*Theme\_Keyword:* Sensitivity maps

*Theme\_Keyword:* Hydrology

*Theme\_Keyword:* Coastal resources

*Theme\_Keyword:* Oil spill planning

*Theme\_Keyword:* Coastal Zone Management

*Theme\_Keyword:* Wildlife

*Place:*

*Place\_Keyword\_Thesaurus:* None

*Place\_Keyword:* Hawaii

*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:*

Relationships between spatial data layers and attribute data tables for the Hawaii ESI data.

*Browse\_Graphic\_File\_Type:* JPEG

*Data\_Set\_Credit:*

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

*Native\_Data\_Set\_Environment:*

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20), and PC's with Windows Operating System (NT4.0/2000). The Spatial\_Data\_Organization\_Information section refers only to the source files in the ARC export format. The following files are included in that data set: bathy.e00, birds.e00, bio\_lut.e00, biofile.e00, biores.e00, breed.e00, breed\_dt.e00, cass\_pt.e00, esi.e00, fish.e00, fishpt.e00, habitats.e00, habpt.e00, hydro.e00, index.e00, invert.e00, invertpt.e00, m\_mammals.e00, m\_mampt.e00, mgt.e00, nests.e00, pools.e00, reptiles.e00, reptpt.e00, seasonal.e00, soc\_dat.e00, soc\_lut.e00, socecon.e00, sources.e00, species.e00, status.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, socecon, 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 automated logical consistency checks. Quantitative data (such as densities, counts, abundances, or concentrations) provided by resource experts for inclusion in the data set may vary widely in attribute accuracy, depending upon the methodology used to collect and compile such data. For a more detailed evaluation of source data attribute accuracy, contact the sources listed in the Lineage section.

*Logical\_Consistency\_Report:*

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

*Completeness\_Report:*

These data represent linear and polygonal hydrography for coastal Hawaii.

*Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy\_Report:*

The hydrography data set was developed from pre-existing digital and hardcopy sources and reflects the positional accuracy of these original data. The horizontal positional accuracy of the USGS digital line graph (DLG) source data, as well as the hardcopy 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:* Hawaii Statewide GIS Program

*Publication\_Date:* Unpublished material

*Title:* Digital Shoreline

*Geospatial\_Data\_Presentation\_Form:*

Vector digital data

*Type\_of\_Source\_Media:* Online

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 1983

*Ending\_Date:* 1983

*Source\_Currentness\_Reference:* Date of USGS Maps

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* ESI Shoreline

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Colin Plank  
*Publication\_Date:* Unpublished material  
*Title:* ESI Overflight  
*Geospatial\_Data\_Presentation\_Form:* Map

*Source\_Scale\_Denominator:* 24000  
*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:**Single\_Date/Time:*

*Calendar\_Date:* 2001

*Source\_Currentness\_Reference:* Date of Overflight

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Hydrology information

*Source\_Information:**Source\_Citation:**Citation\_Information:*

*Originator:* Hawaii Statewide GIS Program  
*Publication\_Date:* Unpublished material  
*Title:* Modified National Wetlands Inventory Digital Data  
*Geospatial\_Data\_Presentation\_Form:*  
 Vector digital data

*Type\_of\_Source\_Media:* Online  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:**Range\_of\_Dates/Times:*

*Beginning\_Date:* 1978  
*Ending\_Date:* 1978

*Source\_Currentness\_Reference:* Survey date

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Hydrology information

*Process\_Step:**Process\_Description:*

The shoreline was derived primarily from the 1997 Hawaii Statewide GIS digital coastline.

In some cases, gross shoreline changes were digitized from unrectified aerial overhead or oblique photography. In some cases, additional hydrography polygons were sketched during overflights. These polygons were then digitized from the scanned and registered hardcopy maps. Also, additional hydrographic features were digitized directly from scanned USGS topographic maps. Hardcopy maps of this attributed shoreline and habitat polygons were plotted at 1:24,000 scale for verification of attributes.

*Process\_Date:* 200111

*Process\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NOAA, Office of Response and Restoration

*Contact\_Person:* Jill Petersen

*Contact\_Address:*

*Address\_Type:* Physical address

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

*City:* Seattle

*State\_or\_Province:* Washington

*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944

*Contact\_Facsimile\_Telephone:* (206) 526-6329

*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* GT-polygon composed of rings

*Point\_and\_Vector\_Object\_Count:* 1847

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Area point

*Point\_and\_Vector\_Object\_Count:* 1847

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Complete chain

*Point\_and\_Vector\_Object\_Count:* 2796

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Link

*Point\_and\_Vector\_Object\_Count:* 181179

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Label Point  
*Point\_and\_Vector\_Object\_Count:* 376

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Node, planar graph  
*Point\_and\_Vector\_Object\_Count:* 2821

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*Spatial\_Reference\_Information:**Horizontal\_Coordinate\_System\_Definition:**Geographic:*

*Latitude\_Resolution:* 0.00005  
*Longitude\_Resolution:* 0.00005  
*Geographic\_Coordinate\_Units:* Decimal degrees

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* Old Hawaiian Datum  
*Ellipsoid\_Name:* Clarke 1866  
*Semi-major\_Axis:* 6378206.4  
*Denominator\_of\_Flattening\_Ratio:* 294.9786982

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*Entity\_and\_Attribute\_Information:**Detailed\_Description:**Entity\_Type:*

*Entity\_Type\_Label:* HYDRO.AAT

*Entity\_Type\_Definition:*

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

*Entity\_Type\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* LINE

*Attribute\_Definition:* Type of geographic feature.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* B

*Enumerated\_Domain\_Value\_Definition:* Breakwater  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* H  
*Enumerated\_Domain\_Value\_Definition:* Hydrography  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* I  
*Enumerated\_Domain\_Value\_Definition:* Index  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* S  
*Enumerated\_Domain\_Value\_Definition:* Shoreline  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SOURCE\_ID  
*Attribute\_Definition:* Data source of the ESI arcs  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 1  
*Enumerated\_Domain\_Value\_Definition:* Digital shoreline from Hawaii Statewide GIS Program  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 2  
*Enumerated\_Domain\_Value\_Definition:* Low-altitude overflights by Research Planning, Inc.  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 3  
*Enumerated\_Domain\_Value\_Definition:* Aerial photography  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 5  
*Enumerated\_Domain\_Value\_Definition:* Digitized from 1:24,000-USGS topographic quadrangle  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:**Enumerated\_Domain\_Value:* 7*Enumerated\_Domain\_Value\_Definition:* RPI index*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Enumerated\_Domain:**Enumerated\_Domain\_Value:* 8*Enumerated\_Domain\_Value\_Definition:* Digital lines from NOAA/NOS*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Enumerated\_Domain:**Enumerated\_Domain\_Value:* 11*Enumerated\_Domain\_Value\_Definition:* Digitized from NOS aerial photographs*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Detailed\_Description:**Entity\_Type:**Entity\_Type\_Label:* HYDRO.PAT*Entity\_Type\_Definition:*

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

*Entity\_Type\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* WATER\_CODE*Attribute\_Definition:* Specifies a polygon as either water or land*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* L*Enumerated\_Domain\_Value\_Definition:* Land*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Enumerated\_Domain:**Enumerated\_Domain\_Value:* W*Enumerated\_Domain\_Value\_Definition:* Water*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Detailed\_Description:**Entity\_Type:**Entity\_Type\_Label:* ANNO.GEOG*Entity\_Type\_Definition:*

The spatial data layer HYDRO contains label points representing annotation for geographic

features.

*Entity\_Type\_Definition\_Source*: Research Planning, Inc.

*Detailed\_Description*:

*Entity\_Type*:

*Entity\_Type\_Label*: ANNO.HYDRO

*Entity\_Type\_Definition*:

The spatial data layer HYDRO contains label points representing annotation for water features.

*Entity\_Type\_Definition\_Source*: Research Planning, Inc.

*Detailed\_Description*:

*Entity\_Type*:

*Entity\_Type\_Label*: ANNO.SOC

*Entity\_Type\_Definition*:

The spatial data layer HYDRO contains label points representing annotation for socioeconomic features.

*Entity\_Type\_Definition\_Source*: Research Planning, Inc.

*Distribution\_Information*:

*Distributor*:

*Contact\_Information*:

*Contact\_Person\_Primary*:

*Contact\_Person*: John Kaperick

*Contact\_Organization*: NOAA, Office of Response and Restoration

*Contact\_Address*:

*Address\_Type*: Physical Address

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

*City*: Seattle

*State\_or\_Province*: Washington

*Postal\_Code*: 98115-6349

*Contact\_Voice\_Telephone*: (206) 526-6400

*Contact\_Facsimile\_Telephone*: (206) 526-6329

*Resource\_Description*: ESI Atlas for Hawaii

*Distribution\_Liability*:

Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer input peripherals, or when the

physical medium is delivered in damaged condition.

*Custom\_Order\_Process:*

Contact NOAA for distribution options (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI\_Viewer product are also included on the distribution CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 200111

*Metadata\_Review\_Date:* 200111

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* Jill Petersen

*Contact\_Organization:* NOAA, Office of Response and Restoration

*Contact\_Position:* GIS Manager

*Contact\_Address:*

*Address\_Type:* Physical Address

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

*City:* Seattle

*State\_or\_Province:* Washington

*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944

*Contact\_Facsimile\_Telephone:* (206) 526-6329

*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

*Metadata\_Standard\_Name:* Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

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

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

##### *Originator:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

*Publication\_Date:* 200111

*Title:* Hawaii ESI: ESI (Environmental Sensitivity Index Shoreline Types - Polygons and Lines)

*Edition:* Second

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

##### *Series\_Information:*

*Series\_Name:* None

*Issue\_Identification:* Hawaii

##### *Publication\_Information:*

*Publication\_Place:* Seattle, Washington

##### *Publisher:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

##### *Other\_Citation\_Details:*

Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

### *Description:*

#### *Abstract:*

This data set contains vector arcs and polygons representing the shoreline and coastal habitats of

Hawaii classified according to the Environmental Sensitivity Index (ESI) classification system. This data set comprises a portion of the ESI for Hawaii. 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:* 2000

*Ending\_Date:* 2001

*Currentness\_Reference:*

These data were compiled during 2000-2001. The currentness dates for these data range from 1978 to 2001 and are documented in the Source\_Information section.

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* None Scheduled

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -179.278

*East\_Bounding\_Coordinate:* -154.598

*North\_Bounding\_Coordinate:* 29.252

*South\_Bounding\_Coordinate:* 18.713

*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:* Hawaii

*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:*

Relationships between spatial data layers and attribute data tables for the Hawaii ESI data.

*Browse\_Graphic\_File\_Type:* JPEG

*Data\_Set\_Credit:*

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

*Native\_Data\_Set\_Environment:*

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20), and PC's with Windows Operating System (NT4.0/2000). The Spatial\_Data\_Organization\_Information section refers only to the source files in the ARC export format. The following files are included in that data set: bathy.e00, birds.e00, bio\_lut.e00, biofile.e00, biores.e00, breed.e00, breed\_dt.e00, cass\_pt.e00, esi.e00, fish.e00, fishpt.e00, habitats.e00, habpt.e00, hydro.e00, index.e00, invert.e00, invertpt.e00, m\_mammals.e00, m\_mampt.e00, mgt.e00, nests.e00, pools.e00, reptiles.e00, reptpt.e00, seasonal.e00, soc\_dat.e00, soc\_lut.e00, socecon.e00, sources.e00, species.e00, status.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, socecon, sources, species, and status.

*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

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

*Logical\_Consistency\_Report:*

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

*Completeness\_Report:*

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

*Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy\_Report:*

The ESI data set was developed from pre-existing digital sources and reflects the positional accuracy of these original data. The horizontal positional accuracy of the U.S. Geological Survey (USGS) Digital Line Graph (DLG) and National Wetlands Inventory (NWI) source data, as well as the hardcopy 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 when 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 source data and how these data were integrated or manipulated to create the final data set.

*Lineage:*

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Hawaii Statewide GIS Program

*Publication\_Date:* Unpublished material

*Title:* Digital Shoreline

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

*Type\_of\_Source\_Media:* Online

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 1983

*Ending\_Date:* 1983

*Source\_Currentness\_Reference:* Date of USGS Maps

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* ESI Shoreline

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Colin Plank  
*Publication\_Date:* Unpublished material  
*Title:* ESI Overflight  
*Geospatial\_Data\_Presentation\_Form:* Map

*Source\_Scale\_Denominator:* 24000  
*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2001

*Source\_Currentness\_Reference:* Date of Overflight

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Digital Shoreline

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Hawaii Statewide GIS Program  
*Publication\_Date:* Unpublished material  
*Title:* Modified National Wetlands Inventory Digital Data  
*Geospatial\_Data\_Presentation\_Form:* Vector digital data

*Type\_of\_Source\_Media:* Online  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 1978  
*Ending\_Date:* 1978

*Source\_Currentness\_Reference:* Survey date

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Digital Shoreline

*Process\_Step:*

*Process\_Description:*

The shoreline was initially classified using a standardized classification scheme based on Environmental Sensitivity Index Guidelines, Version 2.0 (Halls, J., J. Michel, S. Zengel, J. Dahlin, and J. Petersen, 1997, Hazardous Materials Response and Assessment Division, NOAA) by a geomorphologist during overflights conducted in August of 2000. The overflights were conducted using small fixed-wing aircraft (Cessna 152 and 172) at elevations of 100-500 feet and slow air speed. Shoreline attributes were recorded on hardcopy 1:24,000 USGS topographic maps. Where appropriate, multiple habitat types were assigned for each shoreline segment. These maps were then scanned, registered, and the ESI classification was transferred to the 1997 Hawaii Statewide GIS digital coastline. In some cases, gross shoreline changes were digitized from unrectified aerial overhead or oblique photography. Aerial photography was also used to classify small portions of the shoreline that were inaccessible via overflight. The 1978 1:24,000 Hawaii Statewide GIS digital National Wetlands Inventory maps were used to derive ESI polygons. In some cases, additional ESI polygons, primarily mangroves, were sketched during overflights. These polygons were then digitized from the scanned and registered hardcopy maps. Also, additional hydrographic features or habitat polygons were digitized directly from scanned USGS topographic maps. Hardcopy maps of this attributed shoreline and habitat polygons were plotted at 1:24,000 scale for verification of the ESI attributes.

*Process\_Date:* 200111

*Process\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NOAA, Office of Response and Restoration

*Contact\_Person:* Jill Petersen

*Contact\_Address:*

*Address\_Type:* Physical address

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

*City:* Seattle

*State\_or\_Province:* Washington

*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944

*Contact\_Facsimile\_Telephone:* (206) 526-6329

*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* GT-polygon composed of rings

*Point\_and\_Vector\_Object\_Count:* 2070

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type*: Area point  
*Point\_and\_Vector\_Object\_Count*: 2070

*SDTS\_Terms\_Description*:

*SDTS\_Point\_and\_Vector\_Object\_Type*: Complete chain  
*Point\_and\_Vector\_Object\_Count*: 10628

*SDTS\_Terms\_Description*:

*SDTS\_Point\_and\_Vector\_Object\_Type*: Link  
*Point\_and\_Vector\_Object\_Count*: 273382

*SDTS\_Terms\_Description*:

*SDTS\_Point\_and\_Vector\_Object\_Type*: Node, planar graph  
*Point\_and\_Vector\_Object\_Count*: 10187

*Spatial\_Reference\_Information*:

*Horizontal\_Coordinate\_System\_Definition*:

*Geographic*:

*Latitude\_Resolution*: 0.00005  
*Longitude\_Resolution*: 0.00005  
*Geographic\_Coordinate\_Units*: Decimal degrees

*Geodetic\_Model*:

*Horizontal\_Datum\_Name*: Old Hawaiian Datum  
*Ellipsoid\_Name*: Clarke 1866  
*Semi-major\_Axis*: 6378206.4  
*Denominator\_of\_Flattening\_Ratio*: 294.9786982

*Entity\_and\_Attribute\_Information*:

*Detailed\_Description*:

*Entity\_Type*:

*Entity\_Type\_Label*: ESI.AAT  
*Entity\_Type\_Definition*:  
 The spatial data layer ESI contains the vector arcs 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. 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; and 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. In some 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, in order of increasing sensitivity to spilled oil. No multiple codes are listed, but all multiple codes included in the data set can be assembled from the codes described.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 1A

*Enumerated\_Domain\_Value\_Definition:* Exposed Rocky Cliffs

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 1B

*Enumerated\_Domain\_Value\_Definition:* Exposed, Solid Man-made Structures

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 2A

*Enumerated\_Domain\_Value\_Definition:* Exposed Wave-cut Platforms in Bedrock

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 2B

*Enumerated\_Domain\_Value\_Definition:* Exposed Scarps and Steep Slopes in Clay

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 3A

*Enumerated\_Domain\_Value\_Definition:* Fine- to Medium-grained Sand Beaches

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 4  
*Enumerated\_Domain\_Value\_Definition:* Coarse-grained Sand Beaches  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 5  
*Enumerated\_Domain\_Value\_Definition:* Mixed Sand and Gravel Beaches  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 6A  
*Enumerated\_Domain\_Value\_Definition:* Gravel Beaches  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 6B  
*Enumerated\_Domain\_Value\_Definition:* Riprap  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 7  
*Enumerated\_Domain\_Value\_Definition:* Exposed Tidal Flats  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 8A  
*Enumerated\_Domain\_Value\_Definition:* Sheltered Rocky Shores  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 8B  
*Enumerated\_Domain\_Value\_Definition:* Sheltered, Solid Man-made Structures  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 8C  
*Enumerated\_Domain\_Value\_Definition:* Sheltered Riprap  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 9A  
*Enumerated\_Domain\_Value\_Definition:* Sheltered Tidal Flats  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 9B  
*Enumerated\_Domain\_Value\_Definition:* Sheltered, Vegetated Low Banks  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 10A  
*Enumerated\_Domain\_Value\_Definition:* Salt- and Brackish-water Marsh  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 10B  
*Enumerated\_Domain\_Value\_Definition:* Freshwater Marshes  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 10C  
*Enumerated\_Domain\_Value\_Definition:* Freshwater Swamps  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 10D  
*Enumerated\_Domain\_Value\_Definition:* Mangroves  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* LINE  
*Attribute\_Definition:* Type of geographic feature.  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* B  
*Enumerated\_Domain\_Value\_Definition:* Breakwater  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* F  
*Enumerated\_Domain\_Value\_Definition:* Flat  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* H  
*Enumerated\_Domain\_Value\_Definition:* Hydrography  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* M  
*Enumerated\_Domain\_Value\_Definition:* Marsh  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* S  
*Enumerated\_Domain\_Value\_Definition:* Shoreline  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SOURCE\_ID  
*Attribute\_Definition:* Data source of the ESI arcs  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 1  
*Enumerated\_Domain\_Value\_Definition:* Digital shoreline from Hawaii Statewide GIS Program  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 2  
*Enumerated\_Domain\_Value\_Definition:* Low-altitude overflights by Research Planning, Inc.  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 3  
*Enumerated\_Domain\_Value\_Definition:* Aerial photography  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 5  
*Enumerated\_Domain\_Value\_Definition:* Digitized from 1:24,000-USGS topographic quadrangle  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 8  
*Enumerated\_Domain\_Value\_Definition:* Digital lines from NOAA/NOS  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 11  
*Enumerated\_Domain\_Value\_Definition:* Digitized from NOAA/NOS aerial

photographs

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: 12

*Enumerated\_Domain\_Value\_Definition*: Hawaii Statewide GIS Program modified digital NWI

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute*:

*Attribute\_Label*: ENVIR

*Attribute\_Definition*: Type of regional environment

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: E

*Enumerated\_Domain\_Value\_Definition*: Estuarine

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: U

*Enumerated\_Domain\_Value\_Definition*: Unranked

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Detailed\_Description*:

*Entity\_Type*:

*Entity\_Type\_Label*: ESI.PAT

*Entity\_Type\_Definition*:

The spatial data layer ESI contains 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 according to the ESI ranking of the polygons. The ESI rankings progress from low to high susceptibility to oil spills. The ESI rankings of polygons are similar to the ESI rankings of shorelines (see the ESI attribute in the ESI.AAT section).

*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.

*Enumerated\_Domain:**Enumerated\_Domain\_Value:* 7*Enumerated\_Domain\_Value\_Definition:* Exposed Tidal Flats*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Enumerated\_Domain:**Enumerated\_Domain\_Value:* 9A*Enumerated\_Domain\_Value\_Definition:* Sheltered Tidal Flats*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Enumerated\_Domain:**Enumerated\_Domain\_Value:* 10A*Enumerated\_Domain\_Value\_Definition:* Salt- and Brackish-water Marsh*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Enumerated\_Domain:**Enumerated\_Domain\_Value:* 10B*Enumerated\_Domain\_Value\_Definition:* Freshwater Marshes*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Enumerated\_Domain:**Enumerated\_Domain\_Value:* 10C*Enumerated\_Domain\_Value\_Definition:* Freshwater Swamps*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Enumerated\_Domain:**Enumerated\_Domain\_Value:* 10D*Enumerated\_Domain\_Value\_Definition:* Mangroves*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc..*Attribute:**Attribute\_Label:* WATER\_CODE*Attribute\_Definition:* Specifies a polygon as either water or land*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* L*Enumerated\_Domain\_Value\_Definition:* Land*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Enumerated\_Domain:**Enumerated\_Domain\_Value:* W*Enumerated\_Domain\_Value\_Definition:* Water*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:**Attribute\_Label:* ENVIR*Attribute\_Definition:* Type of regional environment*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* E*Enumerated\_Domain\_Value\_Definition:* Estuarine*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Enumerated\_Domain:**Enumerated\_Domain\_Value:* P*Enumerated\_Domain\_Value\_Definition:* Palustrine*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 Hawaii*Distribution\_Liability:*

Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer input peripherals, or when the physical medium is delivered in damaged condition.

*Custom\_Order\_Process:*

Contact NOAA for distribution options (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC

export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI\_Viewer product are also included on the distribution CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

---

*Metadata\_Reference\_Information:*

*Metadata\_Date:* 200111

*Metadata\_Review\_Date:* 200111

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* Jill Petersen

*Contact\_Organization:* NOAA, Office of Response and Restoration

*Contact\_Position:* GIS Manager

*Contact\_Address:*

*Address\_Type:* Physical Address

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

*City:* Seattle

*State\_or\_Province:* Washington

*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944

*Contact\_Facsimile\_Telephone:* (206) 526-6329

*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

*Metadata\_Standard\_Name:* Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

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# Hawaii ESI: INDEX (Index Polygons)

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

##### *Originator:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

*Publication\_Date:* 200111

*Title:* Hawaii ESI: INDEX (Index Polygons)

*Edition:* Second

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

##### *Series\_Information:*

*Series\_Name:* None

*Issue\_Identification:* Hawaii

##### *Publication\_Information:*

*Publication\_Place:* Seattle, Washington

##### *Publisher:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

##### *Other\_Citation\_Details:*

Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

### *Description:*

#### *Abstract:*

This data set contains vector polygons representing the boundaries of the U.S. Geological Survey 1:24,000 topographic maps and other map and digital data boundaries used in the creation of the Environmental Sensitivity Index (ESI) for Hawaii. This data set comprises a portion of the ESI data for Hawaii. 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:* 2000

*Ending\_Date:* 2001

*Currentness\_Reference:*

These data were compiled during 2000-2001. The currentness date for these data is 2001 and is documented in the Source\_Information section.

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* None Scheduled

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -179.278

*East\_Bounding\_Coordinate:* -154.598

*North\_Bounding\_Coordinate:* 29.252

*South\_Bounding\_Coordinate:* 18.713

*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:* Hawaii

*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:*

Relationships between spatial data layers and attribute data tables for the Hawaii ESI data.

*Browse\_Graphic\_File\_Type:* JPEG

*Data\_Set\_Credit:*

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

*Native\_Data\_Set\_Environment:*

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20), and PC's with Windows Operating System (NT4.0/2000). The Spatial Data Organization Information section refers only to the source files in the ARC export format. The following files are included in that data set: bathy.e00, birds.e00, bio\_lut.e00, biofile.e00, biores.e00, breed.e00, breed\_dt.e00, cass\_pt.e00, esi.e00, fish.e00, fishpt.e00, habitats.e00, habpt.e00, hydro.e00, index.e00, invert.e00, invertpt.e00, m\_mammals.e00, m\_mampt.e00, mgt.e00, nests.e00, pools.e00, retiles.e00, reptpt.e00, seasonal.e00, soc\_dat.e00, soc\_lut.e00, socecon.e00, sources.e00, species.e00, status.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, socecon, sources, species, and status.

*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

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

*Logical\_Consistency\_Report:*

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

proper coding, GIS topological consistencies (such as dangles, unnecessary node, etc.), and ORACLE(r)to ARC/INFO(r) consistencies. A final review is made by the GIS manager, where the data are written to CD-ROM and the metadata are written. After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks.

*Completeness\_Report:*

These data represent the boundaries of all the hardcopy cartographic products produced as part of the Environmental Sensitivity Index (ESI) for Hawaii, as well as digital data extents. Primarily, 1:24,000 USGS topographic maps were used to provide boundaries for cartographic products. In some cases, the polygons represent 1:24,000 U.S. Geological Survey (USGS) topographic maps that were re-tiled, moved, or extended to provide better cartographic coverage of the study area. In some areas, particularly the Northwest Hawaiian Islands where 1:24,000 USGS topographic maps do not exist, index polygons represent cartographic boundaries chosen to provide complete coverage of all mapped resources in the area. Finally, polygons representing the outer extent of all digital data are included in this data layer.

*Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy\_Report:*

The index polygons in this data layer were generated in Arc/INFO from the coordinates of the USGS 1:24,000 topographic map corners. Some small amount of positional error may be present along the arcs forming the boundaries of these polygons, particularly away from the polygon corners. 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:* U.S. Geological Survey

*Publication\_Date:* Unknown

*Title:* Topographic Quadrangles

*Geospatial\_Data\_Presentation\_Form:* Map

*Publication\_Information:*

*Publication\_Place:* Denver, CO or Reston, VA

*Publisher:* U.S. Geological Survey

*Source\_Scale\_Denominator:* 24000

*Type\_of\_Source\_Media:* Paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* Varies

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Map index

*Process\_Step:*

*Process\_Description:*

The index polygons in this data layer were generated in Arc/INFO from the coordinates of the USGS map corners, or appropriate coordinates. Other arcs, representing the outer extent of digital data, were derived from biological data layers included as part of the larger Environmental Sensitivity Index (ESI) data set for Hawaii.

*Process\_Date:* 200111

*Process\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NOAA, Office of Response and Restoration

*Contact\_Person:* Jill Petersen

*Contact\_Address:*

*Address\_Type:* Physical address

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

*City:* Seattle

*State\_or\_Province:* Washington

*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944

*Contact\_Facsimile\_Telephone:* (206) 526-6329

*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* GT-polygon composed of rings

*Point\_and\_Vector\_Object\_Count:* 104

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Area point

*Point\_and\_Vector\_Object\_Count:* 104

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Complete chain

*Point\_and\_Vector\_Object\_Count:* 398

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Link  
*Point\_and\_Vector\_Object\_Count:* 30996

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Node, planar graph  
*Point\_and\_Vector\_Object\_Count:* 315

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*Spatial\_Reference\_Information:**Horizontal\_Coordinate\_System\_Definition:**Geographic:*

*Latitude\_Resolution:* 0.00005  
*Longitude\_Resolution:* 0.00005  
*Geographic\_Coordinate\_Units:* Decimal degrees

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* Old Hawaiian Datum  
*Ellipsoid\_Name:* Clarke 1866  
*Semi-major\_Axis:* 6378206.4  
*Denominator\_of\_Flattening\_Ratio:* 294.9786982

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*Entity\_and\_Attribute\_Information:**Detailed\_Description:**Entity\_Type:*

*Entity\_Type\_Label:* INDEX.PAT

*Entity\_Type\_Definition:*

The data layer INDEX contains vector polygons representing the boundaries of the USGS 1:24,000 topographic maps and other map and digital data boundaries used in the creation of the Environmental Sensitivity Index (ESI) for Hawaii.

*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. During the map production process, the value of TILE-NAME is plotted on the map product to order maps in a coherent manner. The values for each polygon are unique and range from 1 through 97.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 1  
*Range\_Domain\_Maximum:* 97

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*Attribute\_Label:* TOPO-NAME  
*Attribute\_Definition:* Topographic map names  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
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*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

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*Enumerated\_Domain\_Value:* NAPILI, HI (1997)

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*Enumerated\_Domain\_Value\_Definition:* USGS 1:24,000 Topographic map name  
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*Enumerated\_Domain\_Value:* SCHOFIELD BARRACKS, HI (1983)  
*Enumerated\_Domain\_Value\_Definition:* USGS 1:24,000 Topographic map name  
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*Enumerated\_Domain\_Value:* WAIANAE, HI (1983)  
*Enumerated\_Domain\_Value\_Definition:* USGS 1:24,000 Topographic map name  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* WAILUKU, HI (1997)  
*Enumerated\_Domain\_Value\_Definition:* USGS 1:24,000 Topographic map name  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* WAIMEA, HI (1983)  
*Enumerated\_Domain\_Value\_Definition:* USGS 1:24,000 Topographic map name  
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*Enumerated\_Domain\_Value:* WAIPAHI, HI (1983)  
*Enumerated\_Domain\_Value\_Definition:* USGS 1:24,000 Topographic map name  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SCALE

*Attribute\_Definition:*

SCALE contains the value of the denominator of the scale at which the map is plotted in the final map product.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

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*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

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*Attribute\_Label:* MAPANGLE

*Attribute\_Definition:*

MAPANGLE contains a value to rotate the final map product so that it is situated straight up and down

*Attribute\_Definition\_Source:* Research Plannning, Inc.

*Attribute\_Domain\_Values:*

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*Range\_Domain\_Minimum:* -5.179

*Range\_Domain\_Maximum:* 4.416  
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*Attribute:*

*Attribute\_Label:* PAGESIZE

*Attribute\_Definition:*

PAGESIZE contains the value of the width and height of the map in the final map product

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*Attribute\_Domain\_Values:*

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*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* 17,11

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*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 Hawaii

*Distribution\_Liability:*

Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer input peripherals, or when the

physical medium is delivered in damaged condition.

*Custom\_Order\_Process:*

Contact NOAA for distribution options (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI\_Viewer product are also included on the distribution CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

---

*Metadata\_Reference\_Information:*

*Metadata\_Date:* 200111

*Metadata\_Review\_Date:* 200111

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* Jill Petersen

*Contact\_Organization:* NOAA, Office of Response and Restoration

*Contact\_Position:* GIS Manager

*Contact\_Address:*

*Address\_Type:* Physical Address

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

*City:* Seattle

*State\_or\_Province:* Washington

*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944

*Contact\_Facsimile\_Telephone:* (206) 526-6329

*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

*Metadata\_Standard\_Name:* Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

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# Hawaii ESI: BIRDS (Bird Polygons)

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

##### *Originator:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

*Publication\_Date:* 200111

*Title:* Hawaii ESI: BIRDS (Bird Polygons)

*Edition:* Second

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

##### *Series\_Information:*

*Series\_Name:* None

*Issue\_Identification:* Hawaii

##### *Publication\_Information:*

*Publication\_Place:* Seattle, Washington

##### *Publisher:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

##### *Other\_Citation\_Details:*

Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

### *Description:*

#### *Abstract:*

This data set contains sensitive biological resource data for endangered waterbirds and passerine birds, migratory shorebirds and waterfowl, gulls and terns, seabirds, raptors, and wading birds in coastal Hawaii. Vector polygons in this data set represent locations of bird nesting and foraging 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 Hawaii. ESI data characterize the marine and coastal environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources. See also the NESTS data layer, part of the larger Hawaii ESI database, for additional bird information.

*Purpose:*

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

*Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 2000

*Ending\_Date:* 2001

*Currentness\_Reference:*

The biological data were compiled during 2000-2001. The currentness dates for these data range from 1980 to 2001 and are documented in the Source\_Information section.

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* None Scheduled

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -179.278

*East\_Bounding\_Coordinate:* -154.598

*North\_Bounding\_Coordinate:* 29.252

*South\_Bounding\_Coordinate:* 18.713

*Keywords:*

*Theme:*

*Theme\_Keyword\_Thesaurus:* None

*Theme\_Keyword:* ESI

*Theme\_Keyword:* Sensitivity maps

*Theme\_Keyword:* Coastal resources

*Theme\_Keyword:* Oil spill planning

*Theme\_Keyword:* Coastal Zone Management

*Theme\_Keyword:* Wildlife

*Theme\_Keyword:* Bird

*Place:*

*Place\_Keyword\_Thesaurus:* None

*Place\_Keyword:* Hawaii

*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:*

Relationships between spatial data layers and attribute data tables for the Hawaii ESI data.

*Browse\_Graphic\_File\_Type:* JPEG

*Data\_Set\_Credit:*

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

*Native\_Data\_Set\_Environment:*

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20), and PC's with Windows Operating System (NT4.0/2000). The Spatial\_Data\_Organization\_Information section refers only to the source files in the ARC export format. The following files are included in that data set: bathy.e00, birds.e00, bio\_lut.e00, biofile.e00, biores.e00, breed.e00, breed\_dt.e00, cass\_pt.e00, esi.e00, fish.e00, fishpt.e00, habitats.e00, habpt.e00, hydro.e00, index.e00, invert.e00, invertpt.e00, m\_mammals.e00, m\_mampt.e00, mgt.e00, nests.e00, pools.e00, reptiles.e00, reptpt.e00, seasonal.e00, soc\_dat.e00, soc\_lut.e00, socecon.e00, sources.e00, species.e00, status.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, socecon, sources, species, and status.

*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

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

*Logical\_Consistency\_Report:*

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

*Completeness\_Report:*

These data represent a synthesis of expert knowledge and available hardcopy reports on bird nesting and foraging concentration areas. Refer to the NESTS data layer for additional seabird nesting colony information. These data do not necessarily represent all bird occurrences in the state of Hawaii. The following species are included in this data set (Species\_ID, Common Name, Scientific Name, if applicable): 16, Mallard, *Anas platyrhynchos*; 17, Northern pintail, *Anas acuta*; 18, Green-winged teal, *Anas crecca*; 20, Northern shoveler, *Anas clypeata*; 22, Greater scaup, *Aythya marila*; 23, Lesser scaup, *Aythya affinis*; 57, Wandering tattler, *Heteroscelus incanus*; 61, Pectoral sandpiper, *Calidris melanotos*; 65, Long-billed dowitcher, *Limnodromus scolopaceus*; 67, Sanderling, *Calidris alba*; 73, Ruddy turnstone, *Arenaria interpres*; 90, Black-crowned night-heron, *Nycticorax nycticorax*; 165, Bar-tailed godwit, *Limosa lapponica*; 169, American wigeon, *Anas americana*; 190, Blue-winged teal, *Anas discors*; 242, Hawaiian stilt, *Himantopus mexicanus knudseni*; 243, Hawaiian coot, *Fulica alai*; 244, Hawaiian duck, *Anas wyvilliana*; 245, Hawaiian common moorhen, *Gallinula chloropus sandwicensis*; 246, Laysan duck, *Anas laysanensis*; 247, Wedge-tailed shearwater, *Puffinus pacificus*; 248, Bulwer's petrel, *Bulweria bulwerii*; 249, Black noddy, *Anous minutus*; 250, Red-tailed tropicbird, *Phaethon rubricauda*; 251, Great frigatebird, *Fregata minor*; 252, White-tailed tropicbird, *Phaethon lepturus*; 254, Laysan albatross, *Phoebastria immutabilis*; 261, Brown booby, *Sula leucogaster*; 292, Sharp-tailed sandpiper, *Calidris acuminata*; 339, Band-rumped storm-petrel, *Oceanodroma castro*; 490, Eurasian wigeon, *Anas penelope*; 543, Pacific golden plover, *Pluvialis fulva*; 619, Hawaiian goose, *Branta sandwicensis*; 620, Dark-rumped petrel, *Pterodroma phaeopygia sandwichensis*; 621, Newell's shearwater, *Puffinus auricularis newelli*; 622, Nihoa finch, *Telespiza ultima*; 623, Nihoa millerbird, *Acrocephalus familiaris kingi*; 624, Laysan finch, *Telespiza cantans*; 1001, Gulls; 1002, Shorebirds; 1003, Waterfowl; 1004, Wading birds; 1005, Raptors; 1008, Terns; 1022, Seabirds.

*Positional\_Accuracy:**Horizontal\_Positional\_Accuracy:**Horizontal\_Positional\_Accuracy\_Report:*

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

*Lineage:*

*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Walker, R. (U.S. Fish and Wildlife Service, Oahu)*Publication\_Date:* Unpublished Material*Title:*

Endangered and Migratory Bird Concentration Areas and Seasonality

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Bird information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Swenson, C. (U.S. Fish and Wildlife Service, Oahu)*Publication\_Date:* Unpublished Material*Title:*Plant, Bird, Marine Mammal, Sea Turtle, Fish, and Invertebrate Concentration  
Areas*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Bird information*Source\_Information:*

*Source\_Citation:**Citation\_Information:**Originator:* Silbernagle, M. (U.S. Fish and Wildlife Service, Oahu)*Publication\_Date:* Unpublished Material*Title:*Bird Concentration Areas and Seasonality; Marine Mammal Distribution;  
Aquaculture*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Bird information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:*

Department of Land and Natural Resources, Div. of Forestry and Wildlife

*Publication\_Date:* 1998*Title:* Survey and Inventory of Seabirds, Oahu County*Geospatial\_Data\_Presentation\_Form:* Hardcopy text*Publication\_Information:**Publisher:*HI Non-game Management Program job progress report; subgrant: W-35-  
NGS*Type\_of\_Source\_Media:* Paper*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Range\_of\_Dates/Times:**Beginning\_Date:* 1997*Ending\_Date:* 1998*Source\_Currentness\_Reference:* Dates of surveys

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Bird information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* U.S. Fish and Wildlife Service  
*Publication\_Date:* 1983  
*Title:* Atlas of Hawaiian Seabird Colonies.  
*Geospatial\_Data\_Presentation\_Form:* Hardcopy text  
*Publication\_Information:*

*Publication\_Place:* Honolulu, HI  
*Publisher:* U.S. Fish and Wildlife Service

*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1983

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Bird information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Flint, B. (U.S. Fish and Wildlife Service, Oahu)  
*Publication\_Date:* Unpublished Material  
*Title:* Seabird Nesting Sites and Seasonality  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Bird information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Heacock, D. (Department of Land and Natural Resources, Kauai)  
*Publication\_Date:* Unpublished Material  
*Title:*  
 Coral, Fish, Invertebrate, Bird, Reptile, and Marine Mammal Distribution for  
 Kauai  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Bird information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Alexander, T. (U.S. Fish and Wildlife Service, Kauai)  
*Publication\_Date:* Unpublished Material  
*Title:* Seabird Nesting and Endangered Waterbird Distribution for Kauai  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Bird information

*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Souza, W. (Department of Land and Natural Resources, Kauai)*Publication\_Date:* Unpublished Material*Title:*

Boundaries of State Parks; Endangered Waterbird Concentrations for Kauai

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Bird information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Telfer, T. (Department of Land and Natural Resources, Kauai)*Publication\_Date:* Unpublished Material*Title:* Endangered and Migratory Bird Concentration Areas for Niihau*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Bird information*Source\_Information:**Source\_Citation:*

*Citation\_Information:**Originator:* Potts, R. (National Park Service, Molokai)*Publication\_Date:* Unpublished Material*Title:*Biological Resource Distribution and Concentration Areas for Kalaupapa  
National Heritage Program*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Bird information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Duvall, F. (Department of Land and Natural Resources, Maui)*Publication\_Date:* Unpublished Material*Title:*Seabird, Endangered Bird, and Invertebrate Distribution and Seasonality for  
Maui; Management Areas*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Bird information*Source\_Information:**Source\_Citation:*

*Citation\_Information:**Originator:* Nakai, G. (U.S. Fish and Wildlife Service, Maui)*Publication\_Date:* Unpublished Material*Title:*

Bird and Fish Distribution and Sea Turtle Nesting in Kealia Pond National Wildlife Refuge

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Bird information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:*

Carman, B. (Department of Land and Natural Resources, Kona, Hawaii)

*Publication\_Date:* Unpublished Material*Title:*

Distribution of Biological Resources for the Big Island; Socioeconomic information

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Bird information*Source\_Information:**Source\_Citation:*

*Citation\_Information:**Originator:*

Hendricks, P. (Department of Land and Natural Resources, retired)

*Publication\_Date:* Unpublished Material*Title:* Distribution of Biological Resources for the Big Island*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Bird information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Foster, K. (U.S. Fish and Wildlife Service, Oahu)*Publication\_Date:* Unpublished Material*Title:*

Bird Distribution and Seasonality; Seagrass Concentrations; Surfing

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2001*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Bird information*Source\_Information:**Source\_Citation:**Citation\_Information:*

*Originator:* Asquith, A. (Sea Grant, Kauai)  
*Publication\_Date:* Unpublished Material  
*Title:* Seabird Nesting Locations and Monk Seal Distribution for Kauai  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2001

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Bird information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Rauzon, M.J.  
*Publication\_Date:* 1992  
*Title:*  
 Appendices to the Fish and Wildlife Management Plan for Kaneohe Bay, Oahu,  
 Hawaii.  
*Geospatial\_Data\_Presentation\_Form:* Document  
*Publication\_Information:*

*Publication\_Place:* Hawaii  
*Publisher:* pp. 51-52, 73.

*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:* Bird information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:**Originator:* Ainley, D.G., et al.*Publication\_Date:* 1997*Title:* New Insights into the Status of the Hawaiian Petrel on Kauai.*Geospatial\_Data\_Presentation\_Form:* Document*Publication\_Information:**Publication\_Place:* Hawaii*Publisher:* Colonial Waterbirds 20(1): 24-30.*Type\_of\_Source\_Media:* Paper*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Range\_of\_Dates/Times:**Beginning\_Date:* 1980*Ending\_Date:* 1994*Source\_Currentness\_Reference:* Dates of surveys*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Bird information*Process\_Step:**Process\_Description:*

Personal interviews with resource experts from U.S. Fish and Wildlife Service and the Division of Land and Natural Resources (DLNR) were the primary sources of data used to depict bird nesting and foraging for this data layer. Information gathered during a set of interviews was compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles. A second set of interviews was conducted following the data compilation phase, and edits were made based on recommendations by the resource experts. Concentration information was generally not well known, and therefore use of descriptive terms such as "very high" or "high", or use of numbers of individuals present at a particular location was limited to areas that were frequently monitored. Numerical concentration values were provided by resource experts.

*Process\_Date:* 200111*Process\_Contact:**Contact\_Information:**Contact\_Organization\_Primary:**Contact\_Organization:* NOAA, Office of Response and Restoration*Contact\_Person:* Jill Petersen*Contact\_Address:**Address\_Type:* Physical address*Address:* 7600 Sand Point Way, N.E.*City:* Seattle

*State\_or\_Province:* Washington  
*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944  
*Contact\_Facsimile\_Telephone:* (206) 526-6329  
*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector  
*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* GT-polygon composed of rings  
*Point\_and\_Vector\_Object\_Count:* 327

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Area point  
*Point\_and\_Vector\_Object\_Count:* 327

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Complete chain  
*Point\_and\_Vector\_Object\_Count:* 453

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Link  
*Point\_and\_Vector\_Object\_Count:* 81103

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Node, planar graph  
*Point\_and\_Vector\_Object\_Count:* 418

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Geographic:*

*Latitude\_Resolution:* 0.00005  
*Longitude\_Resolution:* 0.00005  
*Geographic\_Coordinate\_Units:* Decimal degrees

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* Old Hawaiian Datum  
*Ellipsoid\_Name:* Clarke 1866  
*Semi-major\_Axis:* 6378206.4  
*Denominator\_of\_Flattening\_Ratio:* 294.9786982

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## *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 Hawaii, it is 65), 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, T\_E, 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 spatial data layer BIRDS contains the vector polygons representing bird nesting and

foraging 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 (65), 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*: 650100002

*Range\_Domain\_Maximum*: 650100328

*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*: 650000001

*Range\_Domain\_Maximum*: 65000178

*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:* 65000001

*Range\_Domain\_Maximum:* 65000977

*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 (65), 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:* 650100002

*Range\_Domain\_Maximum:* 653700236

*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:* 650100002

*Range\_Domain\_Maximum:* 653700236

*Attribute:*

*Attribute\_Label:* SPECIES\_ID

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 1

*Range\_Domain\_Maximum:* N

*Attribute:*

*Attribute\_Label:* CONC

*Attribute\_Definition:*

The field CONC refers to "concentration," abundance, or density values, and contains counts of seabirds in nesting colonies, counts of endangered birds in management areas, and non-numerical terms, which are used to describe the relative abundance of a particular species. Counts refer to the number of birds or pairs for each species present in a particular location. The field may contain counts of nesting pairs (XX PAIRS) or counts of individuals (XX BIRDS). The descriptive term "OCCASIONAL" was used to describe the relative abundance of an endangered waterbird species at a particular location. In cases where no quantitative count or qualitative description was available, the field is blank. Counts were derived from the last surveyed date at each location.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*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 BIORIS 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 (eg. 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 (eg. 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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Species common name for the entire ESI data set

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* GEN\_SPEC

*Attribute\_Definition:* Species scientific name

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Species scientific name for the entire ESI data set

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_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:* SUBELEMENT

*Attribute\_Definition:*

Element subgroup delineating a logical grouping of the 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:* algae  
*Enumerated\_Domain\_Value\_Definition:* Algae habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* alligator  
*Enumerated\_Domain\_Value\_Definition:* Alligator or crocodile  
*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:* barnacle  
*Enumerated\_Domain\_Value\_Definition:* Barnacle  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bat  
*Enumerated\_Domain\_Value\_Definition:* Bat  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bear  
*Enumerated\_Domain\_Value\_Definition:* Bear  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bird  
*Enumerated\_Domain\_Value\_Definition:* Bird  
*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:* canine  
*Enumerated\_Domain\_Value\_Definition:* Canine  
*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:* chordate*Enumerated\_Domain\_Value\_Definition:* Chordate*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* coral*Enumerated\_Domain\_Value\_Definition:* Coral habitat, community, or species*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:* crayfish*Enumerated\_Domain\_Value\_Definition:* Crayfish*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* diadromous*Enumerated\_Domain\_Value\_Definition:* Diadromous fish*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* diving*Enumerated\_Domain\_Value\_Definition:* Diving bird*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* e\_nursery*Enumerated\_Domain\_Value\_Definition:* Estuarine nursery fish*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* e\_resident  
*Enumerated\_Domain\_Value\_Definition:* Estuarine resident fish  
*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:* fav  
*Enumerated\_Domain\_Value\_Definition:* Floating aquatic vegetation  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* feline  
*Enumerated\_Domain\_Value\_Definition:* Feline  
*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:* freshwater  
*Enumerated\_Domain\_Value\_Definition:* Freshwater fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* frog

*Enumerated\_Domain\_Value\_Definition:* Frog  
*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:* hardbottom  
*Enumerated\_Domain\_Value\_Definition:* Hardbottom habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* landfowl  
*Enumerated\_Domain\_Value\_Definition:* Landfowl  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* lizard  
*Enumerated\_Domain\_Value\_Definition:* Lizard  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* lobster  
*Enumerated\_Domain\_Value\_Definition:* Lobster  
*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:* m\_resident  
*Enumerated\_Domain\_Value\_Definition:* Marine resident fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* passerine  
*Enumerated\_Domain\_Value\_Definition:* Passerine or passerine-like 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:* polar bear  
*Enumerated\_Domain\_Value\_Definition:* Polar bear  
*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:* reef  
*Enumerated\_Domain\_Value\_Definition:* Reef habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* sav  
*Enumerated\_Domain\_Value\_Definition:* Submersed 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:* shellfish  
*Enumerated\_Domain\_Value\_Definition:* Shellfish  
*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:* Shrimp  
*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:* snake  
*Enumerated\_Domain\_Value\_Definition:* Snake  
*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:* upland  
*Enumerated\_Domain\_Value\_Definition:* Upland habitat, plant community, or plant species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* wading  
*Enumerated\_Domain\_Value\_Definition:* Wading bird  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* waterfowl  
*Enumerated\_Domain\_Value\_Definition:* Waterfowl  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* wetland  
*Enumerated\_Domain\_Value\_Definition:* Wetland habitat, plant community, or plant species  
*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:* 0  
*Enumerated\_Domain\_Value\_Definition:* Not ranked  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric

*Enumerated\_Domain\_Value\_Definition:* mmyyyy

*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 (eg. 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 (eg. 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 (eg. 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/mating; if ELEMENT is "REPTILE" then BREED1 = nesting; if ELEMENT is "M\_MAMMAL" then BREED1 = mating. This attribute is not used for T\_MAMMAL or HABITAT elements except when SUBELEMENT is "coral," then BREED1 = spawning.

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Y*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* N*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* -*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* BREED2

*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED2 = laying; if ELEMENT is "FISH" then BREED2 = eggs; if ELEMENT is "INVERT" then BREED2 = eggs; if ELEMENT is "REPTILE" then BREED2 = hatching; if ELEMENT is "M\_MAMMAL" then BREED2 = calving. This attribute is not used for T\_MAMMAL or HABITAT elements except when SUBELEMENT is "coral," then BREED2 = juvenile.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Y

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* N

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* -

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* BREED3

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Y

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* N

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* -

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* BREED4

*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED4 = fledging; if ELEMENT is "FISH" then BREED4 = juvenile; if ELEMENT is "INVERT" then BREED4 = juvenile; if ELEMENT is "REPTILE" then BREED4 = juvenile; if ELEMENT is "M\_MAMMAL" then BREED4 = molting. This attribute is not used for HABITAT or T\_MAMMAL elements.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Y

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* N

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* -

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* BREED5

*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "FISH" then BREED5 = adults; if ELEMENT is "INVERT" then BREED5 = adults; if ELEMENT is "REPTILE" then

BREED5 = adults. This attribute is not used for BIRD, M\_MAMMAL, HABITAT or T\_MAMMAL elements.

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: Y

*Enumerated\_Domain\_Value\_Definition*: Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: N

*Enumerated\_Domain\_Value\_Definition*: Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: -

*Enumerated\_Domain\_Value\_Definition*:

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

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Detailed\_Description*:

*Entity\_Type*:

*Entity\_Type\_Label*: SOURCES

*Entity\_Type\_Definition*:

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

*Entity\_Type\_Definition\_Source*: Research Planning, Inc.

*Attribute*:

*Attribute\_Label*: SOURCE\_ID

*Attribute\_Definition*:

Source identifier that links records in the SOURCES data table to the items G\_SOURCE and A\_SOURCE in the SOC\_DAT table, and to G\_SOURCE and S\_SOURCE in the BIORES table.

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Range\_Domain*:

*Range\_Domain\_Minimum*: 1

*Range\_Domain\_Maximum*: N

*Attribute*:

*Attribute\_Label:* ORIGINATOR

*Attribute\_Definition:* Author or developer of source material or data set

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*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:* Numeric

*Enumerated\_Domain\_Value\_Definition:* mmyyyy

*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:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* DATA\_FORMAT

*Attribute\_Definition:* The format of the source material

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* PUBLICATION

*Attribute\_Definition:* Additional citation information

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SCALE

*Attribute\_Definition:* Scale denominator of the source

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* integer

*Enumerated\_Domain\_Value\_Definition:* Any integer

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* TIME\_PERIOD

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric

*Enumerated\_Domain\_Value\_Definition:* yyyy

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* STATUS

*Entity\_Type\_Definition:*

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

*Entity\_Type\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* ELEMENT

*Attribute\_Definition:* Major categories of biological data

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: BIRD

*Enumerated\_Domain\_Value\_Definition*: Birds

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: FISH

*Enumerated\_Domain\_Value\_Definition*: Fish

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: HABITAT

*Enumerated\_Domain\_Value\_Definition*: Habitats and Plants

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: INVERT

*Enumerated\_Domain\_Value\_Definition*: Invertebrates

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: M\_MAMMAL

*Enumerated\_Domain\_Value\_Definition*: Marine Mammals

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: REPTILE

*Enumerated\_Domain\_Value\_Definition*: Reptiles and Amphibians

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value:* T\_MAMMAL  
*Enumerated\_Domain\_Value\_Definition:* Terrestrial Mammals  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SPECIES\_ID

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 1

*Range\_Domain\_Maximum:* N

*Attribute:*

*Attribute\_Label:* STATE

*Attribute\_Definition:* Two-letter state abbreviation

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Two-letter state abbreviation

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* S\_F

*Attribute\_Definition:* State and Federal status

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* F

*Enumerated\_Domain\_Value\_Definition:* Federally listed

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* S

*Enumerated\_Domain\_Value\_Definition:* State listed

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* S/F  
*Enumerated\_Domain\_Value\_Definition:* State and federally listed  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* T\_E  
*Attribute\_Definition:* Threatened and endangered status  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* E  
*Enumerated\_Domain\_Value\_Definition:* Endangered on state or federal list  
*Enumerated\_Domain\_Value\_Definition\_Source:* U.S. Fish and Wildlife Service

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* T  
*Enumerated\_Domain\_Value\_Definition:* Threatened on state or federal list  
*Enumerated\_Domain\_Value\_Definition\_Source:* U.S. Fish and Wildlife Service

*Attribute:*

*Attribute\_Label:* DATE\_PUB  
*Attribute\_Definition:*  
 Publication date of source material used to assign state and federal status values for each species, if used.  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric  
*Enumerated\_Domain\_Value\_Definition:* mmyyyy  
*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 (eg. 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 Hawaii

##### *Distribution\_Liability:*

Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer input peripherals, or when the physical medium is delivered in damaged condition.

##### *Custom\_Order\_Process:*

Contact NOAA for distribution options (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI Viewer product are also included on the distribution CD's 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*: 200111

*Metadata\_Review\_Date*: 200111

*Metadata\_Contact*:

##### *Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* Jill Petersen

*Contact\_Organization:* NOAA, Office of Response and Restoration

*Contact\_Position:* GIS Manager

*Contact\_Address:*

*Address\_Type:* Physical Address

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

*City:* Seattle

*State\_or\_Province:* Washington

*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944

*Contact\_Facsimile\_Telephone:* (206) 526-6329

*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

*Metadata\_Standard\_Name:* Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

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# Hawaii ESI: NESTS (Nest Points)

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

##### *Originator:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

*Publication\_Date:* 200111

*Title:* Hawaii ESI: NESTS (Nest Points)

*Edition:* Second

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

##### *Series\_Information:*

*Series\_Name:* None

*Issue\_Identification:* Hawaii

##### *Publication\_Information:*

*Publication\_Place:* Seattle, Washington

##### *Publisher:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

##### *Other\_Citation\_Details:*

Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

### *Description:*

#### *Abstract:*

This data set contains sensitive biological resource data for seabird nesting colonies in coastal Hawaii. Vector points in this data set represent locations of seabird colonies. 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 Hawaii. ESI data characterize the marine and coastal environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources. See also the BIRDS data layer, part of the larger Hawaii ESI database, for additional bird information.

*Purpose:*

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

*Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 2000

*Ending\_Date:* 2001

*Currentness\_Reference:*

The biological data were compiled during 2000-2001. The currentness dates for these data range from 1983 to 2001 and are documented in the Source\_Information section

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* None Scheduled

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -179.278

*East\_Bounding\_Coordinate:* -154.598

*North\_Bounding\_Coordinate:* 29.252

*South\_Bounding\_Coordinate:* 18.713

*Keywords:*

*Theme:*

*Theme\_Keyword\_Thesaurus:* None

*Theme\_Keyword:* ESI

*Theme\_Keyword:* Sensitivity maps

*Theme\_Keyword:* Coastal resources

*Theme\_Keyword:* Oil spill planning

*Theme\_Keyword:* Coastal Zone Management

*Theme\_Keyword:* Wildlife

*Theme\_Keyword:* Nest

*Theme\_Keyword:* Bird

*Place:*

*Place\_Keyword\_Thesaurus:* None

*Place\_Keyword:* Hawaii

*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:*

Relationships between spatial data layers and attribute data tables for the Hawaii ESI data.

*Browse\_Graphic\_File\_Type:* JPEG

*Data\_Set\_Credit:*

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

*Native\_Data\_Set\_Environment:*

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20), and PC's with Windows Operating System (NT4.0/2000). The Spatial\_Data\_Organization\_Information section refers only to the source files in the ARC export format. The following files are included in that data set: bathy.e00, birds.e00, bio\_lut.e00, biofile.e00, biores.e00, breed.e00, breed\_dt.e00, cass\_pt.e00, esi.e00, fish.e00, fishpt.e00, habitats.e00, habpt.e00, hydro.e00, index.e00, invert.e00, invertpt.e00, m\_mammals.e00, m\_mampt.e00, mgt.e00, nests.e00, pools.e00, reptiles.e00, reptpt.e00, seasonal.e00, soc\_dat.e00, soc\_lut.e00, socecon.e00, sources.e00, species.e00, status.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, socecon, sources, species, and status.

*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

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

*Logical\_Consistency\_Report:*

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

*Completeness\_Report:*

These data represent a synthesis of available digital and hardcopy seabird colony locations and nesting abundances. Refer to the BIRDS data layer for additional information on bird species. These data do not necessarily represent all nesting colonies present in the state of Hawaii. The following species are included in this data set (Species\_ID, Common Name, Scientific Name, if applicable): 57, Wandering tattler, *Heteroscelus incanus*; 67, Sanderling, *Calidris alba*; 73, Ruddy turnstone, *Arenaria interpres*; 126, Brown noddy, *Anous stolidus*; 127, Sooty tern, *Sterna fuscata*; 128, Masked (blue-faced) booby, *Sula dactylatra*; 247, Wedge-tailed shearwater, *Puffinus pacificus*; 248, Bulwer's petrel, *Bulweria bulwerii*; 249, Black noddy, *Anous minutus*; 250, Red-tailed tropicbird, *Phaethon rubricauda*; 251, Great frigatebird, *Fregata minor*; 252, White-tailed tropicbird, *Phaethon lepturus*; 254, Laysan albatross, *Phoebastria immutabilis*; 255, Black-footed albatross, *Phoebastria nigripes*; 256, Bonin petrel, *Pterodroma hypoleuca*; 257, Tristram's storm-petrel, *Oceanodroma tristrami*; 258, Christmas shearwater, *Puffinus nativitatis*; 260, Red-footed booby, *Sula sula*; 261, Brown booby, *Sula leucogaster*; 262, Gray-backed tern, *Sterna lunata*; 263, Blue-gray noddy, *Procelsterna cerulea*; 264, White tern, *Gygis alba*; 339, Band-rumped storm-petrel, *Oceanodroma castro*; 412, Short-tailed albatross, *Phoebastria albatrus*; 620, Dark-rumped petrel, *Pterodroma phaeopygia sandwichensis*; 621, Newell's shearwater, *Puffinus auricularis newelli*; 624, Laysan finch, *Telespiza cantans*; 625, White tern (Oahu nesting group), *Gygis alba rothschildi*; 1002, Shorebirds; 1022, Seabirds.

*Positional\_Accuracy:**Horizontal\_Positional\_Accuracy:**Horizontal\_Positional\_Accuracy\_Report:*

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

*Lineage:**Source\_Information:**Source\_Citation:*

*Citation\_Information:*

*Originator:* U.S. Fish and Wildlife Service  
*Publication\_Date:* 1983  
*Title:* Atlas of Hawaiian Seabird Colonies.  
*Geospatial\_Data\_Presentation\_Form:* Hardcopy text  
*Publication\_Information:*

*Publication\_Place:* Honolulu, HI  
*Publisher:* U.S. Fish and Wildlife Service

*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 1983*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Nesting information

*Source\_Information:**Source\_Citation:**Citation\_Information:*

*Originator:* Flint, B. (U.S. Fish and Wildlife Service, Oahu)  
*Publication\_Date:* Unpublished Material  
*Title:* Seabird Nesting Sites and Seasonality  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Nesting information

*Source\_Information:**Source\_Citation:*

*Citation\_Information:**Originator:*

Nishimoto, R. (Department of Land and Natural Resources, Hilo, Hawaii)

*Publication\_Date:* Unpublished Material*Title:*Fish, Invertebrate, Coral, Reptile, Bird Distribution; Fish/Invertebrate  
Seasonality; Socioeconomic locations*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Nesting information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Alexander, T. (U.S. Fish and Wildlife Service, Kauai)*Publication\_Date:* Unpublished Material*Title:* Seabird Nesting and Endangered Waterbird Distribution for Kauai*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Nesting information*Source\_Information:**Source\_Citation:**Citation\_Information:*

*Originator:* Duvall, F. (Department of Land and Natural Resources, Maui)

*Publication\_Date:* Unpublished Material

*Title:*

Seabird, Endangered Bird, and Invertebrate Distribution and Seasonality for  
Maui; Management Areas

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Nesting information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:*

Carman, B. (Department of Land and Natural Resources, Kona, Hawaii)

*Publication\_Date:* Unpublished Material

*Title:*

Distribution of Aquatic Resources for the Big Island; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Nesting information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Smith, D., E. VanderWerf, R. David  
*Publication\_Date:* Unpublished Material  
*Title:* Kure Atoll Seabird Survey and Monitoring Program May 2000  
*Geospatial\_Data\_Presentation\_Form:* Document

*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of survey

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Nesting information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Smith, D. (Department of Land and Natural Resources, Oahu)  
*Publication\_Date:* 2000  
*Title:* Seabird Nesting Locations  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Nesting information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* US Geological Survey  
*Publication\_Date:* Unpublished Material  
*Title:* Seabird Atlas of the Main Hawaiian Islands

*Geospatial\_Data\_Presentation\_Form*: Vector digital data  
*Other\_Citation\_Details*: Data contact: Thierry Work, USGS, 808/541-3445

*Type\_of\_Source\_Media*: Disc  
*Source\_Time\_Period\_of\_Content*:

*Time\_Period\_Information*:

*Single\_Date/Time*:

*Calendar\_Date*: 2000

*Source\_Currentness\_Reference*: Date of compilation

*Source\_Citation\_Abbreviation*: None  
*Source\_Contribution*: Nesting information

*Source\_Information*:

*Source\_Citation*:

*Citation\_Information*:

*Originator*: Foster, K. (U.S. Fish and Wildlife Service, Oahu)  
*Publication\_Date*: Unpublished Material  
*Title*:  
 Bird Distribution and Seasonality; Seagrass Concentrations; Surfing  
*Geospatial\_Data\_Presentation\_Form*: Expert knowledge

*Type\_of\_Source\_Media*: Personal communication  
*Source\_Time\_Period\_of\_Content*:

*Time\_Period\_Information*:

*Single\_Date/Time*:

*Calendar\_Date*: 2001

*Source\_Currentness\_Reference*: Date of communication

*Source\_Citation\_Abbreviation*: None  
*Source\_Contribution*: Nesting information

*Source\_Information*:

*Source\_Citation*:

*Citation\_Information*:

*Originator*: Asquith, A. (Sea Grant, Kauai)  
*Publication\_Date*: Unpublished Material  
*Title*: Seabird Nesting Locations and Monk Seal Distribution for Kauai  
*Geospatial\_Data\_Presentation\_Form*: Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2001

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Nesting information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Drigot, D. (U.S. Marine Corp, Kaneohe Bay)

*Publication\_Date:* Unpublished Material

*Title:*

Monk Seal Haul-Outs and Pupping in and Around Kaneohe Bay; Seabird  
 Nesting; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2001

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Nesting information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Rauzon, M.J.

*Publication\_Date:* Unpublished Material

*Title:*

Appendices to the Fish and Wildlife Management Plan for Kaneohe Bay, Oahu,  
 Hawaii.

*Geospatial\_Data\_Presentation\_Form:* Document

*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:* Nesting information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* ABR, Inc.  
*Publication\_Date:* 2000  
*Title:* Results of Petrel and Shearwater Surveys on Kauai, June 2000  
*Geospatial\_Data\_Presentation\_Form:* Document  
*Publication\_Information:*

*Publication\_Place:* Honolulu, HI

*Publisher:* Prep. for University of Hawaii Pacific Cooperative Studies Unit

*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Nesting information

*Process\_Step:*

*Process\_Description:*

Three main sources of data were used to depict seabird nesting colonies for this data layer: 1) the digital 2000 U.S. Geological Survey (USGS) Seabird Atlas of the Main Hawaiian Islands; 2) the hardcopy 1983 U.S. Fish and Wildlife Service (USFWS) Atlas of Hawaiian Seabird Colonies; and 3) personal interviews with resource experts from USFWS and Division of Land and Natural Resources (DLNR). The USGS data set included point locations and concentration information for seabird nesting colonies for the main Hawaiian Islands (MHI), and abundance information for nesting colonies in the northwest Hawaiian Islands (NWHI). Records in the 2000 USGS data set were based primarily on information

from the 1983 USFWS data set, and included the number of pairs or nests for each species recorded at each colony during surveys conducted by USFWS, DLNR, and other ornithologists between 1939-1984. Resource experts provided additional nesting colony locations and updated concentration information for nesting colonies that were surveyed between 1998-2000. The concentration values from the 2000 USGS data were retained in the CONC field of the BIORES data table and represent survey data from the last recorded year. In some cases, no quantitative abundance data were available. Nesting seasonality information was gathered from the 1983 Atlas of Hawaiian Seabird Colonies and edited by the resource experts.

*Process\_Date:* 200111

*Process\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NOAA, Office of Response and Restoration

*Contact\_Person:* Jill Petersen

*Contact\_Address:*

*Address\_Type:* Physical address

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

*City:* Seattle

*State\_or\_Province:* Washington

*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944

*Contact\_Facsimile\_Telephone:* (206) 526-6329

*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Entity Point

*Point\_and\_Vector\_Object\_Count:* 114

*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Geographic:*

*Latitude\_Resolution:* 0.00005

*Longitude\_Resolution:* 0.00005

*Geographic\_Coordinate\_Units:* Decimal degrees

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* Old Hawaiian Datum  
*Ellipsoid\_Name:* Clarke 1866  
*Semi-major\_Axis:* 6378206.4  
*Denominator\_of\_Flattening\_Ratio:* 294.9786982

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*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 Hawaii, it is 65), 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, T\_E, 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 spatial data layer NESTS contains the vector points representing seabird colony locations. Note that all attribute information is stored in a series of relational files, described below. See the Browse\_Graphic section for a link to the entity-relationship diagram, which describes the relationships between attribute tables in the ESI data structure.

*Entity\_Type\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* ID

*Attribute\_Definition:*

An identifier that links vector objects in the biology data layers to records in the BIO\_LUT data table. ID is a concatenation of atlas number (65), element number (5), and record number.

*Attribute\_Definition\_Source:* NOAA

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 650500001

*Range\_Domain\_Maximum:* 650500115

*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:* 65000012

*Range\_Domain\_Maximum:* 65000162

*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.

*Attribute\_Definition\_Source:* NOAA

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 65000001

*Range\_Domain\_Maximum:* 65000977

*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 (65), element number (5), and record number.

*Attribute\_Definition\_Source:* NOAA

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 650100002

*Range\_Domain\_Maximum:* 653700236

*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:* 650100002

*Range\_Domain\_Maximum:* 653700236

*Attribute:*

*Attribute\_Label:* SPECIES\_ID

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 1

*Range\_Domain\_Maximum:* N

*Attribute:*

*Attribute\_Label:* CONC

*Attribute\_Definition:*

The field CONC refers to "concentration," abundance, or density values, and contains counts of nests, pairs, or individuals for each species present at a particular colony. The field may contain counts of nesting pairs (XX PAIRS), counts of actual nests (XX NESTS), or counts of individuals (XX BIRDS). In cases where no quantitative count was available, the field is blank. Counts were derived from the last surveyed date at each location and may range in date from 1939-2000.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*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 (eg. 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 (eg. 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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Species common name for the entire ESI data set

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* GEN\_SPEC

*Attribute\_Definition:* Species scientific name

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Species scientific name for the entire ESI data set  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_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:* SUBELEMENT

*Attribute\_Definition:*

Element subgroup delineating a logical grouping of the 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:* algae  
*Enumerated\_Domain\_Value\_Definition:* Algae habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* alligator  
*Enumerated\_Domain\_Value\_Definition:* Alligator or crocodile  
*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:* barnacle  
*Enumerated\_Domain\_Value\_Definition:* Barnacle  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bat  
*Enumerated\_Domain\_Value\_Definition:* Bat  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bear  
*Enumerated\_Domain\_Value\_Definition:* Bear  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bird  
*Enumerated\_Domain\_Value\_Definition:* Bird  
*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:* canine  
*Enumerated\_Domain\_Value\_Definition:* Canine  
*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:* chordate*Enumerated\_Domain\_Value\_Definition:* Chordate*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* coral*Enumerated\_Domain\_Value\_Definition:* Coral habitat, community, or species*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:* crayfish*Enumerated\_Domain\_Value\_Definition:* Crayfish*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* diadromous*Enumerated\_Domain\_Value\_Definition:* Diadromous fish*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* diving*Enumerated\_Domain\_Value\_Definition:* Diving bird*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* e\_nursery*Enumerated\_Domain\_Value\_Definition:* Estuarine nursery fish*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* e\_resident  
*Enumerated\_Domain\_Value\_Definition:* Estuarine resident fish  
*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:* fav  
*Enumerated\_Domain\_Value\_Definition:* Floating aquatic vegetation  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* feline  
*Enumerated\_Domain\_Value\_Definition:* Feline  
*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:* freshwater  
*Enumerated\_Domain\_Value\_Definition:* Freshwater fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* frog

*Enumerated\_Domain\_Value\_Definition:* Frog  
*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:* hardbottom  
*Enumerated\_Domain\_Value\_Definition:* Hardbottom habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* landfowl  
*Enumerated\_Domain\_Value\_Definition:* Landfowl  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* lizard  
*Enumerated\_Domain\_Value\_Definition:* Lizard  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* lobster  
*Enumerated\_Domain\_Value\_Definition:* Lobster  
*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:* m\_resident  
*Enumerated\_Domain\_Value\_Definition:* Marine resident fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* passerine  
*Enumerated\_Domain\_Value\_Definition:* Passerine or passerine-like 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:* polar bear  
*Enumerated\_Domain\_Value\_Definition:* Polar bear  
*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:* reef  
*Enumerated\_Domain\_Value\_Definition:* Reef habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* sav  
*Enumerated\_Domain\_Value\_Definition:* Submersed 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:* shellfish  
*Enumerated\_Domain\_Value\_Definition:* Shellfish  
*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:* Shrimp  
*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:* snake  
*Enumerated\_Domain\_Value\_Definition:* Snake  
*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:* upland  
*Enumerated\_Domain\_Value\_Definition:* Upland habitat, plant community, or plant species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* wading  
*Enumerated\_Domain\_Value\_Definition:* Wading bird  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* waterfowl  
*Enumerated\_Domain\_Value\_Definition:* Waterfowl  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* wetland  
*Enumerated\_Domain\_Value\_Definition:* Wetland habitat, plant community, or plant species  
*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:* 0  
*Enumerated\_Domain\_Value\_Definition:* Not ranked  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric

*Enumerated\_Domain\_Value\_Definition:* mmyyyy

*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 (eg. 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 (eg. 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 (eg. 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/mating; if ELEMENT is "REPTILE" then BREED1 = nesting; if ELEMENT is "M\_MAMMAL" then BREED1 = mating. This attribute is not used for T\_MAMMAL or HABITAT elements except when SUBELEMENT is "coral," then BREED1 = spawning.

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: Y

*Enumerated\_Domain\_Value\_Definition*: Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: N

*Enumerated\_Domain\_Value\_Definition*: Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: -

*Enumerated\_Domain\_Value\_Definition*:

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

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* BREED2

*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED2 = laying; if ELEMENT is "FISH" then BREED2 = eggs; if ELEMENT is "INVERT" then BREED2 = eggs; if ELEMENT is "REPTILE" then BREED2 = hatching; if ELEMENT is "M\_MAMMAL" then BREED2 = calving. This attribute is not used for T\_MAMMAL or HABITAT elements except when SUBELEMENT is "coral," then BREED2 = juvenile.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Y

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* N

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* -

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* BREED3

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Y

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* N

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* -

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* BREED4

*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED4 = fledging; if ELEMENT is "FISH" then BREED4 = juvenile; if ELEMENT is "INVERT" then BREED4 = juvenile; if ELEMENT is "REPTILE" then BREED4 = juvenile; if ELEMENT is "M\_MAMMAL" then BREED4 = molting. This attribute is not used for HABITAT or T\_MAMMAL elements.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Y

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* N

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* -

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* BREED5

*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "FISH" then BREED5 = adults; if ELEMENT is "INVERT" then BREED5 = adults; if ELEMENT is "REPTILE" then

BREED5 = adults. This attribute is not used for BIRD, M\_MAMMAL, HABITAT or T\_MAMMAL elements.

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: Y

*Enumerated\_Domain\_Value\_Definition*: Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: N

*Enumerated\_Domain\_Value\_Definition*: Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: -

*Enumerated\_Domain\_Value\_Definition*:

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

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Detailed\_Description*:

*Entity\_Type*:

*Entity\_Type\_Label*: SOURCES

*Entity\_Type\_Definition*:

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

*Entity\_Type\_Definition\_Source*: Research Planning, Inc.

*Attribute*:

*Attribute\_Label*: SOURCE\_ID

*Attribute\_Definition*:

Source identifier that links records in the SOURCES data table to the items G\_SOURCE and A\_SOURCE in the SOC\_DAT table, and to G\_SOURCE and S\_SOURCE in the BIORES table.

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Range\_Domain*:

*Range\_Domain\_Minimum*: 1

*Range\_Domain\_Maximum*: N

*Attribute*:

*Attribute\_Label:* ORIGINATOR

*Attribute\_Definition:* Author or developer of source material or data set

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*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:* Numeric

*Enumerated\_Domain\_Value\_Definition:* mmyyyy

*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:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* DATA\_FORMAT

*Attribute\_Definition:* The format of the source material

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* PUBLICATION

*Attribute\_Definition:* Additional citation information

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SCALE

*Attribute\_Definition:* Scale denominator of the source

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* integer

*Enumerated\_Domain\_Value\_Definition:* Any integer

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* TIME\_PERIOD

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric

*Enumerated\_Domain\_Value\_Definition:* yyyy

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* STATUS

*Entity\_Type\_Definition:*

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

*Entity\_Type\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* ELEMENT

*Attribute\_Definition:* Major categories of biological data

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: BIRD

*Enumerated\_Domain\_Value\_Definition*: Birds

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: FISH

*Enumerated\_Domain\_Value\_Definition*: Fish

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: HABITAT

*Enumerated\_Domain\_Value\_Definition*: Habitats and Plants

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: INVERT

*Enumerated\_Domain\_Value\_Definition*: Invertebrates

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: M\_MAMMAL

*Enumerated\_Domain\_Value\_Definition*: Marine Mammals

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: REPTILE

*Enumerated\_Domain\_Value\_Definition*: Reptiles and Amphibians

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value:* T\_MAMMAL  
*Enumerated\_Domain\_Value\_Definition:* Terrestrial Mammals  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SPECIES\_ID

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 1

*Range\_Domain\_Maximum:* N

*Attribute:*

*Attribute\_Label:* STATE

*Attribute\_Definition:* Two-letter state abbreviation

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Two-letter state abbreviation

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* S\_F

*Attribute\_Definition:* State and Federal status.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* F

*Enumerated\_Domain\_Value\_Definition:* Federally listed

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* S

*Enumerated\_Domain\_Value\_Definition:* State listed

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* S/F  
*Enumerated\_Domain\_Value\_Definition:* State and federally listed  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* T\_E  
*Attribute\_Definition:* Threatened and endangered status.  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* E  
*Enumerated\_Domain\_Value\_Definition:* Endangered on state or federal list  
*Enumerated\_Domain\_Value\_Definition\_Source:* U.S. Fish and Wildlife Service

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* T  
*Enumerated\_Domain\_Value\_Definition:* Threatened on state or federal list  
*Enumerated\_Domain\_Value\_Definition\_Source:* U.S. Fish and Wildlife Service

*Attribute:*

*Attribute\_Label:* DATE\_PUB  
*Attribute\_Definition:*  
 Publication date of source material used to assign state and federal status values for each species, if used.  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric  
*Enumerated\_Domain\_Value\_Definition:* mmyyyy  
*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 (eg. 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 Hawaii

##### *Distribution\_Liability:*

Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer input peripherals, or when the physical medium is delivered in damaged condition.

##### *Custom\_Order\_Process:*

Contact NOAA for distribution options (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI\_Viewer product are also included on the distribution CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

---

#### *Metadata\_Reference\_Information:*

*Metadata\_Date*: 200111

*Metadata\_Review\_Date*: 200111

*Metadata\_Contact*:

##### *Contact\_Information:*

*Contact\_Person\_Primary:**Contact\_Person:* Jill Petersen*Contact\_Organization:* NOAA, Office of Response and Restoration*Contact\_Position:* GIS Manager*Contact\_Address:**Address\_Type:* Physical Address*Address:* 7600 Sand Point Way, N.E.*City:* Seattle*State\_or\_Province:* Washington*Postal\_Code:* 98115-6349*Contact\_Voice\_Telephone:* (206) 526-6944*Contact\_Facsimile\_Telephone:* (206) 526-6329*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov*Metadata\_Standard\_Name:* Content Standards for Digital Geospatial Metadata*Metadata\_Standard\_Version:* FGDC-STD-001-1998

# Hawaii ESI: FISH (Fish Polygons)

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

##### *Originator:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

*Publication\_Date:* 200111

*Title:* Hawaii ESI: FISH (Fish Polygons)

*Edition:* Second

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

##### *Series\_Information:*

*Series\_Name:* None

*Issue\_Identification:* Hawaii

##### *Publication\_Information:*

*Publication\_Place:* Seattle, Washington

##### *Publisher:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

##### *Other\_Citation\_Details:*

Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

### *Description:*

#### *Abstract:*

This data set contains sensitive biological resource data for reef, marine, estuarine, and native stream fish species in coastal Hawaii. Vector polygons in this data set represent fish 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 Hawaii. 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 FISHPT (Fish Points) data layer, part of the larger Hawaii 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:* 2000

*Ending\_Date:* 2001

*Currentness\_Reference:*

The biological data were compiled during 2000-2001. The currentness dates for these data range from 1968 to 2001 and are documented in the Source\_Information section.

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* None Scheduled

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -179.278

*East\_Bounding\_Coordinate:* -154.598

*North\_Bounding\_Coordinate:* 29.252

*South\_Bounding\_Coordinate:* 18.713

*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:* Hawaii

*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:*

Relationships between spatial data layers and attribute data tables for the Hawaii ESI data.

*Browse\_Graphic\_File\_Type:* JPEG

*Data\_Set\_Credit:*

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

*Native\_Data\_Set\_Environment:*

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20), and PC's with Windows Operating System (NT4.0/2000). The Spatial\_Data\_Organization\_Information section refers only to the source files in the ARC export format. The following files are included in that data set: bathy.e00, birds.e00, bio\_lut.e00, biofile.e00, biores.e00, breed.e00, breed\_dt.e00, cass\_pt.e00, esi.e00, fish.e00, fishpt.e00, habitats.e00, habpt.e00, hydro.e00, index.e00, invert.e00, invertpt.e00, m\_mammals.e00, m\_mampt.e00, mgt.e00, nests.e00, pools.e00, reptiles.e00, reptpt.e00, seasonal.e00, soc\_dat.e00, soc\_lut.e00, socecon.e00, sources.e00, species.e00, status.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, socecon, sources, species, and status.

*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

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

*Logical\_Consistency\_Report:*

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

#### *Completeness\_Report:*

These data represent a synthesis of expert knowledge and available hardcopy reports on fish distribution. Refer to the FISHT (Fish Points) data layer for additional information on native stream and anchialine pool fish species. These data do not represent all fish occurrences in the state of Hawaii. The following species are included in this data set (Species\_ID, Common Name, Scientific Name, if applicable): 116, Striped mullet, *Mugil cephalus*; 131, Great barracuda, *Sphyrna barracuda*; 132, Groupers; 136, Dolphin, *Coryphaena hippurus*; 258, Hawaiian anchovy, *Encrasicholina purpurea*; 295, Halfbeak, *Hyporhamphus unifasciatus*; 306, Gray snapper, *Lutjanus griseus*; 315, Blacktip shark, *Carcharhinus limbatus*; 331, Sharks; 346, Mackerel scad, *Decapterus macarellus*; 356, Greater amberjack, *Seriola dumerili*; 365, Rare fish; 384, Spotted eagle ray, *Aetobatus narinari*; 420, Convict tang, *Acanthurus triostegus*; 421, Yellowfin surgeonfish, *Acanthurus xanthopterus*; 438, Scalloped hammerhead, *Sphyrna lewini*; 499, Mackerels, *Scomberomorus* spp.; 523, Swordfish, *Xiphias gladius*; 525, Bonefish, *Albula vulpes*; 561, Angelfish; 562, Barracuda; 566, Tunas; 574, Milkfish, *Chanos chanos*; 603, Galapagos shark, *Carcharhinus galapagensis*; 622, 'O'opu akupa (goby), *Eleotris sandwicensis*; 623, 'O'opu alamo'o (goby), *Lentipes concolor*; 624, 'O'opu nakea (goby), *Awaous guamensis*; 625, 'O'opu naniha (goby), *Stenogobius hawaiiensis*; 626, 'O'opu nopili (goby), *Sicyopterus stimpsoni*; 628, Yellowstripe goatfish, *Mulloidichthys flavolineatus*; 629, Goldspot herring, *Herklotsichthys quadrimaculatus*; 630, Hawaiian ladyfish, *Elops hawaiiensis*; 631, Bigeye scad, *Selar crumenophthalmus*; 632, Hawaiian flagtail, *Kuhlia sandwicensis*; 633, Pink snapper, *Pristipomoides filamentosus*; 634, Bigeye emperor, *Monotaxis grandoculis*; 635, Threadfin, *Polydactylus sexfilis*; 637, Sharpnose mullet, *Neomysus leuciscus*; 638, Wahoo, *Acanthocybium solandri*; 641, Gold-ring surgeonfish, *Ctenochaetus strigosus*; 642, Saddle wrasse, *Thalassoma duperrey*; 643, Yellow tang, *Zebrasoma flavescens*; 644, Hawaiian silverside, *Atherinomorus insularum*; 645, Heller's barracuda, *Sphyrna helleri*; 646, Whitetip reef shark, *Triaenodon obesus*; 651, Achilles surgeonfish, *Acanthurus achilles*; 652, Big-scale soldierfish, *Myripristis berndti*; 653, Blueline surgeonfish, *Acanthurus nigroris*; 654, Bluespine unicornfish, *Naso unicornis*; 655, Bullethead parrotfish, *Scarus sordidus*; 656, Eyestripe surgeonfish, *Acanthurus dussumieri*; 657, Hawaiian domino damselfish, *Dascyllus albisella*; 658, Hawaiian garden eel, *Gorgasia hawaiiensis*; 659, Longnose butterflyfish, *Forcipiger longirostris*; 660, Manybar goatfish, *Parupeneus multifasciatus*; 661, Moorish idol, *Zanclus cornutus*; 662, Multiband butterflyfish, *Chaetodon multicinctus*; 663, Ornate butterflyfish, *Chaetodon ornatissimus*; 664, Orangespine unicornfish, *Naso lituratus*; 665, Pacific gregory, *Stegastes fasciolatus*; 666, Potter's angelfish, *Centropyge potteri*; 667, Regal parrotfish, *Scarus dubius*; 668, Ringtail wrasse, *Cheilinus unifasciatus*; 669, Sleek unicornfish, *Naso hexacanthus*; 670, Spectacled parrotfish, *Chlorurus perspicillatus*; 671, Spotted unicornfish, *Naso brevirostris*; 672, Threespot chromis, *Chromis verater*; 673, White ulua, *Carangoides ajax*; 674, Whitebar surgeonfish, *Acanthurus leucopareus*; 675, Whitespotted surgeonfish, *Acanthurus guttatus*; 676, White-tail damselfish, *Chromis leucurus*; 677, Yellowfin moray, *Gymnothorax flavimarginatus*; 678, Orangeband surgeonfish, *Acanthurus olivaceus*; 679, Gray reef shark, *Carcharhinus amblyrhynchus*; 680, Hawaiian black grouper, *Epinephelus quernus*; 683, Leatherback, *Scomberoides lysan*; 687, Giant trevally, *Caranx ignobilis*; 691, Masked angelfish, *Genicanthus personatus*; 692, Yellowspotted jack, *Carangoides orthogrammus*; 693, Bluefin trevally, *Caranx melampygus*; 694, Bigeye jack, *Caranx*

sexfasciatus; 695, Golden trevally, Gnathanodon speciosus; 696, Thicklipped jack, Pseudocaranx dentex; 1001, Blennies; 1002, Reef fish; 1007, Parrotfish; 1008, Jacks; 1009, Damselfish; 1010, Wrasses; 1019, Snappers; 1025, Butterflyfish; 1026, Cardinalfish; 1027, Filefish; 1028, Goatfish; 1029, Gobies; 1030, Hawkfish; 1031, Moray eels; 1032, Puffers; 1033, Squirrelfish; 1034, Surgeonfish; 1035, Triggerfish; 1036, Trunkfish; 1037, Rudderfish; 1038, Bigeyes; 1039, Boxfish; 1040, Moorish idols; 1041, Trumpetfish; 1042, Needlefish; 1043, Sprat; 1044, Conger eels; 1045, Scorpionfish; 1046, Flying fish; 1047, Marlins; 1048, Porcupinefish; 1050, Cornetfish; 1051, Soldierfish; 1052, Knifejaws; 1053, Lizardfish; 1054, Yellowfin goatfish, Mulloidichthys vanicolensis; 1055, Manta rays; 1056, Moonfish; 1057, Gray mullets; 1058, Emperors.

*Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy\_Report:*

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

*Lineage:*

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Gulko, D. (Department of Land and Natural Resources, Oahu)

*Publication\_Date:* Unpublished Material

*Title:*

Coral, Fish, Invertebrate, Sea Turtle, and Marine Mammal Concentration Areas;  
Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Fish information

*Source\_Information:*

*Source\_Citation:**Citation\_Information:**Originator:* Oishi, F. (Department of Land and Natural Resources, Oahu)*Publication\_Date:* Unpublished Material*Title:*Fish, Invertebrate, Benthic Habitats, Reptile Distribution and Seasonality;  
Socioeconomic locations*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Fish information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Oishi, F. and A. Everson*Publication\_Date:* Unpublished Material*Title:*Fish, Invertebrate, and Sea Turtle Distribution and Seasonality for Oahu/  
Northwestern Hawaiian Islands; Socioeconomic locations*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Fish information*Source\_Information:*

*Source\_Citation:**Citation\_Information:**Originator:* Everson, A. (National Marine Fisheries Service, Oahu)*Publication\_Date:* Unpublished Material*Title:*

Fish and Invertebrate Distribution and Seasonality; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Fish information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Swenson, C. (U.S. Fish and Wildlife Service, Oahu)*Publication\_Date:* Unpublished Material*Title:*Plant, Bird, Marine Mammal, Sea Turtle, Fish, and Invertebrate Concentration  
Areas*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Fish information*Source\_Information:**Source\_Citation:*

*Citation\_Information:**Originator:* AECOS, Inc.*Publication\_Date:* 1979*Title:* Oahu Coral Reef Inventory, Part B.*Geospatial\_Data\_Presentation\_Form:* Hardcopy text*Publication\_Information:**Publication\_Place:* Honolulu, HI*Publisher:* Prep. for U.S. Army Corps of Engineers, Honolulu Dist.*Type\_of\_Source\_Media:* Paper*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 1979*Source\_Currentness\_Reference:* Date of publication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Fish information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Smith, G. (U.S. Fish and Wildlife Service, Oahu)*Publication\_Date:* Unpublished Material*Title:* Native Stream and Estuarine Species Distribution*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Fish information*Source\_Information:**Source\_Citation:*

*Citation\_Information:**Originator:*

Nishimoto, R. (Department of Land and Natural Resources, Hilo, Hawaii)

*Publication\_Date:* Unpublished Material*Title:*Fish, Invertebrate, Coral, Reptile, Bird Distribution; Fish/Invertebrate  
Seasonality; Socioeconomic locations*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Fish information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Heacock, D. (Department of Land and Natural Resources, Kauai)*Publication\_Date:* Unpublished Material*Title:*Coral, Fish, Invertebrate, Bird, Reptile, and Marine Mammal Distribution for  
Kauai*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Fish information*Source\_Information:**Source\_Citation:*

*Citation\_Information:**Originator:* Manoa Mapworks; AECOS, Inc.*Publication\_Date:* 1983*Title:*

Kauai Coastal Resource Atlas; Kauai Island Coastal Resource Inventory (KICRI).

*Geospatial\_Data\_Presentation\_Form:* Hardcopy text/maps*Publication\_Information:**Publication\_Place:* Fort Shafter, HI*Publisher:*

Prep. for the U.S. Corps of Engineers, Pacific Ocean Div., Fort Shafter, HI, 279 pp.; Prep. for U.S. Army Corps of Engineers, Pacific Ocean Div.

*Source\_Scale\_Denominator:* 6000*Type\_of\_Source\_Media:* Paper*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Multiple\_Dates/Times:**Single\_Date/Time:**Calendar\_Date:* 1982*Single\_Date/Time:**Calendar\_Date:* 1983*Source\_Currentness\_Reference:* Date of publication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Fish information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Yamamoto, M.N. and A.W. Tagara*Publication\_Date:* Unpublished Material*Title:* Hawaii's Native and Exotic Freshwater Animals*Geospatial\_Data\_Presentation\_Form:* Hardcopy text*Publication\_Information:**Publication\_Place:* Honolulu, HI*Publisher:* Mutual Publishing*Type\_of\_Source\_Media:* Paper*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Fish information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Friedlander, A. (Oceanic Institute)

*Publication\_Date:* Unpublished Material

*Title:* Fish Distribution for the Northwestern Hawaiian Islands

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Fish information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Puleloa, W. (Department of Land and Natural Resources, Molokai)

*Publication\_Date:* Unpublished Material

*Title:*

Fish, Invertebrate, and Sea Turtle Distribution for Molokai; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Fish information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Ford, J. and A. Yuen

*Publication\_Date:* 1988

*Title:*

Natural History of Pelekunu Stream and its Tributaries. Island of Molokai, HI.

*Geospatial\_Data\_Presentation\_Form:* Hardcopy text

*Publication\_Information:*

*Publication\_Place:* Hawaii

*Publisher:* Part I, Summary Report

*Type\_of\_Source\_Media:* Paper

*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:* Kalilikane, M.

*Publication\_Date:* Unpublished Material

*Title:*

Commercial/ Recreational/ Subsistence Fish Species Distribution for Molokai

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Fish information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Hau, S. (Department of Land and Natural Resources, Maui)

*Publication\_Date:* Unpublished Material

*Title:*

Fish, Invertebrate, Reptile, and Marine Mammal Distribution for Maui

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Fish information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* AECOS, Inc.

*Publication\_Date:* 1981

*Title:*

Hawaii Coral Reef Inventory, Island of Maui (Maui Island Coral Reef Inventory), Part B.

*Geospatial\_Data\_Presentation\_Form:* Hardcopy maps

*Publication\_Information:*

*Publication\_Place:* Honolulu, HI

*Publisher:* U.S. Army Corps of Engineers, Honolulu Dist.

*Source\_Scale\_Denominator:* unknown

*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1981

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Fish information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Brown, E. (University of Hawaii, Maui)

*Publication\_Date:* Unpublished Material

*Title:*

Coral, Algae, Reptile, Marine Mammal, Invertebrate, and Fish Distribution for  
 Maui; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Fish information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Nakai, G. (U.S. Fish and Wildlife Service, Maui)

*Publication\_Date:* Unpublished Material

*Title:*

Bird and Fish Distribution and Sea Turtle Nesting in Kealia Pond National  
 Wildlife Refuge

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Fish information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Jokiel, P., E.F Cox, and M.P. Crosby

*Publication\_Date:* 1995

*Title:*

An Evaluation of the Nearshore Coral Resources of Kahoolawe, Hawaii

*Geospatial\_Data\_Presentation\_Form:* Digital report

*Publication\_Information:*

*Publication\_Place:* Hawaii

*Publisher:*

[http://cramp.wcc.hawaii.edu/Study\\_Sites/Kahoolawe/  
 An\\_Evaluation\\_of\\_the\\_Nearshore\\_Coral\\_Reef\\_Resources\\_of\\_Kahoolawe/  
 default.asp](http://cramp.wcc.hawaii.edu/Study_Sites/Kahoolawe/An_Evaluation_of_the_Nearshore_Coral_Reef_Resources_of_Kahoolawe/default.asp)

*Type\_of\_Source\_Media:* On-line  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1995

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Fish information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:*

Carman, B. (Department of Land and Natural Resources, Kona, Hawaii)

*Publication\_Date:* Unpublished Material*Title:*

Distribution of Aquatic Resources for the Big Island; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Fish information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Nolan, R.S. and D.P. Cheney*Publication\_Date:* 1981*Title:* West Hawaii Coral Reef Inventory.*Geospatial\_Data\_Presentation\_Form:* Document*Publication\_Information:**Publication\_Place:* Honolulu, HI*Publisher:* Prep. for U.S. Army Corps of Engineers, Honolulu Dist.*Type\_of\_Source\_Media:* Paper*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 1981*Source\_Currentness\_Reference:* Date of publication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Fish information*Source\_Information:**Source\_Citation:*

*Citation\_Information:**Originator:* Doty, M.S.*Publication\_Date:* 1968*Title:* Biological and Physical Features of Kealahou Bay, Hawaii.*Geospatial\_Data\_Presentation\_Form:* Document*Publication\_Information:**Publication\_Place:* Honolulu, HI*Publisher:* University of Hawaii*Type\_of\_Source\_Media:* Paper*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 1968*Source\_Currentness\_Reference:* Date of publication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Fish information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:*

Hendricks, P. (Department of Land and Natural Resources, retired)

*Publication\_Date:* Unpublished Material*Title:* Distribution of Aquatic Resources for the Big Island*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Fish information*Source\_Information:**Source\_Citation:*

*Citation\_Information:**Originator:* Western Pacific Regional Fishery Management Council*Publication\_Date:* 2001*Title:* Fisheries of the Western Pacific Region, 1999 Annual Report*Geospatial\_Data\_Presentation\_Form:* Document*Publication\_Information:**Publication\_Place:* Honolulu, HI*Publisher:* Western Pacific Regional Fishery Management Council*Type\_of\_Source\_Media:* Paper*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 1999*Source\_Currentness\_Reference:* Date of survey*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Fish information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Doty, M.S.*Publication\_Date:* 1969*Title:* The Ecology of Honaunau Bay, Hawaii.*Geospatial\_Data\_Presentation\_Form:* Document*Publication\_Information:**Publication\_Place:* Honolulu, HI*Publisher:* University of Hawaii, Hawaii Botanical Science Paper No. 14.*Type\_of\_Source\_Media:* Paper*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 1969*Source\_Currentness\_Reference:* Date of publication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Fish information

*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Western Pacific Regional Fishery Management Council*Publication\_Date:* 1998*Title:* 4.3.1 Essential Fish Habitat Designations*Geospatial\_Data\_Presentation\_Form:* Document*Publication\_Information:**Publisher:*

Magnuson-Stevens Act Definitions and Required Provisions (WPRFMC 9/98)

*Type\_of\_Source\_Media:* Paper*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 1998*Source\_Currentness\_Reference:* Date of publication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Fish information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Bail, L. (Bubbles Below, Inc.)*Publication\_Date:* Unpublished Material*Title:*

Distribution of Aquatic Resources Around Kauai and Niihau; Dive Sites

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2001*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Fish information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Brock, R.E.

*Publication\_Date:* 1995

*Title:*

Fish Communities of the Nu'upia Fishponds, Nu'upia Wildlife Management Area, Mokapu, Oahu, Hawaii.

*Geospatial\_Data\_Presentation\_Form:* Document

*Publication\_Information:*

*Publication\_Place:* Hawaii

*Publisher:*

In R.M. Towill Corporation, Final report: Environmental study of Nu'upia Ponds Wildlife Management Area Marine Corps Base Hawaii, Kaneohe Bay: Prep. for the U.S. Army Corps of Engineers, Pacific Ocean Div., p. 26.

*Type\_of\_Source\_Media:* Paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1995

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Fish information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:*

Department of Land and Natural Resources (DLNR), Division of Aquatic Resources (DAR)

*Publication\_Date:* 2000

*Title:* Hawaii Fishing Regulations, August 2000.

*Geospatial\_Data\_Presentation\_Form:* Document

*Publication\_Information:*

*Publication\_Place:* Honolulu, HI

*Publisher:* Department of Land and Natural Resources

*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Fish information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Department of Land and Natural Resources, DAR; Hilo, Hawaii

*Publication\_Date:* 2001

*Title:*

Fish, Invertebrate, and Sea Turtle Distribution; Fish and Invertebrate Seasonality

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2001

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Fish information

*Process\_Step:*

*Process\_Description:*

Two main sources of data were used to depict fish distribution for this data layer: 1) personal interviews with resource experts from the Division of Land and Natural Resources (DLNR), the National Marine Fisheries Service (NMFS), the U.S. Fish and Wildlife Service, and other agencies; and 2) various hardcopy reports and books. Personal interviews with resource experts from DLNR and NMFS were the primary sources of data used to depict fish distribution for this data layer. Information gathered during a set of interviews was compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles. A second set of interviews was conducted following the data compilation phase, and edits were made based on recommendations by the resource experts. Various publications were used to supplement the information on species composition, seasonality, and concentration that was provided by the resource experts

*Process\_Date:* 200111

*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

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* GT-polygon composed of rings

*Point\_and\_Vector\_Object\_Count:* 2229

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Area point

*Point\_and\_Vector\_Object\_Count:* 2229

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Complete chain

*Point\_and\_Vector\_Object\_Count:* 4494

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Link

*Point\_and\_Vector\_Object\_Count:* 1004404

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Node, planar graph

*Point\_and\_Vector\_Object\_Count:* 4324

*Spatial\_Reference\_Information:**Horizontal\_Coordinate\_System\_Definition:**Geographic:**Latitude\_Resolution:* 0.00005*Longitude\_Resolution:* 0.00005*Geographic\_Coordinate\_Units:* Decimal degrees*Geodetic\_Model:**Horizontal\_Datum\_Name:* Old Hawaiian Datum*Ellipsoid\_Name:* Clarke 1866*Semi-major\_Axis:* 6378206.4*Denominator\_of\_Flattening\_Ratio:* 294.9786982*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 Hawaii, it is 65), 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, T\_E, 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 spatial data layer FISH contains vector polygons representing fish 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 (65), 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:* 650200002

*Range\_Domain\_Maximum:* 650202229

*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:* 65000179

*Range\_Domain\_Maximum:* 65000291

*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:* 65000001

*Range\_Domain\_Maximum:* 65000977

*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 (65), 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:* 650100002

*Range\_Domain\_Maximum:* 653700236

*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*: 650100002

*Range\_Domain\_Maximum*: 653700236

*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. The descriptive terms "VERY HIGH" and "HIGH" were used to describe the relative abundance of particular fish species at specific locations. In cases where no qualitative description was available, the field is blank.

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: Any character

*Enumerated\_Domain\_Value\_Definition*: Free text

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*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 (eg. 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 (eg. 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 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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Species scientific name for the entire ESI data set

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:**Attribute\_Label:* GEN\_SPEC*Attribute\_Definition:* Species scientific name*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Species scientific name for the entire ESI data set*Enumerated\_Domain\_Value\_Definition:* Free text*Enumerated\_Domain\_Value\_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:* SUBELEMENT

*Attribute\_Definition:*

Element subgroup delineating a logical grouping of the 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:* algae  
*Enumerated\_Domain\_Value\_Definition:* Algae habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* alligator  
*Enumerated\_Domain\_Value\_Definition:* Alligator or crocodile  
*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:* barnacle  
*Enumerated\_Domain\_Value\_Definition:* Barnacle  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bat  
*Enumerated\_Domain\_Value\_Definition:* Bat  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bear  
*Enumerated\_Domain\_Value\_Definition:* Bear  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bird  
*Enumerated\_Domain\_Value\_Definition:* Bird  
*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:* canine  
*Enumerated\_Domain\_Value\_Definition:* Canine  
*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:* chordate  
*Enumerated\_Domain\_Value\_Definition:* Chordate  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* coral  
*Enumerated\_Domain\_Value\_Definition:* Coral habitat, community, or species  
*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:* crayfish  
*Enumerated\_Domain\_Value\_Definition:* Crayfish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* diadromous  
*Enumerated\_Domain\_Value\_Definition:* Diadromous fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* diving  
*Enumerated\_Domain\_Value\_Definition:* Diving bird  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* e\_nursery  
*Enumerated\_Domain\_Value\_Definition:* Estuarine nursery fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* e\_resident  
*Enumerated\_Domain\_Value\_Definition:* Estuarine resident fish  
*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:* fav  
*Enumerated\_Domain\_Value\_Definition:* Floating aquatic vegetation  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* feline  
*Enumerated\_Domain\_Value\_Definition:* Feline  
*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:* freshwater

*Enumerated\_Domain\_Value\_Definition:* Freshwater fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* frog  
*Enumerated\_Domain\_Value\_Definition:* Frog  
*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:* hardbottom  
*Enumerated\_Domain\_Value\_Definition:* Hardbottom habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* landfowl  
*Enumerated\_Domain\_Value\_Definition:* Landfowl  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* lizard  
*Enumerated\_Domain\_Value\_Definition:* Lizard  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* lobster  
*Enumerated\_Domain\_Value\_Definition:* Lobster  
*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:* m\_resident  
*Enumerated\_Domain\_Value\_Definition:* Marine resident fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* passerine  
*Enumerated\_Domain\_Value\_Definition:* Passerine or passerine-like 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:* polar bear  
*Enumerated\_Domain\_Value\_Definition:* Polar bear  
*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:* reef  
*Enumerated\_Domain\_Value\_Definition:* Reef habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* sav  
*Enumerated\_Domain\_Value\_Definition:* Submersed 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:* shellfish  
*Enumerated\_Domain\_Value\_Definition:* Shellfish  
*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:* Shrimp  
*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:* snake  
*Enumerated\_Domain\_Value\_Definition:* Snake  
*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:* upland

*Enumerated\_Domain\_Value\_Definition:* Upland habitat, plant community, or plant species

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* wading

*Enumerated\_Domain\_Value\_Definition:* Wading bird

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* waterfowl

*Enumerated\_Domain\_Value\_Definition:* Waterfowl

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* wetland

*Enumerated\_Domain\_Value\_Definition:* Wetland habitat, plant community, or plant species

*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:* 0

*Enumerated\_Domain\_Value\_Definition:* Not ranked

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric

*Enumerated\_Domain\_Value\_Definition:* mmyyyy

*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 (eg. 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 (eg. 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 (eg. 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/mating; if ELEMENT is "REPTILE" then BREED1 = nesting; if ELEMENT is "M\_MAMMAL" then BREED1 = mating. This attribute is not used for T\_MAMMAL or HABITAT elements except when SUBELEMENT is "coral," then BREED1 = spawning.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Y

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* N

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:**Enumerated\_Domain\_Value:* -*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* BREED2*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED2 = laying; if ELEMENT is "FISH" then BREED2 = eggs; if ELEMENT is "INVERT" then BREED2 = eggs; if ELEMENT is "REPTILE" then BREED2 = hatching; if ELEMENT is "M\_MAMMAL" then BREED2 = calving. This attribute is not used for T\_MAMMAL or HABITAT elements except when SUBELEMENT is "coral," then BREED2 = juvenile.

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Y*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* N*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* -*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* BREED3*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Y  
*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* N  
*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* -  
*Enumerated\_Domain\_Value\_Definition:*  
 Breed category not used or not appropriate for record(s) in question  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* BREED4

*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED4 = fledging; if ELEMENT is "FISH" then BREED4 = juvenile; if ELEMENT is "INVERT" then BREED4 = juvenile; if ELEMENT is "REPTILE" then BREED4 = juvenile; if ELEMENT is "M\_MAMMAL" then BREED4 = molting. This attribute is not used for HABITAT or T\_MAMMAL elements.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Y  
*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* N  
*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* -  
*Enumerated\_Domain\_Value\_Definition:*

Breed category not used or not appropriate for record(s) in question  
*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute:*

*Attribute\_Label*: BREED5

*Attribute\_Definition*:

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

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: Y

*Enumerated\_Domain\_Value\_Definition*: Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: N

*Enumerated\_Domain\_Value\_Definition*: Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: -

*Enumerated\_Domain\_Value\_Definition*:

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

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Detailed\_Description*:

*Entity\_Type*:

*Entity\_Type\_Label*: SOURCES

*Entity\_Type\_Definition*:

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

*Entity\_Type\_Definition\_Source*: Research Planning, Inc.

*Attribute*:

*Attribute\_Label*: SOURCE\_ID

*Attribute\_Definition*:

Source identifier that links records in the SOURCES data table to the items G\_SOURCE and A\_SOURCE in the SOC\_DAT table, and to G\_SOURCE and S\_SOURCE in the BIORES

table.

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Range\_Domain*:

*Range\_Domain\_Minimum*: 1

*Range\_Domain\_Maximum*: N

*Attribute*:

*Attribute\_Label*: ORIGINATOR

*Attribute\_Definition*: Author or developer of source material or data set

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: Any character

*Enumerated\_Domain\_Value\_Definition*: Free text

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*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*: Numeric

*Enumerated\_Domain\_Value\_Definition*: mmyyyy

*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*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: Any character

*Enumerated\_Domain\_Value\_Definition*: Free text

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute*:

*Attribute\_Label*: DATA\_FORMAT

*Attribute\_Definition*: The format of the source material

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain:**Enumerated\_Domain\_Value:* Any character*Enumerated\_Domain\_Value\_Definition:* Free text*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* PUBLICATION*Attribute\_Definition:* Additional citation information*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Any character*Enumerated\_Domain\_Value\_Definition:* Free text*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* SCALE*Attribute\_Definition:* Scale denominator of the source*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* integer*Enumerated\_Domain\_Value\_Definition:* Any integer*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* TIME\_PERIOD*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Numeric*Enumerated\_Domain\_Value\_Definition:* yyyy*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Detailed\_Description:**Entity\_Type:**Entity\_Type\_Label:* STATUS*Entity\_Type\_Definition:*

The data table STATUS identifies the species that are listed as either threatened or

endangered by a state or federal authority. See the Browse\_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.

*Entity\_Type\_Definition\_Source*: Research Planning, Inc.

*Attribute*:

*Attribute\_Label*: ELEMENT

*Attribute\_Definition*: Major categories of biological data

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: BIRD

*Enumerated\_Domain\_Value\_Definition*: Birds

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: FISH

*Enumerated\_Domain\_Value\_Definition*: Fish

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: HABITAT

*Enumerated\_Domain\_Value\_Definition*: Habitats and Plants

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: INVERT

*Enumerated\_Domain\_Value\_Definition*: Invertebrates

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: M\_MAMMAL

*Enumerated\_Domain\_Value\_Definition*: Marine Mammals

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value:* REPTILE  
*Enumerated\_Domain\_Value\_Definition:* Reptiles and Amphibians  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* T\_MAMMAL  
*Enumerated\_Domain\_Value\_Definition:* Terrestrial Mammals  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SPECIES\_ID

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 1  
*Range\_Domain\_Maximum:* N

*Attribute:*

*Attribute\_Label:* STATE

*Attribute\_Definition:* Two-letter state abbreviation

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character  
*Enumerated\_Domain\_Value\_Definition:* Two-letter state abbreviation  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* S\_F

*Attribute\_Definition:* State and Federal status.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* F  
*Enumerated\_Domain\_Value\_Definition:* Federally listed  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* S  
*Enumerated\_Domain\_Value\_Definition:* State listed  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* S/F  
*Enumerated\_Domain\_Value\_Definition:* State and federally listed  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* T\_E  
*Attribute\_Definition:* Threatened and endangered status.  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* E  
*Enumerated\_Domain\_Value\_Definition:* Endangered on state or federal list  
*Enumerated\_Domain\_Value\_Definition\_Source:* U.S. Fish and Wildlife Service

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* T  
*Enumerated\_Domain\_Value\_Definition:* Threatened on state or federal list  
*Enumerated\_Domain\_Value\_Definition\_Source:* U.S. Fish and Wildlife Service

*Attribute:*

*Attribute\_Label:* DATE\_PUB  
*Attribute\_Definition:*  
 Publication date of source material used to assign state and federal status values for each species, if used.  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric  
*Enumerated\_Domain\_Value\_Definition:* mmyyyy  
*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 (eg. 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 Hawaii

*Distribution\_Liability*:

Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer input peripherals, or when the physical medium is delivered in damaged condition.

*Custom\_Order\_Process*:

Contact NOAA for distribution options (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI\_Viewer product are also included on the distribution CD's 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:* 200111*Metadata\_Review\_Date:* 200111*Metadata\_Contact:**Contact\_Information:**Contact\_Person\_Primary:**Contact\_Person:* Jill Petersen*Contact\_Organization:* NOAA, Office of Response and Restoration*Contact\_Position:* GIS Manager*Contact\_Address:**Address\_Type:* Physical Address*Address:* 7600 Sand Point Way, N.E.*City:* Seattle*State\_or\_Province:* Washington*Postal\_Code:* 98115-6349*Contact\_Voice\_Telephone:* (206) 526-6944*Contact\_Facsimile\_Telephone:* (206) 526-6329*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov*Metadata\_Standard\_Name:* Content Standards for Digital Geospatial Metadata*Metadata\_Standard\_Version:* FGDC-STD-001-1998

# Hawaii ESI: FISHPT (Fish Points)

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

##### *Originator:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

*Publication\_Date:* 200111

*Title:* Hawaii ESI: FISHPT (Fish Points)

*Edition:* Second

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

##### *Series\_Information:*

*Series\_Name:* None

*Issue\_Identification:* Hawaii

##### *Publication\_Information:*

*Publication\_Place:* Seattle, Washington

##### *Publisher:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

##### *Other\_Citation\_Details:*

Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

### *Description:*

#### *Abstract:*

This data set contains sensitive biological resource data for native stream and anchialine pool fish species in coastal Hawaii. (Anchialine pools are small, relatively shallow coastal ponds that occur singly or in groups close to the shoreline. They have direct connections to the ocean either through surface channels or through subsurface cracks and fissures in the lava flows, and they experience

regular tidal fluctuations in water levels.) Vector points in this data set represent species occurrences at stream mouths and in anchialine pools. 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 Hawaii. 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 data layer, part of the larger Hawaii 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:* 2000

*Ending\_Date:* 2001

*Currentness\_Reference:*

The biological data were compiled during 2000-2001. The currentness dates for these data range from 1988 to 2001 and are documented in the Source\_Information section.

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* None Scheduled

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -179.278

*East\_Bounding\_Coordinate:* -154.598

*North\_Bounding\_Coordinate:* 29.252

*South\_Bounding\_Coordinate:* 18.713

*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:* Hawaii

*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:*

Relationships between spatial data layers and attribute data tables for the Hawaii ESI data.

*Browse\_Graphic\_File\_Type:* JPEG

*Data\_Set\_Credit:*

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

*Native\_Data\_Set\_Environment:*

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20), and PC's with Windows Operating System (NT4.0/2000). The *Spatial\_Data\_Organization\_Information* section refers only to the source files in the ARC export format. The following files are included in that data set: bathy.e00, birds.e00, bio\_lut.e00, biofile.e00, biores.e00, breed.e00, breed\_dt.e00, cass\_pt.e00, esi.e00, fish.e00, fishpt.e00, habitats.e00, habpt.e00, hydro.e00, index.e00, invert.e00, invertpt.e00, m\_mammals.e00, m\_mampt.e00, mgt.e00, nests.e00, pools.e00, reptiles.e00, reptpt.e00, seasonal.e00, soc\_dat.e00, soc\_lut.e00, socecon.e00, sources.e00, species.e00, status.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, socecon, sources, species, and status.

*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

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

methodology used to collect and compile such data. For a more detailed evaluation of source data attribute accuracy, contact the sources listed in the Lineage section.

#### *Logical\_Consistency\_Report:*

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

#### *Completeness\_Report:*

These data represent a synthesis of expert knowledge and available hardcopy reports on native stream fish species distribution, and digital anchialine pool fish species locations. Refer to the FISH data layer for additional information on the occurrence of native stream fish species. These data do not represent all native stream and anchialine pool fish species occurrences in the state of Hawaii. The following species are included in this data set (Species\_ID, Common Name, Scientific Name, if applicable): 116, Striped mullet, *Mugil cephalus*; 622, 'O'opu akupa (goby), *Eleotris sandwicensis*; 623, 'O'opu alamo'o (goby), *Lentipes concolor*; 624, 'O'opu nakea (goby), *Awaous guamensis*; 625, 'O'opu naniha (goby), *Stenogobius hawaiiensis*; 626, 'O'opu nopili (goby), *Sicyopterus stimpsoni*; 632, Hawaiian flagtail, *Kuhlia sandwicensis*; 681, Anchialine muraenid eel, *Gymnothorax hilonis*; 1057, Gray mullets; 1059, Native gobies.

#### *Positional\_Accuracy:*

##### *Horizontal\_Positional\_Accuracy:*

##### *Horizontal\_Positional\_Accuracy\_Report:*

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

#### *Lineage:*

##### *Source\_Information:*

##### *Source\_Citation:*

##### *Citation\_Information:*

*Originator:* Oishi, F. (Department of Land and Natural Resources, Oahu)

*Publication\_Date:* Unpublished Material

*Title:*

Fish, Invertebrate, Benthic Habitats, Reptile Distribution and Seasonality;  
Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Fish Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Oishi, F. and A. Everson

*Publication\_Date:* Unpublished Material

*Title:*

Fish, Invertebrate, and Sea Turtle Distribution and Seasonality for Oahu/  
Northwestern Hawaiian Islands; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Fish Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Smith, G. (U.S. Fish and Wildlife Service, Oahu)  
*Publication\_Date:* Unpublished Material  
*Title:* Native Stream and Estuarine Species Distribution  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Fish Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:*  
 Nishimoto, R. (Department of Land and Natural Resources, Hilo, Hawaii)  
*Publication\_Date:* Unpublished Material  
*Title:*  
 Fish, Invertebrate, Coral, Reptile, Bird Distribution; Fish/Invertebrate  
 Seasonality; Socioeconomic locations  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Fish Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Heacock, D. (Department of Land and Natural Resources, Kauai)

*Publication\_Date:* Unpublished Material

*Title:*

Coral, Fish, Invertebrate, Bird, Reptile, and Marine Mammal Distribution for  
Kauai

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Fish Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Yamamoto, M.N. and A.W. Tagara

*Publication\_Date:* Unpublished Material

*Title:* Hawaii's Native and Exotic Freshwater Animals

*Geospatial\_Data\_Presentation\_Form:* Hardcopy text

*Publication\_Information:*

*Publication\_Place:* Honolulu, HI

*Publisher:* Mutual Publishing

*Type\_of\_Source\_Media:* Paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Fish Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:**Originator:* Puleloa, W. (Department of Land and Natural Resources, Molokai)*Publication\_Date:* Unpublished Material*Title:*

Fish, Invertebrate, and Sea Turtle Distribution for Molokai; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Fish Information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Ford, J. and A. Yuen*Publication\_Date:* 1988*Title:*

Natural History of Pelekunu Stream and its Tributaries. Island of Molokai, HI.

*Geospatial\_Data\_Presentation\_Form:* Hardcopy text*Publication\_Information:**Publication\_Place:* Hawaii*Publisher:* Part I, Summary Report*Type\_of\_Source\_Media:* Paper*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:* Hau, S. (Department of Land and Natural Resources, Maui)*Publication\_Date:* Unpublished Material*Title:*

Fish, Invertebrate, Reptile, and Marine Mammal Distribution for Maui

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Fish Information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Hawaii Natural Heritage Program*Publication\_Date:* 2000*Title:*

Occurrences of Anchialine Pools, Fish, Invertebrates, Plants, and Sea Turtles

*Geospatial\_Data\_Presentation\_Form:* Vector digital data*Publication\_Information:**Publication\_Place:**Publisher:* Data contact: Roy Kam, Data Manager, 808/956-3744*Source\_Scale\_Denominator:* 24000*Type\_of\_Source\_Media:* Electronic mail*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Range\_of\_Dates/Times:**Beginning\_Date:* 1970*Ending\_Date:* 2000*Source\_Currentness\_Reference:* Dates of survey

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Fish Information

*Process\_Step:*

*Process\_Description:*

Two main sources of data were used for this data layer: 1) personal interviews with resource experts from the U.S. Fish and Wildlife Service, the Division of Land and Natural Resources (DLNR), and other agencies; and 2) Natural Heritage Program (NHP) occurrence data for anchialine pool fish species. Information on the distribution of native stream fish species at stream locations was gathered during a set of interviews and was compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles. Occurrences of native species in streams were mapped as points at the mouths of the streams. A second set of interviews was conducted following the data compilation phase, and edits were made based on recommendations by the resource experts. All NHP occurrences that were recorded between 1970-2000 of anchialine pool fish within 0.25 miles on and offshore were used in this data layer.

*Process\_Date:* 200111

*Process\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NOAA, Office of Response and Restoration

*Contact\_Person:* Jill Petersen

*Contact\_Address:*

*Address\_Type:* Physical address

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

*City:* Seattle

*State\_or\_Province:* Washington

*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944

*Contact\_Facsimile\_Telephone:* (206) 526-6329

*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Entity Point

*Point\_and\_Vector\_Object\_Count:* 194

*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:**Geographic:*

*Latitude\_Resolution:* 0.00005  
*Longitude\_Resolution:* 0.00005  
*Geographic\_Coordinate\_Units:* Decimal degrees

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* Old Hawaiian Datum  
*Ellipsoid\_Name:* Clarke 1866  
*Semi-major\_Axis:* 6378206.4  
*Denominator\_of\_Flattening\_Ratio:* 294.9786982

---

*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, FISHPT) 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 Hawaii, it is 65), 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, T\_E, 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:* FISHPT.PAT

*Entity\_Type\_Definition:*

The spatial data layer FISHPT contains vector points representing native stream and anchialine pool fish species in Hawaii. 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 (65), element number (32 [30 because it is a point feature, plus 2, the element value for FISH]), and record number.

*Attribute\_Definition\_Source:* NOAA

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 653200001

*Range\_Domain\_Maximum:* 653200194

*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:* 65000180

*Range\_Domain\_Maximum:* 65000232

*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.

*Attribute\_Definition\_Source*: NOAA

*Attribute\_Domain\_Values*:

*Range\_Domain*:

*Range\_Domain\_Minimum*: 65000001

*Range\_Domain\_Maximum*: 65000977

*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 (65), element number (32 [30 because it is a point feature, plus 2, the element value for FISH]), and record number.

*Attribute\_Definition\_Source*: NOAA

*Attribute\_Domain\_Values*:

*Range\_Domain*:

*Range\_Domain\_Minimum*: 650100002

*Range\_Domain\_Maximum*: 653700236

*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:* 650100002  
*Range\_Domain\_Maximum:* 653700236

*Attribute:*

*Attribute\_Label:* SPECIES\_ID

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 1  
*Range\_Domain\_Maximum:* N

*Attribute:*

*Attribute\_Label:* CONC

*Attribute\_Definition:*

The field CONC refers to "concentration," abundance, or density value of a species at a particular location. The descriptive term "HIGH" was used to describe the relative abundance of particular fish species at specific locations. In cases where no qualitative description was available, the field is blank.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*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 (eg. 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 (eg. 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*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Species common name for the entire ESI data set*Enumerated\_Domain\_Value\_Definition:* Free text*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* GEN\_SPEC*Attribute\_Definition:* Species scientific name*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:*

*Enumerated\_Domain:**Enumerated\_Domain\_Value:* Species scientific name for the entire ESI data set*Enumerated\_Domain\_Value\_Definition:* Free text*Enumerated\_Domain\_Value\_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:* SUBELEMENT

*Attribute\_Definition:*

Element subgroup delineating a logical grouping of the 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:* algae  
*Enumerated\_Domain\_Value\_Definition:* Algae habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* alligator  
*Enumerated\_Domain\_Value\_Definition:* Alligator or crocodile  
*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:* barnacle  
*Enumerated\_Domain\_Value\_Definition:* Barnacle  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bat  
*Enumerated\_Domain\_Value\_Definition:* Bat  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bear  
*Enumerated\_Domain\_Value\_Definition:* Bear  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bird  
*Enumerated\_Domain\_Value\_Definition:* Bird  
*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:* canine  
*Enumerated\_Domain\_Value\_Definition:* Canine  
*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:* chordate*Enumerated\_Domain\_Value\_Definition:* Chordate*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* coral*Enumerated\_Domain\_Value\_Definition:* Coral habitat, community, or species*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:* crayfish*Enumerated\_Domain\_Value\_Definition:* Crayfish*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* diadromous*Enumerated\_Domain\_Value\_Definition:* Diadromous fish*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* diving*Enumerated\_Domain\_Value\_Definition:* Diving bird*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* e\_nursery*Enumerated\_Domain\_Value\_Definition:* Estuarine nursery fish*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* e\_resident  
*Enumerated\_Domain\_Value\_Definition:* Estuarine resident fish  
*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:* fav  
*Enumerated\_Domain\_Value\_Definition:* Floating aquatic vegetation  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* feline  
*Enumerated\_Domain\_Value\_Definition:* Feline  
*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:* freshwater  
*Enumerated\_Domain\_Value\_Definition:* Freshwater fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* frog

*Enumerated\_Domain\_Value\_Definition:* Frog  
*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:* hardbottom  
*Enumerated\_Domain\_Value\_Definition:* Hardbottom habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* landfowl  
*Enumerated\_Domain\_Value\_Definition:* Landfowl  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* lizard  
*Enumerated\_Domain\_Value\_Definition:* Lizard  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* lobster  
*Enumerated\_Domain\_Value\_Definition:* Lobster  
*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:* m\_resident  
*Enumerated\_Domain\_Value\_Definition:* Marine resident fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* passerine  
*Enumerated\_Domain\_Value\_Definition:* Passerine or passerine-like 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:* polar bear  
*Enumerated\_Domain\_Value\_Definition:* Polar bear  
*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:* reef  
*Enumerated\_Domain\_Value\_Definition:* Reef habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* sav  
*Enumerated\_Domain\_Value\_Definition:* Submersed 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:* shellfish  
*Enumerated\_Domain\_Value\_Definition:* Shellfish  
*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:* Shrimp  
*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:* snake  
*Enumerated\_Domain\_Value\_Definition:* Snake  
*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:* upland  
*Enumerated\_Domain\_Value\_Definition:* Upland habitat, plant community, or plant species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* wading  
*Enumerated\_Domain\_Value\_Definition:* Wading bird  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* waterfowl  
*Enumerated\_Domain\_Value\_Definition:* Waterfowl  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* wetland  
*Enumerated\_Domain\_Value\_Definition:* Wetland habitat, plant community, or plant species  
*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:* 0  
*Enumerated\_Domain\_Value\_Definition:* Not ranked  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric

*Enumerated\_Domain\_Value\_Definition:* mmyyyy

*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 (eg. 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 (eg. 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 (eg. 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/mating; if ELEMENT is "REPTILE" then BREED1 = nesting; if ELEMENT is "M\_MAMMAL" then BREED1 = mating. This attribute is not used for T\_MAMMAL or HABITAT elements except when SUBELEMENT is "coral," then BREED1 = spawning.

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Y*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* N*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* -*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* BREED2

*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED2 = laying; if ELEMENT is "FISH" then BREED2 = eggs; if ELEMENT is "INVERT" then BREED2 = eggs; if ELEMENT is "REPTILE" then BREED2 = hatching; if ELEMENT is "M\_MAMMAL" then BREED2 = calving. This attribute is not used for T\_MAMMAL or HABITAT elements except when SUBELEMENT is "coral," then BREED2 = juvenile.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Y

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* N

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* -

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* BREED3

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Y

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* N

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* -

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* BREED4

*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED4 = fledging; if ELEMENT is "FISH" then BREED4 = juvenile; if ELEMENT is "INVERT" then BREED4 = juvenile; if ELEMENT is "REPTILE" then BREED4 = juvenile; if ELEMENT is "M\_MAMMAL" then BREED4 = molting. This attribute is not used for HABITAT or T\_MAMMAL elements.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Y

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* N

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* -

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* BREED5

*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "FISH" then BREED5 = adults; if ELEMENT is "INVERT" then BREED5 = adults; if ELEMENT is "REPTILE" then

BREED5 = adults. This attribute is not used for BIRD, M\_MAMMAL, HABITAT or T\_MAMMAL elements.

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: Y

*Enumerated\_Domain\_Value\_Definition*: Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: N

*Enumerated\_Domain\_Value\_Definition*: Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: -

*Enumerated\_Domain\_Value\_Definition*:

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

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Detailed\_Description*:

*Entity\_Type*:

*Entity\_Type\_Label*: SOURCES

*Entity\_Type\_Definition*:

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

*Entity\_Type\_Definition\_Source*: Research Planning, Inc.

*Attribute*:

*Attribute\_Label*: SOURCE\_ID

*Attribute\_Definition*:

Source identifier that links records in the SOURCES data table to the items G\_SOURCE and A\_SOURCE in the SOC\_DAT table, and to G\_SOURCE and S\_SOURCE in the BIORES table.

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Range\_Domain*:

*Range\_Domain\_Minimum*: 1

*Range\_Domain\_Maximum*: N

*Attribute*:

*Attribute\_Label:* ORIGINATOR

*Attribute\_Definition:* Author or developer of source material or data set

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*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:* Numeric

*Enumerated\_Domain\_Value\_Definition:* mmyyyy

*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:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* DATA\_FORMAT

*Attribute\_Definition:* The format of the source material

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* PUBLICATION

*Attribute\_Definition:* Additional citation information

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SCALE

*Attribute\_Definition:* Scale denominator of the source

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* integer

*Enumerated\_Domain\_Value\_Definition:* Any integer

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* TIME\_PERIOD

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric

*Enumerated\_Domain\_Value\_Definition:* yyyy

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* STATUS

*Entity\_Type\_Definition:*

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

*Entity\_Type\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* ELEMENT

*Attribute\_Definition:* Major categories of biological data

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: BIRD

*Enumerated\_Domain\_Value\_Definition*: Birds

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: FISH

*Enumerated\_Domain\_Value\_Definition*: Fish

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: HABITAT

*Enumerated\_Domain\_Value\_Definition*: Habitats and Plants

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: INVERT

*Enumerated\_Domain\_Value\_Definition*: Invertebrates

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: M\_MAMMAL

*Enumerated\_Domain\_Value\_Definition*: Marine Mammals

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: REPTILE

*Enumerated\_Domain\_Value\_Definition*: Reptiles and Amphibians

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value:* T\_MAMMAL  
*Enumerated\_Domain\_Value\_Definition:* Terrestrial Mammals  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SPECIES\_ID

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 1

*Range\_Domain\_Maximum:* N

*Attribute:*

*Attribute\_Label:* STATE

*Attribute\_Definition:* Two-letter state abbreviation

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Two-letter state abbreviation

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* S\_F

*Attribute\_Definition:* State and Federal status.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* F

*Enumerated\_Domain\_Value\_Definition:* Federally listed

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* S

*Enumerated\_Domain\_Value\_Definition:* State listed

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* S/F  
*Enumerated\_Domain\_Value\_Definition:* State and federally listed  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* T\_E  
*Attribute\_Definition:* Threatened and endangered status.  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* E  
*Enumerated\_Domain\_Value\_Definition:* Endangered on state or federal list  
*Enumerated\_Domain\_Value\_Definition\_Source:* U.S. Fish and Wildlife Service

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* T  
*Enumerated\_Domain\_Value\_Definition:* Threatened on state or federal list  
*Enumerated\_Domain\_Value\_Definition\_Source:* U.S. Fish and Wildlife Service

*Attribute:*

*Attribute\_Label:* DATE\_PUB  
*Attribute\_Definition:*  
 Publication date of source material used to assign state and federal status values for each species, if used.  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric  
*Enumerated\_Domain\_Value\_Definition:* mmyyyy  
*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 (eg. 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 Hawaii

##### *Distribution\_Liability:*

Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer input peripherals, or when the physical medium is delivered in damaged condition.

##### *Custom\_Order\_Process:*

Contact NOAA for distribution options (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI\_Viewer product are also included on the distribution CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

---

#### *Metadata\_Reference\_Information:*

*Metadata\_Date*: 200111

*Metadata\_Review\_Date*: 200111

*Metadata\_Contact*:

##### *Contact\_Information:*

*Contact\_Person\_Primary:**Contact\_Person:* Jill Petersen*Contact\_Organization:* NOAA, Office of Response and Restoration*Contact\_Position:* GIS Manager*Contact\_Address:**Address\_Type:* Physical Address*Address:* 7600 Sand Point Way, N.E.*City:* Seattle*State\_or\_Province:* Washington*Postal\_Code:* 98115-6349*Contact\_Voice\_Telephone:* (206) 526-6944*Contact\_Facsimile\_Telephone:* (206) 526-6329*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov*Metadata\_Standard\_Name:* Content Standards for Digital Geospatial Metadata*Metadata\_Standard\_Version:* FGDC-STD-001-1998

# Hawaii ESI: INVERT (Invertebrate Polygons)

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

##### *Originator:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

*Publication\_Date:* 200111

*Title:* Hawaii ESI: INVERT (Invertebrate Polygons)

*Edition:* Second

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

##### *Series\_Information:*

*Series\_Name:* None

*Issue\_Identification:* Hawaii

##### *Publication\_Information:*

*Publication\_Place:* Seattle, Washington

##### *Publisher:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

##### *Other\_Citation\_Details:*

Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

### *Description:*

#### *Abstract:*

This data set contains sensitive biological resource data for marine, estuarine, terrestrial, and native stream invertebrate species in coastal Hawaii. Vector polygons in this data set represent invertebrate 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 Hawaii. 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 INVERTPT (Invertebrate Points) data layer, part of the larger Hawaii ESI database, for additional invertebrate information.

*Purpose:*

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

*Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 2000

*Ending\_Date:* 2001

*Currentness\_Reference:*

The biological data were compiled during 2000-2001. The currentness dates for these data range from 1968 to 2001 and are documented in the Source\_Information section.

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* None Scheduled

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -179.278

*East\_Bounding\_Coordinate:* -154.598

*North\_Bounding\_Coordinate:* 29.252

*South\_Bounding\_Coordinate:* 18.713

*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:* Hawaii

*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:*

Relationships between spatial data layers and attribute data tables for the Hawaii ESI data.

*Browse\_Graphic\_File\_Type:* JPEG

*Data\_Set\_Credit:*

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

*Native\_Data\_Set\_Environment:*

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20), and PC's with Windows Operating System (NT4.0/2000). The *Spatial\_Data\_Organization\_Information* section refers only to the source files in the ARC export format. The following files are included in that data set: bathy.e00, birds.e00, bio\_lut.e00, biofile.e00, biores.e00, breed.e00, breed\_dt.e00, cass\_pt.e00, esi.e00, fish.e00, fishpt.e00, habitats.e00, habpt.e00, hydro.e00, index.e00, invert.e00, invertpt.e00, m\_mammals.e00, m\_mampt.e00, mgt.e00, nests.e00, pools.e00, reptiles.e00, reptpt.e00, seasonal.e00, soc\_dat.e00, soc\_lut.e00, socecon.e00, sources.e00, species.e00, status.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, socecon, sources, species, and status.

*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

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

*Logical\_Consistency\_Report:*

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

*Completeness\_Report:*

These data represent a synthesis of expert knowledge and available hardcopy reports on invertebrate distribution. Refer to the INVERTPT (Invertebrate Points) data layer for additional information on native stream and anchialine pool invertebrate species. These data do not represent all invertebrate occurrences in the state of Hawaii. The following species are included in this data set (Species\_ID, Common Name, Scientific Name, if applicable): 26, Japanese littleneck clam, *Tapes philippinarum*; 43, Eastern oyster, *Crassostrea virginica*; 88, Samoan crab, *Scylla serrata*; 91, Rock crabs; 383, Blood-spotted swimming crab, *Portunus sanguinolentus*; 384, Banded urchin, *Echinothrix calamaris*; 385, Blue-black urchin, *Echinothrix diadema*; 386, Collector urchin, *Tripneustes gratilla*; 387, Cushion star, *Culcita novaeguineae*; 388, Helmet urchin, *Colobocentrotus atratus*; 389, Long-spined urchin, *Diadema paucispinum*; 390, Rock-boring urchin, *Echinometra mathaei*; 391, Needle-spined urchin, *Echinostrephus aciculatus*; 392, Ten-lined urchin, *Eucidaris metularia*; 393, Hiihawai (snail), *Neritina granosa*; 394, Newcomb's snail, *Errina newcombi*; 395, Banded spiny lobster, *Panulirus marginatus*; 396, 'O'pae kala'ole (shrimp), *Atyoida bisulcata*; 397, Mantis shrimp, *Gonodactylus falcatus*; 398, 'O'pae 'oeha'a (prawn), *Macrobrachium grandimanus*; 399, Tahitian prawn, *Macrobrachium lar*; 400, Feather duster worm, *Sabellastarte sanctijosephi*; 401, Rock oyster, *Chama iostoma*; 402, Hapawai (snail), *Neritina vespertina*; 403, Tufted spiny lobster, *Panulirus penicillatus*; 404, Pipiwai (snail), *Theodoxus cariosus*; 405, Blackburn's sphinx moth, *Manduca blackburni*; 409, Banded coral shrimp, *Stenopus hispidus*; 411, Kona crab, *Ranina ranina*; 412, Thin-shelled rock crab, *Grapsus tenuicrustatus*; 413, Black-lipped pearl oyster, *Pinctada margaritifera*; 433, Spiny oyster, *Spondylus nicobaricus*; 434, Crown-of-thorns starfish, *Acanthaster planci*; 1003, Molluscs; 1008, Bryozoans; 1009, Sea urchins; 1010, Echinoderms; 1013, Bivalves; 1025, Swimming crabs; 1026, Endangered invertebrate; 1027, Sponges; 1028, Tidepool invertebrates; 1029, Limpets; 1030, Octopus; 1033, Neretid snails; 1036, Sea slugs; 1038, Xanthid crabs; 1039, Intertidal invertebrates; 1041, Gastropods; 1042, Unique invertebrate assemblage; 1043, Invertebrates; 1044, Endangered bivalve; 1045, Slipper lobsters; 1046, Zoanthids; 1047, Rare sponges.

*Positional\_Accuracy:**Horizontal\_Positional\_Accuracy:**Horizontal\_Positional\_Accuracy\_Report:*

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

*Lineage:**Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Gulko, D. (Department of Land and Natural Resources, Oahu)*Publication\_Date:* Unpublished Material*Title:*Coral, Fish, Invertebrate, Sea Turtle, and Marine Mammal Concentration Areas;  
Socioeconomic locations*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Invertebrate Information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Maragos, J. (U.S. Fish and Wildlife Service, Oahu)*Publication\_Date:* Unpublished Material*Title:*Coral Reef Distribution; Marine Mammal and Invertebrate Concentration Areas;  
Socioeconomic locations*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Coles, S. (Bishop Museum)  
*Publication\_Date:* Unpublished Material  
*Title:* Coral and Invertebrate Concentration Areas for Oahu  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Oishi, F. (Department of Land and Natural Resources, Oahu)  
*Publication\_Date:* Unpublished Material  
*Title:*  
 Fish, Invertebrate, Benthic Habitats, Reptile Distribution and Seasonality;  
 Socioeconomic locations  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Invertebrate Information

*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* AECOS, Inc.*Publication\_Date:* 1981*Title:*

Oahu Coastal Zone Atlas, Representing the Hawaii Coral Reef Inventory, Island of Oahu (OCRI), Part C.

*Geospatial\_Data\_Presentation\_Form:* Hardcopy maps*Publication\_Information:**Publication\_Place:* Fort Shafter, HI*Publisher:* Prep. for the U.S. Army Corps of Engineers, Pacific Ocean Div.*Source\_Scale\_Denominator:* unknown*Type\_of\_Source\_Media:* Paper*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 1981*Source\_Currentness\_Reference:* Date of publication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Invertebrate Information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Oishi, F. and A. Everson*Publication\_Date:* Unpublished Material*Title:*Fish, Invertebrate, and Sea Turtle Distribution and Seasonality for Oahu/  
Northwestern Hawaiian Islands; Socioeconomic locations*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Everson, A. (National Marine Fisheries Service, Oahu)

*Publication\_Date:* Unpublished Material

*Title:*

Fish and Invertebrate Distribution and Seasonality; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Swenson, C. (U.S. Fish and Wildlife Service, Oahu)

*Publication\_Date:* Unpublished Material

*Title:*

Plant, Bird, Marine Mammal, Sea Turtle, Fish, and Invertebrate Concentration  
Areas

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* AECOS, Inc.  
*Publication\_Date:* 1979  
*Title:* Oahu Coral Reef Inventory, Part B.  
*Geospatial\_Data\_Presentation\_Form:* Hardcopy text  
*Publication\_Information:*

*Publication\_Place:* Honolulu, HI  
*Publisher:* Prep. for U.S. Army Corps of Engineers, Honolulu Dist.

*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1979

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Smith, G. (U.S. Fish and Wildlife Service, Oahu)  
*Publication\_Date:* Unpublished Material  
*Title:* Native Stream and Estuarine Species Distribution  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:*

Nishimoto, R. (Department of Land and Natural Resources, Hilo, Hawaii)

*Publication\_Date:* Unpublished Material

*Title:*

Fish, Invertebrate, Coral, Reptile, Bird Distribution; Fish/Invertebrate  
 Seasonality; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Gulko, D. and C. Swenson

*Publication\_Date:* Unpublished Material

*Title:*

Invertebrate and Reptile Concentration Areas; Subsistence Fishing Points

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Heacock, D. (Department of Land and Natural Resources, Kauai)  
*Publication\_Date:* Unpublished Material  
*Title:*  
 Coral, Fish, Invertebrate, Bird, Reptile, and Marine Mammal Distribution for  
 Kauai  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Manoa Mapworks; AECOS, Inc.  
*Publication\_Date:* 1983  
*Title:*  
 Kauai Coastal Resource Atlas; Kauai Island Coastal Resource Inventory (KICRI).  
*Geospatial\_Data\_Presentation\_Form:* Hardcopy text/maps  
*Publication\_Information:*

*Publication\_Place:* Fort Shafter, HI  
*Publisher:*

Prep. for the U.S. Corps of Engineers, Pacific Ocean Div., Fort Shafter,  
 HI, 279 pp.; Prep. for U.S. Army Corps of Engineers, Pacific Ocean Div.

*Source\_Scale\_Denominator:* 6000  
*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 1982  
*Ending\_Date:* 1993

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Yamamoto, M.N. and A.W. Tagara  
*Publication\_Date:* Unpublished Material  
*Title:* Hawaii's Native and Exotic Freshwater Animals  
*Geospatial\_Data\_Presentation\_Form:* Hardcopy text  
*Publication\_Information:*

*Publication\_Place:* Honolulu, HI  
*Publisher:* Mutual Publishing

*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Parrish, F. (National Marine Fisheries Service, Oahu)  
*Publication\_Date:* Unpublished Material  
*Title:*  
 Invertebrate, Marine Mammal, Reptile, and Precious Coral Distribution for  
 Oahu/Northwestern Hawaiian Islands  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Puleloa, W. (Department of Land and Natural Resources, Molokai)

*Publication\_Date:* Unpublished Material

*Title:*

Fish, Invertebrate, and Sea Turtle Distribution for Molokai; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Manoa Mapworks

*Publication\_Date:* 1984

*Title:*

Molokai Coastal Resource Atlas, Representing the Molokai Island Coastal Resource Inventory

*Geospatial\_Data\_Presentation\_Form:* Hardcopy maps

*Publication\_Information:*

*Publication\_Place:* Fort Shafter, HI

*Publisher:* U.S. Corps of Engineers, Pacific Ocean Division

*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1984

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Ford, J. and A. Yuen

*Publication\_Date:* 1988

*Title:*

Natural History of Pelekunu Stream and its Tributaries. Island of Molokai, HI.

*Geospatial\_Data\_Presentation\_Form:* Hardcopy text

*Publication\_Information:*

*Publication\_Place:* Hawaii

*Publisher:* Part I, Summary Report

*Type\_of\_Source\_Media:* Paper  
*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:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Hau, S. (Department of Land and Natural Resources, Maui)

*Publication\_Date:* Unpublished Material

*Title:*

Fish, Invertebrate, Reptile, and Marine Mammal Distribution for Maui  
*Geospatial\_Data\_Presentation\_Form*: Expert knowledge

*Type\_of\_Source\_Media*: Personal communication

*Source\_Time\_Period\_of\_Content*:

*Time\_Period\_Information*:

*Single\_Date/Time*:

*Calendar\_Date*: 2000

*Source\_Currentness\_Reference*: Date of communication

*Source\_Citation\_Abbreviation*: None

*Source\_Contribution*: Invertebrate Information

*Source\_Information*:

*Source\_Citation*:

*Citation\_Information*:

*Originator*: AECOS, Inc.

*Publication\_Date*: 1981

*Title*:

Hawaii Coral Reef Inventory, Island of Maui (Maui Island Coral Reef Inventory), Part B.

*Geospatial\_Data\_Presentation\_Form*: Hardcopy maps

*Publication\_Information*:

*Publication\_Place*: Honolulu, HI

*Publisher*: U.S. Army Corps of Engineers, Honolulu Dist.

*Source\_Scale\_Denominator*: unknown

*Type\_of\_Source\_Media*: Paper

*Source\_Time\_Period\_of\_Content*:

*Time\_Period\_Information*:

*Single\_Date/Time*:

*Calendar\_Date*: 1981

*Source\_Currentness\_Reference*: Date of publication

*Source\_Citation\_Abbreviation*: None

*Source\_Contribution*: Invertebrate Information

*Source\_Information*:

*Source\_Citation*:

*Citation\_Information*:

*Originator:* AECOS, Inc.

*Publication\_Date:* 1981

*Title:*

Maui Coastal Zone Atlas, Representing the Hawaii Coral Reef Inventory, Island of Maui (Maui Island Coral Reef Inventory), Part C.

*Geospatial\_Data\_Presentation\_Form:* Hardcopy text

*Publication\_Information:*

*Publication\_Place:* Fort Shafter, HI

*Publisher:* Prep. for the U.S. Army Corps of Engineers, Pacific Ocean Div.

*Type\_of\_Source\_Media:* Paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1981

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Duvall, F. (Department of Land and Natural Resources, Maui)

*Publication\_Date:* Unpublished Material

*Title:*

Seabird, Endangered Bird, and Invertebrate Distribution and Seasonality for Maui; Management Areas

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:**Citation\_Information:**Originator:* Brown, E. (University of Hawaii, Maui)*Publication\_Date:* Unpublished Material*Title:*

Coral, Algae, Reptile, Marine Mammal, Invertebrate, and Fish Distribution for Maui; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Invertebrate Information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Jokiel, P., E.F Cox, and M.P. Crosby*Publication\_Date:* 1995*Title:*

An Evaluation of the Nearshore Coral Resources of Kahoolawe, Hawaii

*Geospatial\_Data\_Presentation\_Form:* Digital report*Publication\_Information:**Publication\_Place:* Hawaii*Publisher:*[http://cramp.wcc.hawaii.edu/Study\\_Sites/Kahoolawe/  
An\\_Evaluation\\_of\\_the\\_Nearshore\\_Coral\\_Reef\\_Resources\\_of\\_Kahoolawe/  
default.asp](http://cramp.wcc.hawaii.edu/Study_Sites/Kahoolawe/An_Evaluation_of_the_Nearshore_Coral_Reef_Resources_of_Kahoolawe/default.asp)*Type\_of\_Source\_Media:* On-line*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 1995*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:*

Carman, B. (Department of Land and Natural Resources, Kona, Hawaii)

*Publication\_Date:* Unpublished Material

*Title:*

Distribution of Aquatic Resources for the Big Island; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Nolan, R.S. and D.P. Cheney

*Publication\_Date:* 1981

*Title:* West Hawaii Coral Reef Inventory.

*Geospatial\_Data\_Presentation\_Form:* Document

*Publication\_Information:*

*Publication\_Place:* Honolulu, HI

*Publisher:* Prep. for U.S. Army Corps of Engineers, Honolulu Dist.

*Type\_of\_Source\_Media:* Paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1981

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Doty, M.S.

*Publication\_Date:* 1968

*Title:* Biological and Physical Features of Kealakekua Bay, Hawaii.

*Geospatial\_Data\_Presentation\_Form:* Document

*Publication\_Information:*

*Publication\_Place:* Honolulu, HI

*Publisher:* University of Hawaii

*Type\_of\_Source\_Media:* Paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1968

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:*

Walsh, W. (Department of Land and Natural Resources, Kona, Hawaii)

*Publication\_Date:* Unpublished Material

*Title:*

Coral, Fish, Invertebrate, Reptile, and Marine Mammal Distribution for Big Island; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Cartographic Relief

*Publication\_Date:* 1981

*Title:* West Hawaii Coral Reef Atlas.

*Geospatial\_Data\_Presentation\_Form:* Document

*Publication\_Information:*

*Publication\_Place:* Fort Shafter, HI

*Publisher:* Prep. for U.S. Army Corps of Engineers, Pacific Ocean Division

*Type\_of\_Source\_Media:* Paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1981

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Doty, M.S.

*Publication\_Date:* 1969

*Title:* The Ecology of Honaunau Bay, Hawaii.

*Geospatial\_Data\_Presentation\_Form:* Document

*Publication\_Information:*

*Publication\_Place:* Honolulu, HI

*Publisher:* University of Hawaii, Hawaii Botanical Science Paper No. 14.

*Type\_of\_Source\_Media:* Paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1969

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Bail, L. (Bubbles Below, Inc.)

*Publication\_Date:* Unpublished Material

*Title:*

Distribution of Aquatic Resources Around Kauai and Niihau; Dive Sites

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2001

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:*

Department of Land and Natural Resources (DLNR), Division of Aquatic Resources (DAR)

*Publication\_Date:* 2000

*Title:* Hawaii Fishing Regulations, August 2000.

*Geospatial\_Data\_Presentation\_Form:* Document

*Publication\_Information:*

*Publication\_Place:* Honolulu, HI

*Publisher:* Department of Land and Natural Resources

*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Department of Land and Natural Resources, Division of Aquatic Resources (DAR); Hilo, Hawaii

*Publication\_Date:* 2001

*Title:*

Fish, Invertebrate, and Sea Turtle Distribution; Fish and Invertebrate Seasonality

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2001

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Invertebrate Information

*Process\_Step:*

*Process\_Description:*

Two main sources of data were used to depict invertebrate distribution for this data layer: 1) personal interviews with resource experts from Division of Land and Natural Resources (DLNR), National Marine Fisheries Service (NMFS), U.S. Fish and Wildlife Service (USFWS), and other agencies; and 2) the 1979-1984 Hawaii Coral Reef Inventory (HICRI) atlases prepared for the Army Corps of Engineers by various private companies. Information gathered during a set of interviews was compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles. A second set of interviews was conducted following the data compilation phase, and edits were made based on recommendations by the resource experts. Important invertebrate harvest areas were mapped in the HICRI atlases using icons, and both harvested and non-harvested species distributions were discussed in the written text. This

information was interpreted and compiled onto the USGS topographic quads along with the information gathered during the interviews, and edits were made based on recommendations by the resource experts. Other publications were also used to supplement the information on species composition and seasonality that was provided by the resource experts.

*Process\_Date:* 200111

*Process\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NOAA, Office of Response and Restoration

*Contact\_Person:* Jill Petersen

*Contact\_Address:*

*Address\_Type:* Physical address

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

*City:* Seattle

*State\_or\_Province:* Washington

*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944

*Contact\_Facsimile\_Telephone:* (206) 526-6329

*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* GT-polygon composed of rings

*Point\_and\_Vector\_Object\_Count:* 1976

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Area point

*Point\_and\_Vector\_Object\_Count:* 1976

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Complete chain

*Point\_and\_Vector\_Object\_Count:* 3696

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Link

*Point\_and\_Vector\_Object\_Count:* 644647

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type*: Node, planar graph  
*Point\_and\_Vector\_Object\_Count*: 3366

---

### *Spatial\_Reference\_Information:*

#### *Horizontal\_Coordinate\_System\_Definition:*

##### *Geographic:*

*Latitude\_Resolution*: 0.00005  
*Longitude\_Resolution*: 0.00005  
*Geographic\_Coordinate\_Units*: Decimal degrees

##### *Geodetic\_Model:*

*Horizontal\_Datum\_Name*: Old Hawaiian Datum  
*Ellipsoid\_Name*: Clarke 1866  
*Semi-major\_Axis*: 6378206.4  
*Denominator\_of\_Flattening\_Ratio*: 294.9786982

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### *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 Hawaii, it is 65), 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, T\_E, 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 spatial data layer INVERT contains vector polygons representing invertebrate 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 (65), 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:* 650700002

*Range\_Domain\_Maximum:* 650701970

##### *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:* 65000622

*Range\_Domain\_Maximum:* 65000820

#### *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:* 65000001

*Range\_Domain\_Maximum:* 65000977

*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 (65), 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:* 650100002

*Range\_Domain\_Maximum:* 653700236

*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:* 650100002

*Range\_Domain\_Maximum:* 653700236

*Attribute:*

*Attribute\_Label:* SPECIES\_ID

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 1

*Range\_Domain\_Maximum:* N

*Attribute:*

*Attribute\_Label:* CONC

*Attribute\_Definition:*

The field CONC refers to "concentration," abundance, or density value of a species at a particular location. The descriptive terms "VERY HIGH" and "HIGH" were used to describe the relative abundance of particular invertebrate species at specific locations. In cases where no qualitative description was available, the field is blank.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*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 (eg. 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 (eg. 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*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Species common name for the entire ESI data set

*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* GEN\_SPEC  
*Attribute\_Definition:* Species scientific name  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Species scientific name for the entire ESI data set  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_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:* SUBELEMENT*Attribute\_Definition:*

Element subgroup delineating a logical grouping of the 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:* algae*Enumerated\_Domain\_Value\_Definition:* Algae habitat, community, or species*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* alligator*Enumerated\_Domain\_Value\_Definition:* Alligator or crocodile*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:* barnacle  
*Enumerated\_Domain\_Value\_Definition:* Barnacle  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bat  
*Enumerated\_Domain\_Value\_Definition:* Bat  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bear  
*Enumerated\_Domain\_Value\_Definition:* Bear  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bird  
*Enumerated\_Domain\_Value\_Definition:* Bird  
*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:* canine  
*Enumerated\_Domain\_Value\_Definition:* Canine  
*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.

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*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* chordate  
*Enumerated\_Domain\_Value\_Definition:* Chordate  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* coral  
*Enumerated\_Domain\_Value\_Definition:* Coral habitat, community, or species  
*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:*

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*Enumerated\_Domain\_Value:* crayfish  
*Enumerated\_Domain\_Value\_Definition:* Crayfish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* diadromous  
*Enumerated\_Domain\_Value\_Definition:* Diadromous fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* diving

*Enumerated\_Domain\_Value\_Definition:* Diving bird  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* e\_nursery  
*Enumerated\_Domain\_Value\_Definition:* Estuarine nursery fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* e\_resident  
*Enumerated\_Domain\_Value\_Definition:* Estuarine resident fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

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*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:* fav  
*Enumerated\_Domain\_Value\_Definition:* Floating aquatic vegetation  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* feline  
*Enumerated\_Domain\_Value\_Definition:* Feline  
*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:* freshwater  
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*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* frog  
*Enumerated\_Domain\_Value\_Definition:* Frog  
*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:* hardbottom  
*Enumerated\_Domain\_Value\_Definition:* Hardbottom habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* landfowl  
*Enumerated\_Domain\_Value\_Definition:* Landfowl  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* lizard  
*Enumerated\_Domain\_Value\_Definition:* Lizard  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:**Enumerated\_Domain\_Value:* lobster*Enumerated\_Domain\_Value\_Definition:* Lobster*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:* m\_resident*Enumerated\_Domain\_Value\_Definition:* Marine resident fish*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* passerine*Enumerated\_Domain\_Value\_Definition:* Passerine or passerine-like 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:* polar bear  
*Enumerated\_Domain\_Value\_Definition:* Polar bear  
*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:* reef  
*Enumerated\_Domain\_Value\_Definition:* Reef habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* sav  
*Enumerated\_Domain\_Value\_Definition:* Submersed 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:* shellfish

*Enumerated\_Domain\_Value\_Definition:* Shellfish  
*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:* Shrimp  
*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:* snake  
*Enumerated\_Domain\_Value\_Definition:* Snake  
*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:* upland  
*Enumerated\_Domain\_Value\_Definition:* Upland habitat, plant community, or plant species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* wading  
*Enumerated\_Domain\_Value\_Definition:* Wading bird  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* waterfowl  
*Enumerated\_Domain\_Value\_Definition:* Waterfowl  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* wetland  
*Enumerated\_Domain\_Value\_Definition:* Wetland habitat, plant community, or plant species  
*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:* 0  
*Enumerated\_Domain\_Value\_Definition:* Not ranked  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric  
*Enumerated\_Domain\_Value\_Definition:* mmyyyy  
*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 (eg. 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 (eg. 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 (eg. 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/mating; if ELEMENT is "REPTILE" then BREED1 = nesting; if ELEMENT is "M\_MAMMAL" then BREED1 = mating. This attribute is not used for T\_MAMMAL or HABITAT elements except when SUBELEMENT is "coral," then BREED1 = spawning.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Y

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* N

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:**Enumerated\_Domain\_Value:* -*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* BREED2*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED2 = laying; if ELEMENT is "FISH" then BREED2 = eggs; if ELEMENT is "INVERT" then BREED2 = eggs; if ELEMENT is "REPTILE" then BREED2 = hatching; if ELEMENT is "M\_MAMMAL" then BREED2 = calving. This attribute is not used for T\_MAMMAL or HABITAT elements except when SUBELEMENT is "coral," then BREED2 = juvenile.

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Y*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* N*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* -*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* BREED3*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:*

*Enumerated\_Domain:**Enumerated\_Domain\_Value:* Y*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* N*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* -*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* BREED4*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED4 = fledging; if ELEMENT is "FISH" then BREED4 = juvenile; if ELEMENT is "INVERT" then BREED4 = juvenile; if ELEMENT is "REPTILE" then BREED4 = juvenile; if ELEMENT is "M\_MAMMAL" then BREED4 = molting. This attribute is not used for HABITAT or T\_MAMMAL elements.

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Y*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* N*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* -

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* BREED5

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Y

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* N

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* -

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Detailed\_Description:**Entity\_Type:*

*Entity\_Type\_Label:* SOURCES

*Entity\_Type\_Definition:*

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

*Entity\_Type\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SOURCE\_ID

*Attribute\_Definition:*

Source identifier that links records in the SOURCES data table to the items G\_SOURCE and

A\_SOURCE in the SOC\_DAT table, and to G\_SOURCE and S\_SOURCE in the BIORES table.

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Range\_Domain*:

*Range\_Domain\_Minimum*: 1

*Range\_Domain\_Maximum*: N

*Attribute*:

*Attribute\_Label*: ORIGINATOR

*Attribute\_Definition*: Author or developer of source material or data set

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: Any character

*Enumerated\_Domain\_Value\_Definition*: Free text

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*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*: Numeric

*Enumerated\_Domain\_Value\_Definition*: mmyyyy

*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*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: Any character

*Enumerated\_Domain\_Value\_Definition*: Free text

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute*:

*Attribute\_Label*: DATA\_FORMAT

*Attribute\_Definition*: The format of the source material

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: Any character

*Enumerated\_Domain\_Value\_Definition*: Free text

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute*:

*Attribute\_Label*: PUBLICATION

*Attribute\_Definition*: Additional citation information

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: Any character

*Enumerated\_Domain\_Value\_Definition*: Free text

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute*:

*Attribute\_Label*: SCALE

*Attribute\_Definition*: Scale denominator of the source

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: integer

*Enumerated\_Domain\_Value\_Definition*: Any integer

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute*:

*Attribute\_Label*: TIME\_PERIOD

*Attribute\_Definition*:

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

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: Numeric

*Enumerated\_Domain\_Value\_Definition*: yyyy

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Detailed\_Description*:

*Entity\_Type*:

*Entity\_Type\_Label*: STATUS

*Entity\_Type\_Definition:*

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

*Entity\_Type\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* ELEMENT

*Attribute\_Definition:* Major categories of biological data

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* BIRD

*Enumerated\_Domain\_Value\_Definition:* Birds

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* FISH

*Enumerated\_Domain\_Value\_Definition:* Fish

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* HABITAT

*Enumerated\_Domain\_Value\_Definition:* Habitats and Plants

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* INVERT

*Enumerated\_Domain\_Value\_Definition:* Invertebrates

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* M\_MAMMAL

*Enumerated\_Domain\_Value\_Definition:* Marine Mammals

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:**Enumerated\_Domain\_Value:* REPTILE*Enumerated\_Domain\_Value\_Definition:* Reptiles and Amphibians*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* T\_MAMMAL*Enumerated\_Domain\_Value\_Definition:* Terrestrial Mammals*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* SPECIES\_ID*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Range\_Domain:**Range\_Domain\_Minimum:* 1*Range\_Domain\_Maximum:* N*Attribute:**Attribute\_Label:* STATE*Attribute\_Definition:* Two-letter state abbreviation*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Any character*Enumerated\_Domain\_Value\_Definition:* Two-letter state abbreviation*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* S\_F*Attribute\_Definition:* State and Federal status.*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* F*Enumerated\_Domain\_Value\_Definition:* Federally listed*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:*

*Enumerated\_Domain:**Enumerated\_Domain\_Value:* S*Enumerated\_Domain\_Value\_Definition:* State listed*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* S/F*Enumerated\_Domain\_Value\_Definition:* State and federally listed*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* T\_E*Attribute\_Definition:* Threatened and endangered status*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* E*Enumerated\_Domain\_Value\_Definition:* Endangered on state or federal list*Enumerated\_Domain\_Value\_Definition\_Source:* U.S. Fish and Wildlife Service*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* T*Enumerated\_Domain\_Value\_Definition:* Threatened on state or federal list*Enumerated\_Domain\_Value\_Definition\_Source:* U.S. Fish and Wildlife Service*Attribute:**Attribute\_Label:* DATE\_PUB*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Numeric*Enumerated\_Domain\_Value\_Definition:* mmyyyy*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 (eg. 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 Hawaii

*Distribution\_Liability:*

Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer input peripherals, or when the physical medium is delivered in damaged condition.

*Custom\_Order\_Process:*

Contact NOAA for distribution options (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI\_Viewer product are also included on the distribution CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

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*Metadata\_Reference\_Information:**Metadata\_Date:* 200111*Metadata\_Review\_Date:* 200111*Metadata\_Contact:**Contact\_Information:**Contact\_Person\_Primary:**Contact\_Person:* Jill Petersen*Contact\_Organization:* NOAA, Office of Response and Restoration*Contact\_Position:* GIS Manager*Contact\_Address:**Address\_Type:* Physical Address*Address:* 7600 Sand Point Way, N.E.*City:* Seattle*State\_or\_Province:* Washington*Postal\_Code:* 98115-6349*Contact\_Voice\_Telephone:* (206) 526-6944*Contact\_Facsimile\_Telephone:* (206) 526-6329*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov*Metadata\_Standard\_Name:* Content Standards for Digital Geospatial Metadata*Metadata\_Standard\_Version:* FGDC-STD-001-1998

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# Hawaii ESI: INVERTPT (Invertebrate Points)

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

##### *Originator:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

*Publication\_Date:* 200111

*Title:* Hawaii ESI: INVERTPT (Invertebrate Points)

*Edition:* Second

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

##### *Series\_Information:*

*Series\_Name:* None

*Issue\_Identification:* Hawaii

##### *Publication\_Information:*

*Publication\_Place:* Seattle, Washington

##### *Publisher:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

##### *Other\_Citation\_Details:*

Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

### *Description:*

#### *Abstract:*

This data set contains sensitive biological resource data for native stream invertebrates, anchialine pool invertebrates, and threatened/endangered terrestrial invertebrates in coastal Hawaii. (Anchialine pools are small, relatively shallow coastal ponds that occur singly or in groups close to the shoreline. They have direct connections to the ocean either through surface channels or through

subsurface cracks and fissures in the lava flows, and they experience regular tidal fluctuations in water levels.) Vector points in this data set represent invertebrate species occurrences. 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 Hawaii. 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 INVERT data layer, part of the larger Hawaii ESI database, for additional invertebrate information.

*Purpose:*

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

*Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 2000

*Ending\_Date:* 2001

*Currentness\_Reference:*

The biological data were compiled during 2000-2001. The currentness dates for these data range from 1970 to 2001 and are documented in the Source\_Information section.

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* None Scheduled

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -179.278

*East\_Bounding\_Coordinate:* -154.598

*North\_Bounding\_Coordinate:* 29.252

*South\_Bounding\_Coordinate:* 18.713

*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:* Hawaii

*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:*

Relationships between spatial data layers and attribute data tables for the Hawaii ESI data.

*Browse\_Graphic\_File\_Type:* JPEG

*Data\_Set\_Credit:*

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

*Native\_Data\_Set\_Environment:*

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20), and PC's with Windows Operating System (NT4.0/2000). The Spatial\_Data\_Organization\_Information section refers only to the source files in the ARC export format. The following files are included in that data set: bathy.e00, birds.e00, bio\_lut.e00, biofile.e00, biores.e00, breed.e00, breed\_dt.e00, cass\_pt.e00, esi.e00, fish.e00, fishpt.e00, habitats.e00, habpt.e00, hydro.e00, index.e00, invert.e00, invertpt.e00, m\_mammals.e00, m\_mampt.e00, mgt.e00, nests.e00, pools.e00, reptiles.e00, reptpt.e00, seasonal.e00, soc\_dat.e00, soc\_lut.e00, socecon.e00, sources.e00, species.e00, status.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, socecon, sources, species, and status.

*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

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

methodology used to collect and compile such data. For a more detailed evaluation of source data attribute accuracy, contact the sources listed in the Lineage section.

#### *Logical\_Consistency\_Report:*

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

#### *Completeness\_Report:*

These data represent a synthesis of expert knowledge and available hardcopy reports on native stream invertebrate species distribution, and digital anchialine pool and terrestrial invertebrate species locations. Refer to the INVERT data layer for additional information on the occurrence of native stream invertebrate species. These data do not represent all native stream, anchialine pool, and threatened/endangered invertebrate species occurrences in the state of Hawaii. The following species are included in this data set (Species\_ID, Common Name, Scientific Name, if applicable): 393, Hihiwai (snail), Neritina granosa; 394, Newcomb's snail, Errina newcombi; 396, 'O'pae kala'ole (shrimp), Atyoida bisulcata; 398, 'O'pae 'oeha'a (prawn), Macrobrachium grandimanus; 399, Tahitian prawn, Macrobrachium lar; 402, Hapawai (snail), Neritina vespertina; 404, Pipiwai (snail), Theodoxus cariosus; 405, Blackburn's sphinx moth, Manduca blackburni; 416, Anchialine pool shrimp, Antecaridina lauensis; 417, Anchialine pool shrimp, Halocaridina palahemo; 418, Anchialine pool shrimp, Procaris hawaiana; 419, Anchialine pool shrimp, Vetericaris chaceorum; 420, Anchialine pool shrimp, Calliasmata pholidota; 421, Anchialine pool shrimp, Palaemonella burnsi; 422, Anchialine pool shrimp, Metabetaeus lohena; 423, Anchialine pool snail, Neritilia hawaiiensis; 424, Anchialine pool snail, Neritilia sp 1; 425, Anchialine pool snail, Neritilia sp B.

#### *Positional\_Accuracy:*

##### *Horizontal\_Positional\_Accuracy:*

##### *Horizontal\_Positional\_Accuracy\_Report:*

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

#### *Lineage:*

##### *Source\_Information:*

##### *Source\_Citation:*

*Citation\_Information:**Originator:* Oishi, F. (Department of Land and Natural Resources, Oahu)*Publication\_Date:* Unpublished Material*Title:*Fish, Invertebrate, Benthic Habitats, Reptile Distribution and Seasonality;  
Socioeconomic locations*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Invertebrate Information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Smith, G. (U.S. Fish and Wildlife Service, Oahu)*Publication\_Date:* Unpublished Material*Title:* Native Stream and Estuarine Species Distribution*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Invertebrate Information*Source\_Information:**Source\_Citation:**Citation\_Information:*

*Originator:*

Nishimoto, R. (Department of Land and Natural Resources, Hilo, Hawaii)

*Publication\_Date:* Unpublished Material*Title:*Fish, Invertebrate, Coral, Reptile, Bird Distribution; Fish/Invertebrate  
Seasonality; Socioeconomic locations*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Invertebrate Information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Heacock, D. (Department of Land and Natural Resources, Kauai)*Publication\_Date:* Unpublished Material*Title:*Coral, Fish, Invertebrate, Bird, Reptile, and Marine Mammal Distribution for  
Kauai*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Invertebrate Information*Source\_Information:**Source\_Citation:**Citation\_Information:*

*Originator:* Yamamoto, M.N. and A.W. Tagara  
*Publication\_Date:* Unpublished Material  
*Title:* Hawaii's Native and Exotic Freshwater Animals  
*Geospatial\_Data\_Presentation\_Form:* Hardcopy text  
*Publication\_Information:*

*Publication\_Place:* Honolulu, HI  
*Publisher:* Mutual Publishing

*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Ford, J. and A. Yuen  
*Publication\_Date:* 1988  
*Title:*  
 Natural History of Pelekunu Stream and its Tributaries. Island of Molokai, HI  
*Geospatial\_Data\_Presentation\_Form:* Hardcopy text  
*Publication\_Information:*

*Publication\_Place:* Hawaii  
*Publisher:* Part I, Summary Report

*Type\_of\_Source\_Media:* Paper  
*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:* Invertebrate Information

*Source\_Information:*

*Source\_Citation:**Citation\_Information:**Originator:* Hau, S. (Department of Land and Natural Resources, Maui)*Publication\_Date:* Unpublished Material*Title:*

Fish, Invertebrate, Reptile, and Marine Mammal Distribution for Maui

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Invertebrate Information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Hawaii Natural Heritage Program*Publication\_Date:* 2000*Title:*

Occurrences of Anchialine Pools, Fish, Invertebrates, Plants, and Sea Turtles

*Geospatial\_Data\_Presentation\_Form:* Vector digital data*Publication\_Information:**Publication\_Place:* Hawaii*Publisher:* Data contact: Roy Kam, Data Manager, 808/956-3744*Source\_Scale\_Denominator:* 24000*Type\_of\_Source\_Media:* Electronic mail*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Range\_of\_Dates/Times:**Beginning\_Date:* 1970*Ending\_Date:* 2000*Source\_Currentness\_Reference:* Dates of survey

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Invertebrate Information

*Process\_Step:*

*Process\_Description:*

Two main sources of data were used for this data layer: 1) personal interviews with resource experts from the U.S. Fish and Wildlife Service, the Division of Land and Natural Resources (DLNR), and other agencies; and 2) Natural Heritage Program (NHP) occurrence data for anchialine pool and threatened/endangered terrestrial invertebrate species. Information on the distribution of native stream invertebrates at stream locations was gathered during a set of interviews and was compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles. Occurrences of native species in streams were mapped as points at the mouths of the streams. A second set of interviews was conducted following the data compilation phase, and edits were made based on recommendations by the resource experts. All NHP occurrences that were recorded between 1970-2000 of anchialine pool and terrestrial invertebrates within 0.25 miles on and offshore were used in this data layer.

*Process\_Date:* 200111

*Process\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NOAA, Office of Response and Restoration  
*Contact\_Person:* Jill Petersen

*Contact\_Address:*

*Address\_Type:* Physical address  
*Address:* 7600 Sand Point Way, N.E.  
*City:* Seattle  
*State\_or\_Province:* Washington  
*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944  
*Contact\_Facsimile\_Telephone:* (206) 526-6329  
*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector  
*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Entity Point  
*Point\_and\_Vector\_Object\_Count:* 236

*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:**Geographic:*

*Latitude\_Resolution:* 0.00005  
*Longitude\_Resolution:* 0.00005  
*Geographic\_Coordinate\_Units:* Decimal degrees

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* Old Hawaiian Datum  
*Ellipsoid\_Name:* Clarke 1866  
*Semi-major\_Axis:* 6378206.4  
*Denominator\_of\_Flattening\_Ratio:* 294.9786982

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*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, INVERTPT) 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 Hawaii, it is 65), 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, T\_E, 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:* INVERTPT.PAT

*Entity\_Type\_Definition:*

The spatial data layer INVERTPT contains vector points representing native stream invertebrates, anchialine pool invertebrates, and threatened/endangered invertebrate species in Hawaii. 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 (65), element number (37 [30 because it is a point feature, plus 7, the element value for INVERT]), and record number.

*Attribute\_Definition\_Source:* NOAA

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 653700001

*Range\_Domain\_Maximum:* 653700236

*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:* 65000621

*Range\_Domain\_Maximum:* 65000706

*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.

*Attribute\_Definition\_Source*: NOAA

*Attribute\_Domain\_Values*:

*Range\_Domain*:

*Range\_Domain\_Minimum*: 65000001

*Range\_Domain\_Maximum*: 65000977

*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 (65), element number (37 [30 because it is a point feature, plus 7, the element value for INVERT]), and record number.

*Attribute\_Definition\_Source*: NOAA

*Attribute\_Domain\_Values*:

*Range\_Domain*:

*Range\_Domain\_Minimum*: 650100002

*Range\_Domain\_Maximum*: 653700236

*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:* 650100002  
*Range\_Domain\_Maximum:* 653700236

*Attribute:*

*Attribute\_Label:* SPECIES\_ID

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 1  
*Range\_Domain\_Maximum:* N

*Attribute:*

*Attribute\_Label:* CONC

*Attribute\_Definition:*

The field CONC refers to "concentration," abundance, or density value of a species at a particular location. The descriptive terms "VERY HIGH" and "HIGH" were used to describe the relative abundance of particular invertebrate species at specific locations. In cases where no qualitative description was available, the field is blank.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*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 (eg. 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 (eg. 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*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Species common name for the entire ESI data set*Enumerated\_Domain\_Value\_Definition:* Free text*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* GEN\_SPEC*Attribute\_Definition:* Species scientific name*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:*

*Enumerated\_Domain:**Enumerated\_Domain\_Value:* Species scientific name for the entire ESI data set*Enumerated\_Domain\_Value\_Definition:* Free text*Enumerated\_Domain\_Value\_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:* SUBELEMENT

*Attribute\_Definition:*

Element subgroup delineating a logical grouping of the 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:* algae  
*Enumerated\_Domain\_Value\_Definition:* Algae habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* alligator  
*Enumerated\_Domain\_Value\_Definition:* Alligator or crocodile  
*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:* barnacle  
*Enumerated\_Domain\_Value\_Definition:* Barnacle  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bat  
*Enumerated\_Domain\_Value\_Definition:* Bat  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bear  
*Enumerated\_Domain\_Value\_Definition:* Bear  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bird  
*Enumerated\_Domain\_Value\_Definition:* Bird  
*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:* canine  
*Enumerated\_Domain\_Value\_Definition:* Canine  
*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:* chordate*Enumerated\_Domain\_Value\_Definition:* Chordate*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* coral*Enumerated\_Domain\_Value\_Definition:* Coral habitat, community, or species*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:* crayfish*Enumerated\_Domain\_Value\_Definition:* Crayfish*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* diadromous*Enumerated\_Domain\_Value\_Definition:* Diadromous fish*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* diving*Enumerated\_Domain\_Value\_Definition:* Diving bird*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* e\_nursery*Enumerated\_Domain\_Value\_Definition:* Estuarine nursery fish*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* e\_resident  
*Enumerated\_Domain\_Value\_Definition:* Estuarine resident fish  
*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:* fav  
*Enumerated\_Domain\_Value\_Definition:* Floating aquatic vegetation  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* feline  
*Enumerated\_Domain\_Value\_Definition:* Feline  
*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:* freshwater  
*Enumerated\_Domain\_Value\_Definition:* Freshwater fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* frog

*Enumerated\_Domain\_Value\_Definition:* Frog  
*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:* hardbottom  
*Enumerated\_Domain\_Value\_Definition:* Hardbottom habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* landfowl  
*Enumerated\_Domain\_Value\_Definition:* Landfowl  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* lizard  
*Enumerated\_Domain\_Value\_Definition:* Lizard  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* lobster  
*Enumerated\_Domain\_Value\_Definition:* Lobster  
*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:* m\_resident  
*Enumerated\_Domain\_Value\_Definition:* Marine resident fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* passerine  
*Enumerated\_Domain\_Value\_Definition:* Passerine or passerine-like 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:* polar bear  
*Enumerated\_Domain\_Value\_Definition:* Polar bear  
*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:* reef  
*Enumerated\_Domain\_Value\_Definition:* Reef habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* sav  
*Enumerated\_Domain\_Value\_Definition:* Submersed 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:* shellfish  
*Enumerated\_Domain\_Value\_Definition:* Shellfish  
*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:* Shrimp  
*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:* snake  
*Enumerated\_Domain\_Value\_Definition:* Snake  
*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:* upland  
*Enumerated\_Domain\_Value\_Definition:* Upland habitat, plant community, or plant species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* wading  
*Enumerated\_Domain\_Value\_Definition:* Wading bird  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* waterfowl  
*Enumerated\_Domain\_Value\_Definition:* Waterfowl  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* wetland  
*Enumerated\_Domain\_Value\_Definition:* Wetland habitat, plant community, or plant species  
*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:* 0  
*Enumerated\_Domain\_Value\_Definition:* Not ranked  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric

*Enumerated\_Domain\_Value\_Definition:* mmyyyy

*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 BIORRES 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 (eg. 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 (eg. 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 (eg. 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/mating; if ELEMENT is "REPTILE" then BREED1 = nesting; if ELEMENT is "M\_MAMMAL" then BREED1 = mating. This attribute is not used for T\_MAMMAL or HABITAT elements except when SUBELEMENT is "coral," then BREED1 = spawning.

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Y*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* N*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* -*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* BREED2

*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED2 = laying; if ELEMENT is "FISH" then BREED2 = eggs; if ELEMENT is "INVERT" then BREED2 = eggs; if ELEMENT is "REPTILE" then BREED2 = hatching; if ELEMENT is "M\_MAMMAL" then BREED2 = calving. This attribute is not used for T\_MAMMAL or HABITAT elements except when SUBELEMENT is "coral," then BREED2 = juvenile.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Y

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* N

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* -

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* BREED3

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Y

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* N

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* -

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* BREED4

*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED4 = fledging; if ELEMENT is "FISH" then BREED4 = juvenile; if ELEMENT is "INVERT" then BREED4 = juvenile; if ELEMENT is "REPTILE" then BREED4 = juvenile; if ELEMENT is "M\_MAMMAL" then BREED4 = molting. This attribute is not used for HABITAT or T\_MAMMAL elements.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Y

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* N

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* -

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* BREED5

*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "FISH" then BREED5 = adults; if ELEMENT is "INVERT" then BREED5 = adults; if ELEMENT is "REPTILE" then

BREED5 = adults. This attribute is not used for BIRD, M\_MAMMAL, HABITAT, or T\_MAMMAL elements.

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: Y

*Enumerated\_Domain\_Value\_Definition*: Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: N

*Enumerated\_Domain\_Value\_Definition*: Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: -

*Enumerated\_Domain\_Value\_Definition*:

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

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Detailed\_Description*:

*Entity\_Type*:

*Entity\_Type\_Label*: SOURCES

*Entity\_Type\_Definition*:

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

*Entity\_Type\_Definition\_Source*: Research Planning, Inc.

*Attribute*:

*Attribute\_Label*: SOURCE\_ID

*Attribute\_Definition*:

Source identifier that links records in the SOURCES data table to the items G\_SOURCE and A\_SOURCE in the SOC\_DAT table, and to G\_SOURCE and S\_SOURCE in the BIORES table.

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Range\_Domain*:

*Range\_Domain\_Minimum*: 1

*Range\_Domain\_Maximum*: N

*Attribute*:

*Attribute\_Label:* ORIGINATOR

*Attribute\_Definition:* Author or developer of source material or data set

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*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:* Numeric

*Enumerated\_Domain\_Value\_Definition:* mmyyyy

*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:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* DATA\_FORMAT

*Attribute\_Definition:* The format of the source material

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* PUBLICATION

*Attribute\_Definition:* Additional citation information

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SCALE

*Attribute\_Definition:* Scale denominator of the source

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* integer

*Enumerated\_Domain\_Value\_Definition:* Any integer

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* TIME\_PERIOD

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric

*Enumerated\_Domain\_Value\_Definition:* yyyy

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* STATUS

*Entity\_Type\_Definition:*

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

*Entity\_Type\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* ELEMENT

*Attribute\_Definition:* Major categories of biological data

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: BIRD

*Enumerated\_Domain\_Value\_Definition*: Birds

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: FISH

*Enumerated\_Domain\_Value\_Definition*: Fish

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: HABITAT

*Enumerated\_Domain\_Value\_Definition*: Habitats and Plants

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: INVERT

*Enumerated\_Domain\_Value\_Definition*: Invertebrates

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: M\_MAMMAL

*Enumerated\_Domain\_Value\_Definition*: Marine Mammals

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: REPTILE

*Enumerated\_Domain\_Value\_Definition*: Reptiles and Amphibians

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value:* T\_MAMMAL  
*Enumerated\_Domain\_Value\_Definition:* Terrestrial Mammals  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SPECIES\_ID

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 1

*Range\_Domain\_Maximum:* N

*Attribute:*

*Attribute\_Label:* STATE

*Attribute\_Definition:* Two-letter state abbreviation

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Two-letter state abbreviation

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* S\_F

*Attribute\_Definition:* State and Federal status.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* F

*Enumerated\_Domain\_Value\_Definition:* Federally listed

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* S

*Enumerated\_Domain\_Value\_Definition:* State listed

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* S/F  
*Enumerated\_Domain\_Value\_Definition:* State and federally listed  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* T\_E  
*Attribute\_Definition:* Threatened and endangered status.  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* E  
*Enumerated\_Domain\_Value\_Definition:* Endangered on state or federal list  
*Enumerated\_Domain\_Value\_Definition\_Source:* U.S. Fish and Wildlife Service

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* T  
*Enumerated\_Domain\_Value\_Definition:* Threatened on state or federal list  
*Enumerated\_Domain\_Value\_Definition\_Source:* U.S. Fish and Wildlife Service

*Attribute:*

*Attribute\_Label:* DATE\_PUB  
*Attribute\_Definition:*  
 Publication date of source material used to assign state and federal status values for each species, if used.  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric  
*Enumerated\_Domain\_Value\_Definition:* mmyyyy  
*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 (eg. 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 Hawaii

##### *Distribution\_Liability:*

Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer input peripherals, or when the physical medium is delivered in damaged condition.

##### *Custom\_Order\_Process:*

Contact NOAA for distribution options (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI Viewer product are also included on the distribution CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

#### *Metadata\_Reference\_Information:*

*Metadata\_Date*: 200111

*Metadata\_Review\_Date*: 200111

*Metadata\_Contact*:

##### *Contact\_Information:*

*Contact\_Person\_Primary:**Contact\_Person:* Jill Petersen*Contact\_Organization:* NOAA, Office of Response and Restoration*Contact\_Position:* GIS Manager*Contact\_Address:**Address\_Type:* Physical Address*Address:* 7600 Sand Point Way, N.E.*City:* Seattle*State\_or\_Province:* Washington*Postal\_Code:* 98115-6349*Contact\_Voice\_Telephone:* (206) 526-6944*Contact\_Facsimile\_Telephone:* (206) 526-6329*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov*Metadata\_Standard\_Name:* Content Standards for Digital Geospatial Metadata*Metadata\_Standard\_Version:* FGDC-STD-001-1998

# Hawaii ESI: M\_MAMMAL (Marine Mammal Polygons)

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

##### *Originator:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

*Publication\_Date:* 200111

*Title:* Hawaii ESI: M\_MAMMAL (Marine Mammal Polygons)

*Edition:* Second

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

##### *Series\_Information:*

*Series\_Name:* None

*Issue\_Identification:* Hawaii

##### *Publication\_Information:*

*Publication\_Place:* Seattle, Washington

##### *Publisher:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

##### *Other\_Citation\_Details:*

Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

#### *Description:*

##### *Abstract:*

This data set contains sensitive biological resource data for endangered Hawaiian monk seals,

endangered humpback whales, and other whales and dolphins in coastal Hawaii. Vector polygons in this data set represent marine mammal distribution and Hawaiian monk seal pupping and haul-out sites. Species-specific abundance, seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer. This data set comprises a portion of the Environmental Sensitivity Index (ESI) data for Hawaii. ESI data characterize the marine and coastal environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources. See also the M\_MAMPT (Marine Mammal Points) data layer, part of the larger Hawaii ESI database, for additional marine mammal information.

*Purpose:*

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

*Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 2000

*Ending\_Date:* 2001

*Currentness\_Reference:*

The biological data were compiled during 2000-2001. The currentness dates for these data range from 1983 to 2001 and are documented in the Source\_Information section.

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* None Scheduled

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -179.278

*East\_Bounding\_Coordinate:* -154.598

*North\_Bounding\_Coordinate:* 29.252

*South\_Bounding\_Coordinate:* 18.713

*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:* Hawaii*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:*

Relationships between spatial data layers and attribute data tables for the Hawaii ESI data.

*Browse\_Graphic\_File\_Type:* JPEG*Data\_Set\_Credit:*

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

*Native\_Data\_Set\_Environment:*

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20), and PC's with Windows Operating System (NT4.0/2000). The Spatial\_Data\_Organization\_Information section refers only to the source files in the ARC export format. The following files are included in that data set: bathy.e00, birds.e00, bio\_lut.e00, biofile.e00, biores.e00, breed.e00, breed\_dt.e00, cass\_pt.e00, esi.e00, fish.e00, fishpt.e00, habitats.e00, habpt.e00, hydro.e00, index.e00, invert.e00, invertpt.e00, m\_mammals.e00, m\_mampt.e00, mgt.e00, nests.e00, pools.e00, reptiles.e00, reptpt.e00, seasonal.e00, soc\_dat.e00, soc\_lut.e00, socecon.e00, sources.e00, species.e00, status.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, socecon, sources, species, and status.

*Data\_Quality\_Information:**Attribute\_Accuracy:**Attribute\_Accuracy\_Report:*

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

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

#### *Logical\_Consistency\_Report:*

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

#### *Completeness\_Report:*

These data represent a synthesis of expert knowledge and available hardcopy reports on marine mammal distribution. Refer to the M\_MAMPT (Marine Mammal Points) data layer for additional Hawaiian monk seal pupping and haul-out information. These data do not represent all marine mammal occurrences in the state of Hawaii. The following species are included in this data set (Species\_ID, Common Name, Scientific Name, if applicable): 5, Melon-headed whale, *Peponocephala electra*; 13, Humpback whale, *Megaptera novaeangliae*; 17, Bottlenose dolphin, *Tursiops truncatus*; 19, Shortfin pilot whale, *Globicephala macrorhynchus*; 49, Spotted dolphin, *Stenella attenuata*; 50, Spinner dolphin, *Stenella longirostris*; 51, Hawaiian monk seal, *Monachus schauinslandi*; 102, False killer whale, *Pseudorca crassidens*.

#### *Positional\_Accuracy:*

##### *Horizontal\_Positional\_Accuracy:*

##### *Horizontal\_Positional\_Accuracy\_Report:*

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

#### *Lineage:*

##### *Source\_Information:*

##### *Source\_Citation:*

##### *Citation\_Information:*

*Originator:* Gulko, D. (Department of Land and Natural Resources, Oahu)

*Publication\_Date:* Unpublished Material

*Title:*

Coral, Fish, Invertebrate, Sea Turtle, and Marine Mammal Concentration Areas;  
Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Marine Mammal Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Maragos, J. (U.S. Fish and Wildlife Service, Oahu)

*Publication\_Date:* Unpublished Material

*Title:*

Coral Reef Distribution; Marine Mammal and Invertebrate Concentration Areas;  
Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Marine Mammal Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Mobley, J. (University of Hawaii, Oahu)  
*Publication\_Date:* Unpublished Material  
*Title:* Cetacean Distribution and Seasonality  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Marine Mammal Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Silbernagle, M. (U.S. Fish and Wildlife Service, Oahu)  
*Publication\_Date:* Unpublished Material  
*Title:*  
 Bird Concentration Areas and Seasonality; Marine Mammal Distribution;  
 Aquaculture  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Marine Mammal Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Dupree, M. (National Marine Fisheries Service, Oahu)

*Publication\_Date:* Unpublished Material  
*Title:* Sea Turtle and Monk Seal Distribution  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Marine Mammal Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:*  
 National Marine Fisheries Service, Marine Mammal Research Program  
*Publication\_Date:* Unpublished Material  
*Title:* Marine Mammal and Reptile Distribution Seasonality  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Marine Mammal Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* U.S. Fish and Wildlife Service  
*Publication\_Date:* 1983  
*Title:* Atlas of Hawaiian Seabird Colonies.

*Geospatial\_Data\_Presentation\_Form*: Hardcopy text  
*Publication\_Information*:

*Publication\_Place*: Honolulu, HI  
*Publisher*: U.S. Fish and Wildlife Service

*Type\_of\_Source\_Media*: Paper  
*Source\_Time\_Period\_of\_Content*:

*Time\_Period\_Information*:

*Single\_Date/Time*:

*Calendar\_Date*: 1983

*Source\_Currentness\_Reference*: Date of publication

*Source\_Citation\_Abbreviation*: None  
*Source\_Contribution*: Marine Mammal Information

*Source\_Information*:

*Source\_Citation*:

*Citation\_Information*:

*Originator*: Heacock, D. (Department of Land and Natural Resources, Kauai)  
*Publication\_Date*: Unpublished Material  
*Title*:  
Coral, Fish, Invertebrate, Bird, Reptile, and Marine Mammal Distribution for  
Kauai  
*Geospatial\_Data\_Presentation\_Form*: Expert knowledge

*Type\_of\_Source\_Media*: Personal communication  
*Source\_Time\_Period\_of\_Content*:

*Time\_Period\_Information*:

*Single\_Date/Time*:

*Calendar\_Date*: 2000

*Source\_Currentness\_Reference*: Date of communication

*Source\_Citation\_Abbreviation*: None  
*Source\_Contribution*: Mammal Information

*Source\_Information*:

*Source\_Citation*:

*Citation\_Information*:

*Originator:* Parrish, F. (National Marine Fisheries Service, Oahu)

*Publication\_Date:* Unpublished Material

*Title:*

Invertebrate, Marine Mammal, Reptile, and Precious Coral Distribution for  
Oahu/Northwestern Hawaiian Islands

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Marine Mammal Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Misaki, E. (The Nature Conservancy, Molokai Chapter)

*Publication\_Date:* Unpublished Material

*Title:*

Biological Resource Distribution and Concentration Areas for Molokai

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Marine Mammal Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Potts, R. (National Park Service, Molokai)

*Publication\_Date:* Unpublished Material

*Title:*

Biological Resource Distribution and Concentration Areas for Kalaupapa  
National Heritage Program

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Marine Mammal Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Hau, S. (Department of Land and Natural Resources, Maui)

*Publication\_Date:* Unpublished Material

*Title:*

Fish, Invertebrate, Reptile, and Marine Mammal Distribution for Maui

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Marine Mammal Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Ohta, P. (Department of Land and Natural Resources, Maui)

*Publication\_Date:* Unpublished Material

*Title:*

State Park boundaries and recreational use for Maui; Monk Seal Distribution

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Marine Mammal Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Brown, E. (University of Hawaii, Maui)

*Publication\_Date:* Unpublished Material

*Title:*

Coral, Algae, Reptile, Marine Mammal, Invertebrate, and Fish Distribution for Maui; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Marine Mammal Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Mobley, Jr., J.R., et al.

*Publication\_Date:* 1999

*Title:*

Results of Aerial Surveys of Marine Mammals in the Major Hawaiian Islands  
(1993-1998)

*Geospatial\_Data\_Presentation\_Form:* Hardcopy text

*Publication\_Information:*

*Publication\_Place:* Hawaii

*Publisher:*

Final Report to the Acoustic Thermometry of Ocean Climate Program  
(ATOC MMRP), 34 pp.

*Type\_of\_Source\_Media:* Paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 1993

*Ending\_Date:* 1998

*Source\_Currentness\_Reference:* Dates of surveys

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Marine Mammal Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Hawaiian Islands Humpback Whale National Marine Sanctuary

*Publication\_Date:* 1999

*Title:*

The Geographic Boundaries of the Hawaiian Islands Humpback Whale National  
Marine Sanctuary and Humpback Whale Distribution

*Geospatial\_Data\_Presentation\_Form:* Digital arcs

*Publication\_Information:*

*Publication\_Place:* Hawaii

*Publisher:*

Data contact: Naomi McIntosh, Acting Sanctuary Manager, 808/397-2651

*Type\_of\_Source\_Media:* CD-ROM

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1999

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Marine Mammal Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Jokiel, P., E.F Cox, and M.P. Crosby

*Publication\_Date:* 1995

*Title:*

An Evaluation of the Nearshore Coral Resources of Kahoolawe, Hawaii

*Geospatial\_Data\_Presentation\_Form:* Digital report

*Publication\_Information:*

*Publication\_Place:* Hawaii

*Publisher:*

[http://cramp.wcc.hawaii.edu/Study\\_Sites/Kahoolawe/  
An\\_Evaluation\\_of\\_the\\_Nearshore\\_Coral\\_Reef\\_Resources\\_of\\_Kahoolawe/  
default.asp](http://cramp.wcc.hawaii.edu/Study_Sites/Kahoolawe/An_Evaluation_of_the_Nearshore_Coral_Reef_Resources_of_Kahoolawe/default.asp)

*Type\_of\_Source\_Media:* On-line

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1995

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Marine Mammal Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:*

Carman, B. (Department of Land and Natural Resources, Kona, Hawaii)

*Publication\_Date:* Unpublished Material

*Title:*

Distribution of Aquatic Resources for the Big Island; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Marine Mammal Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:*

Walsh, W. (Department of Land and Natural Resources, Kona, Hawaii)

*Publication\_Date:* Unpublished Material

*Title:*

Coral, Fish, Invertebrate, Reptile, and Marine Mammal Distribution for Big Island; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Marine Mammal Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Naughton, J. (National Marine Fisheries Service, Oahu)

*Publication\_Date:* Unpublished Material

*Title:*

Sea Turtle and Monk Seal Distribution for Northwestern Hawaiian Islands

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Marine Mammal Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Bail, L. (Bubbles Below, Inc.)

*Publication\_Date:* Unpublished Material

*Title:*

Distribution of Aquatic Resources Around Kauai and Niihau; Dive Sites

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2001

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Marine Mammal Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Asquith, A. (Sea Grant, Kauai)

*Publication\_Date:* Unpublished Material

*Title:* Seabird Nesting Locations and Monk Seal Distribution for Kauai

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2001

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Marine Mammal Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Drigot, D. (U.S. Marine Corp, Kaneohe Bay)

*Publication\_Date:* Unpublished Material

*Title:*

Monk Seal Haul-Outs and Pupping in and Around Kaneohe Bay; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2001

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Marine Mammal Information

*Process\_Step:*

*Process\_Description:*

Two main sources of data were used to depict marine mammal distribution for this data layer: 1) Personal interviews with resource experts from National Marine Fisheries Service (NMFS), University of Hawaii (UH), Division of Land and Natural Resources (DLNR), and other agencies; and 2) the 1999 Mobley et al. "Results of Aerial Surveys of Marine Mammals in the Major Hawaiian Islands (1993-1998)" hardcopy report. Information gathered during a set of interviews was compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles. A second set of interviews was conducted following the data compilation phase, and edits were made based on recommendations by the resource experts. Maps and figures from the 1999 Mobley et al. report, which depicted concentration areas for cetacean species based on survey data collected between 1993-1998, were used in addition to expert knowledge.

*Process\_Date:* 200111

*Process\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NOAA, Office of Response and Restoration  
*Contact\_Person:* Jill Petersen

*Contact\_Address:*

*Address\_Type:* Physical address  
*Address:* 7600 Sand Point Way, N.E.  
*City:* Seattle  
*State\_or\_Province:* Washington  
*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944  
*Contact\_Facsimile\_Telephone:* (206) 526-6329  
*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

---

*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector  
*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* GT-polygon composed of rings  
*Point\_and\_Vector\_Object\_Count:* 2186

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Area point  
*Point\_and\_Vector\_Object\_Count:* 2186

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Complete chain  
*Point\_and\_Vector\_Object\_Count:* 4339

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Link  
*Point\_and\_Vector\_Object\_Count:* 968120

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Node, planar graph  
*Point\_and\_Vector\_Object\_Count:* 4180

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Geographic:*

*Latitude\_Resolution:* 0.00005  
*Longitude\_Resolution:* 0.00005  
*Geographic\_Coordinate\_Units:* Decimal degrees

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* Old Hawaiian Datum  
*Ellipsoid\_Name:* Clarke 1866  
*Semi-major\_Axis:* 6378206.4  
*Denominator\_of\_Flattening\_Ratio:* 294.9786982

*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 Hawaii, it is 65), 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, T\_E, 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 spatial data layer M\_MAMMAL contains vector polygons representing marine 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 (65), 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:* 650400002*Range\_Domain\_Maximum:* 650402186*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:* 65000821*Range\_Domain\_Maximum:* 65000904*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:* 65000001

*Range\_Domain\_Maximum:* 65000977

*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 (65), 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:* 650100002

*Range\_Domain\_Maximum:* 653700236

*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:* 650100002

*Range\_Domain\_Maximum:* 653700236

*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. This field contains counts of Hawaiian monk seals in defined nearshore areas, and non-numerical terms that are used to describe the relative abundance of particular marine mammal species. Counts refer to the number of Hawaiian monk seals present in a particular location. The field may contain counts of individuals (XX). The descriptive terms "VERY HIGH" and "HIGH" were used to describe the relative abundance of marine mammal species at a particular location. In cases where no quantitative count or qualitative description was available, the field is blank.

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Any character*Enumerated\_Domain\_Value\_Definition:* Free text*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*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 BIORIS 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 (eg. 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 (eg. 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*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Species common name for the entire ESI data set*Enumerated\_Domain\_Value\_Definition:* Free text*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* GEN\_SPEC*Attribute\_Definition:* Species scientific name*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:*

*Enumerated\_Domain:**Enumerated\_Domain\_Value:* Species scientific name for the entire ESI data set*Enumerated\_Domain\_Value\_Definition:* Free text*Enumerated\_Domain\_Value\_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:* SUBELEMENT

*Attribute\_Definition:*

Element subgroup delineating a logical grouping of the 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:* algae  
*Enumerated\_Domain\_Value\_Definition:* Algae habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* alligator  
*Enumerated\_Domain\_Value\_Definition:* Alligator or crocodile  
*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:* barnacle  
*Enumerated\_Domain\_Value\_Definition:* Barnacle  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bat  
*Enumerated\_Domain\_Value\_Definition:* Bat  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bear  
*Enumerated\_Domain\_Value\_Definition:* Bear  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bird  
*Enumerated\_Domain\_Value\_Definition:* Bird  
*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:* canine  
*Enumerated\_Domain\_Value\_Definition:* Canine  
*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:* chordate*Enumerated\_Domain\_Value\_Definition:* Chordate*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* coral*Enumerated\_Domain\_Value\_Definition:* Coral habitat, community, or species*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:* crayfish*Enumerated\_Domain\_Value\_Definition:* Crayfish*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* diadromous*Enumerated\_Domain\_Value\_Definition:* Diadromous fish*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* diving*Enumerated\_Domain\_Value\_Definition:* Diving bird*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* e\_nursery*Enumerated\_Domain\_Value\_Definition:* Estuarine nursery fish*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* e\_resident  
*Enumerated\_Domain\_Value\_Definition:* Estuarine resident fish  
*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:* fav  
*Enumerated\_Domain\_Value\_Definition:* Floating aquatic vegetation  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* feline  
*Enumerated\_Domain\_Value\_Definition:* Feline  
*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:* freshwater  
*Enumerated\_Domain\_Value\_Definition:* Freshwater fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* frog

*Enumerated\_Domain\_Value\_Definition:* Frog  
*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:* hardbottom  
*Enumerated\_Domain\_Value\_Definition:* Hardbottom habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* landfowl  
*Enumerated\_Domain\_Value\_Definition:* Landfowl  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* lizard  
*Enumerated\_Domain\_Value\_Definition:* Lizard  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* lobster  
*Enumerated\_Domain\_Value\_Definition:* Lobster  
*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:* m\_resident  
*Enumerated\_Domain\_Value\_Definition:* Marine resident fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* passerine  
*Enumerated\_Domain\_Value\_Definition:* Passerine or passerine-like 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:* polar bear  
*Enumerated\_Domain\_Value\_Definition:* Polar bear  
*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:* reef  
*Enumerated\_Domain\_Value\_Definition:* Reef habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* sav  
*Enumerated\_Domain\_Value\_Definition:* Submersed 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:* shellfish  
*Enumerated\_Domain\_Value\_Definition:* Shellfish  
*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:* Shrimp  
*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:* snake  
*Enumerated\_Domain\_Value\_Definition:* Snake  
*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:* upland  
*Enumerated\_Domain\_Value\_Definition:* Upland habitat, plant community, or plant species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* wading  
*Enumerated\_Domain\_Value\_Definition:* Wading bird  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* waterfowl  
*Enumerated\_Domain\_Value\_Definition:* Waterfowl  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* wetland  
*Enumerated\_Domain\_Value\_Definition:* Wetland habitat, plant community, or plant species  
*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:* 0  
*Enumerated\_Domain\_Value\_Definition:* Not ranked  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric

*Enumerated\_Domain\_Value\_Definition:* mmyyyy

*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 (eg. 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 (eg. 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 (eg. 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/mating; if ELEMENT is "REPTILE" then BREED1 = nesting; if ELEMENT is "M\_MAMMAL" then BREED1 = mating. This attribute is not used for T\_MAMMAL or HABITAT elements except when SUBELEMENT is "coral," then BREED1 = spawning.

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Y*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* N*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* -*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* BREED2

*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED2 = laying; if ELEMENT is "FISH" then BREED2 = eggs; if ELEMENT is "INVERT" then BREED2 = eggs; if ELEMENT is "REPTILE" then BREED2 = hatching; if ELEMENT is "M\_MAMMAL" then BREED2 = calving. This attribute is not used for T\_MAMMAL or HABITAT elements except when SUBELEMENT is "coral," then BREED2 = juvenile.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Y

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* N

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* -

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* BREED3

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Y

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* N

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* -

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* BREED4

*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED4 = fledging; if ELEMENT is "FISH" then BREED4 = juvenile; if ELEMENT is "INVERT" then BREED4 = juvenile; if ELEMENT is "REPTILE" then BREED4 = juvenile; if ELEMENT is "M\_MAMMAL" then BREED4 = molting. This attribute is not used for HABITAT or T\_MAMMAL elements.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Y

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* N

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* -

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* BREED5

*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "FISH" then BREED5 = adults; if ELEMENT is "INVERT" then BREED5 = adults; if ELEMENT is "REPTILE" then

BREED5 = adults. This attribute is not used for BIRD, M\_MAMMAL, HABITAT or T\_MAMMAL elements.

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: Y

*Enumerated\_Domain\_Value\_Definition*: Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: N

*Enumerated\_Domain\_Value\_Definition*: Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: -

*Enumerated\_Domain\_Value\_Definition*:

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

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Detailed\_Description*:

*Entity\_Type*:

*Entity\_Type\_Label*: SOURCES

*Entity\_Type\_Definition*:

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

*Entity\_Type\_Definition\_Source*: Research Planning, Inc.

*Attribute*:

*Attribute\_Label*: SOURCE\_ID

*Attribute\_Definition*:

Source identifier that links records in the SOURCES data table to the items G\_SOURCE and A\_SOURCE in the SOC\_DAT table, and to G\_SOURCE and S\_SOURCE in the BIORES table.

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Range\_Domain*:

*Range\_Domain\_Minimum*: 1

*Range\_Domain\_Maximum*: N

*Attribute*:

*Attribute\_Label:* ORIGINATOR

*Attribute\_Definition:* Author or developer of source material or data set

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*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:* Numeric

*Enumerated\_Domain\_Value\_Definition:* mmyyyy

*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:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* DATA\_FORMAT

*Attribute\_Definition:* The format of the source material

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* PUBLICATION

*Attribute\_Definition:* Additional citation information

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SCALE

*Attribute\_Definition:* Scale denominator of the source

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* integer

*Enumerated\_Domain\_Value\_Definition:* Any integer

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* TIME\_PERIOD

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric

*Enumerated\_Domain\_Value\_Definition:* yyyy

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* STATUS

*Entity\_Type\_Definition:*

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

*Entity\_Type\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* ELEMENT

*Attribute\_Definition:* Major categories of biological data

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* BIRD

*Enumerated\_Domain\_Value\_Definition:* Birds

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* FISH

*Enumerated\_Domain\_Value\_Definition:* Fish

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* HABITAT

*Enumerated\_Domain\_Value\_Definition:* Habitats and Plants

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* INVERT

*Enumerated\_Domain\_Value\_Definition:* Invertebrates

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* M\_MAMMAL

*Enumerated\_Domain\_Value\_Definition:* Marine Mammals

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* REPTILE

*Enumerated\_Domain\_Value\_Definition:* Reptiles and Amphibians

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* T\_MAMMAL  
*Enumerated\_Domain\_Value\_Definition:* Terrestrial Mammals  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SPECIES\_ID

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 1

*Range\_Domain\_Maximum:* N

*Attribute:*

*Attribute\_Label:* STATE

*Attribute\_Definition:* Two-letter state abbreviation

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Two-letter state abbreviation

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* S\_F

*Attribute\_Definition:* State and Federal status.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* F

*Enumerated\_Domain\_Value\_Definition:* Federally listed

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* S

*Enumerated\_Domain\_Value\_Definition:* State listed

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* S/F  
*Enumerated\_Domain\_Value\_Definition:* State and federally listed  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* T\_E  
*Attribute\_Definition:* Threatened and endangered status.  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* E  
*Enumerated\_Domain\_Value\_Definition:* Endangered on state or federal list  
*Enumerated\_Domain\_Value\_Definition\_Source:* U.S. Fish and Wildlife Service

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* T  
*Enumerated\_Domain\_Value\_Definition:* Threatened on state or federal list  
*Enumerated\_Domain\_Value\_Definition\_Source:* U.S. Fish and Wildlife Service

*Attribute:*

*Attribute\_Label:* DATE\_PUB  
*Attribute\_Definition:*  
 Publication date of source material used to assign state and federal status values for each species, if used.  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric  
*Enumerated\_Domain\_Value\_Definition:* mmyyyy  
*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 (eg. 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 Hawaii

##### *Distribution\_Liability:*

Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer input peripherals, or when the physical medium is delivered in damaged condition.

##### *Custom\_Order\_Process:*

Contact NOAA for distribution options (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI\_Viewer product are also included on the distribution CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

---

#### *Metadata\_Reference\_Information:*

*Metadata\_Date*: 200111

*Metadata\_Review\_Date*: 200111

*Metadata\_Contact*:

##### *Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* Jill Petersen

*Contact\_Organization:* NOAA, Office of Response and Restoration

*Contact\_Position:* GIS Manager

*Contact\_Address:*

*Address\_Type:* Physical Address

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

*City:* Seattle

*State\_or\_Province:* Washington

*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944

*Contact\_Facsimile\_Telephone:* (206) 526-6329

*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

*Metadata\_Standard\_Name:* Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

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# Hawaii ESI: M\_MAMPT (Marine Mammal Points)

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

##### *Originator:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

*Publication\_Date:* 200111

*Title:* Hawaii ESI: M\_MAMPT (Marine Mammal Points)

*Edition:* Second

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

##### *Series\_Information:*

*Series\_Name:* None

*Issue\_Identification:* Hawaii

##### *Publication\_Information:*

*Publication\_Place:* Seattle, Washington

##### *Publisher:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

##### *Other\_Citation\_Details:*

Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

### *Description:*

#### *Abstract:*

This data set contains sensitive biological resource data for endangered Hawaiian monk seal pupping and haul-out sites. Vector points in this data set represent Hawaiian monk seal pupping and haul-out sites. Species-specific abundance, seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in

conjunction with this spatial data layer. This data set comprises a portion of the Environmental Sensitivity Index (ESI) data for Hawaii. ESI data characterize the marine and coastal environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources. See also the M\_MAMMAL data layer, part of the larger Hawaii ESI database, for additional marine mammal information.

*Purpose:*

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

*Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 2000

*Ending\_Date:* 2001

*Currentness\_Reference:*

The biological data were compiled during 2000-2001. The currentness dates for these data range from 2000 to 2001 and are documented in the Source\_Information section.

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* None Scheduled

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -179.278

*East\_Bounding\_Coordinate:* -154.598

*North\_Bounding\_Coordinate:* 29.252

*South\_Bounding\_Coordinate:* 18.713

*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:* Hawaii

*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:*

Relationships between spatial data layers and attribute data tables for the Hawaii ESI data.

*Browse\_Graphic\_File\_Type:* JPEG

*Data\_Set\_Credit:*

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

*Native\_Data\_Set\_Environment:*

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20), and PC's with Windows Operating System (NT4.0/2000). The *Spatial\_Data\_Organization\_Information* section refers only to the source files in the ARC export format. The following files are included in that data set: bathy.e00, birds.e00, bio\_lut.e00, biofile.e00, biores.e00, breed.e00, breed\_dt.e00, cass\_pt.e00, esi.e00, fish.e00, fishpt.e00, habitats.e00, habpt.e00, hydro.e00, index.e00, invert.e00, invertpt.e00, m\_mammals.e00, m\_mampt.e00, mgt.e00, nests.e00, pools.e00, reptiles.e00, reptpt.e00, seasonal.e00, soc\_dat.e00, soc\_lut.e00, socecon.e00, sources.e00, species.e00, status.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, socecon, sources, species, and status.

*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

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

*Logical\_Consistency\_Report:*

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

*Completeness\_Report:*

These data represent a synthesis of expert knowledge on Hawaiian monk seal haul-out and pupping sites. Refer to the M\_MAMMAL data layer for additional Hawaiian monk seal pupping and haul-out site information. These data do not represent all Hawaiian monk seal haul-out and pupping sites in the state of Hawaii. The following species is included in this data set (Species\_ID, Common Name, Scientific Name, if applicable): 51, Hawaiian monk seal, *Monachus schauinslandi*.

*Positional\_Accuracy:**Horizontal\_Positional\_Accuracy:**Horizontal\_Positional\_Accuracy\_Report:*

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

*Lineage:**Source\_Information:**Source\_Citation:**Citation\_Information:*

*Originator:* Gulko, D. (Department of Land and Natural Resources, Oahu)

*Publication\_Date:* Unpublished Material

*Title:*

Coral, Fish, Invertebrate, Sea Turtle, and Marine Mammal Concentration Areas;  
Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Monk Seal Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Walker, R. (U.S. Fish and Wildlife Service, Oahu)

*Publication\_Date:* Unpublished Material

*Title:*

Endangered and Migratory Bird Concentration Areas and Seasonality; Monk Seal Haul-out and Pupping locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Monk Seal Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Dupree, M. (National Marine Fisheries Service, Oahu)

*Publication\_Date:* Unpublished Material

*Title:* Sea Turtle and Monk Seal Distribution

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Monk Seal Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:*

National Marine Fisheries Service, Marine Mammal Research Program

*Publication\_Date:* Unpublished Material

*Title:* Marine Mammal and Reptile Distribution Seasonality

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Monk Seal Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Heacock, D. (Department of Land and Natural Resources, Kauai)

*Publication\_Date:* Unpublished Material

*Title:*

Coral, Fish, Invertebrate, Bird, Reptile, and Marine Mammal Distribution for  
Kauai

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Monk Seal Information

*Process\_Step:*

*Process\_Description:*

Personal interviews with resource experts from National Marine Fisheries Service (NMFS), Division of Land and Natural Resources (DLNR), and other agencies were the primary sources of data used to depict Hawaiian monk seal pupping and haul-out sites for this data layer. Information gathered during a set of interviews was compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles. A second set of interviews was conducted following the data compilation phase, and edits were made based on recommendations by the resource experts.

*Process\_Date:* 200111

*Process\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NOAA, Office of Response and Restoration

*Contact\_Person:* Jill Petersen

*Contact\_Address:*

*Address\_Type:* Physical address

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

*City:* Seattle

*State\_or\_Province:* Washington

*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944

*Contact\_Facsimile\_Telephone:* (206) 526-6329

*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Entity Point

*Point\_and\_Vector\_Object\_Count:* 8

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:**Geographic:*

*Latitude\_Resolution:* 0.00005  
*Longitude\_Resolution:* 0.00005  
*Geographic\_Coordinate\_Units:* Decimal degrees

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* Old Hawaiian Datum  
*Ellipsoid\_Name:* Clarke 1866  
*Semi-major\_Axis:* 6378206.4  
*Denominator\_of\_Flattening\_Ratio:* 294.9786982

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*Entity\_and\_Attribute\_Information:**Overview\_Description:**Entity\_and\_Attribute\_Overview:*

In addition to the geographic data layers, six relational attribute or data tables, BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS, are used to store the complex biological data in the ESI data structure. The geographic data layer containing biological resource information (in this case, M\_MAMPT) is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO\_LUT, or it can be linked directly using RARNUM. The ID is a unique combination of the atlas number (for Hawaii, it is 65), 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, T\_E, NHP, DATE\_PUB, CONC, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC, BREED1, BREED2, BREED3, BREED4, BREED5, RARNUM, G\_SOURCE, S\_SOURCE, and BREED. All of these items are the same as their counterparts in the individual data tables described below, except the BREED1-BREED5 and BREED items. BREED is a newly generated variable used to link to the BREED\_DT data table, a modified, more compact version of the relational BREED data table. BREED1-BREED5 give a text summary of when each life stage occurs within the associated map object. The life stages referred to are the same as those listed in the Detailed\_Description of the BREED data table. The link to the BIOFILE may be made through the BIO\_LUT, using ID to link to RARNUM, or BIOFILE may be linked directly to the RARNUM in each of the geographic layer's attribute data tables. As mentioned, BREED\_DT is an auxiliary support data table to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED\_DT is the BREED item. A second supporting data table is SOURCES. This is the same as the source file described above, and the link from the flat file is both G\_SOURCE and S\_SOURCE. It should be noted that although the flat file eases data query, it is not a normalized database structure, and actual updates performed by the states and other responsible agencies should be done using the relational data

tables. The entity-relationship diagram describing relationships between attribute tables in the ESI data structure does NOT include the BIOFILE data table, and this data table is NOT described in detail below.

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* M\_MAMPT.PAT

*Entity\_Type\_Definition:*

The spatial data layer M\_MAMPT contains vector points representing Hawaiian monk seal pupping and haul-out sites. Note that all attribute information is stored in a series of relational files, described below. See the Browse\_Graphic section for a link to the entity-relationship diagram, which describes the relationships between attribute tables in the ESI data structure.

*Entity\_Type\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* ID

*Attribute\_Definition:*

An identifier that links vector objects in the biology data layers to records in the BIO\_LUT data table. ID is a concatenation of atlas number (65), element number (34 [30 because it is a point feature, plus 4, the element value for M\_MAMMAL]), and record number.

*Attribute\_Definition\_Source:* NOAA

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 653400001

*Range\_Domain\_Maximum:* 653400008

*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:* 65000822

*Range\_Domain\_Maximum:* 65000843

*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.

*Attribute\_Definition\_Source*: NOAA

*Attribute\_Domain\_Values*:

*Range\_Domain*:

*Range\_Domain\_Minimum*: 65000001

*Range\_Domain\_Maximum*: 65000977

*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 (65), element number (34 [30 because it is a point feature, plus 4, the element value for M\_MAMMAL]), and record number.

*Attribute\_Definition\_Source*: NOAA

*Attribute\_Domain\_Values*:

*Range\_Domain*:

*Range\_Domain\_Minimum*: 650100002

*Range\_Domain\_Maximum*: 653700236

*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:* 650100002  
*Range\_Domain\_Maximum:* 653700236

*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 marine mammal species at a particular location. No quantitative or qualitative concentration information is available for marine mammal point locations, therefore the field is blank.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*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 (eg. 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 (eg. 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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Species common name for the entire ESI data set

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* GEN\_SPEC

*Attribute\_Definition:* Species scientific name  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Species scientific name for the entire ESI data set  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_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:* SUBELEMENT

*Attribute\_Definition:*

Element subgroup delineating a logical grouping of the 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:* algae

*Enumerated\_Domain\_Value\_Definition:* Algae habitat, community, or species

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* alligator

*Enumerated\_Domain\_Value\_Definition:* Alligator or crocodile

*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:* barnacle  
*Enumerated\_Domain\_Value\_Definition:* Barnacle  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bat  
*Enumerated\_Domain\_Value\_Definition:* Bat  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bear  
*Enumerated\_Domain\_Value\_Definition:* Bear  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bird  
*Enumerated\_Domain\_Value\_Definition:* Bird  
*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:* canine  
*Enumerated\_Domain\_Value\_Definition:* Canine  
*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:* chordate  
*Enumerated\_Domain\_Value\_Definition:* Chordate  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* coral  
*Enumerated\_Domain\_Value\_Definition:* Coral habitat, community, or species  
*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:* crayfish  
*Enumerated\_Domain\_Value\_Definition:* Crayfish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* diadromous  
*Enumerated\_Domain\_Value\_Definition:* Diadromous fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* diving  
*Enumerated\_Domain\_Value\_Definition:* Diving bird  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* e\_nursery  
*Enumerated\_Domain\_Value\_Definition:* Estuarine nursery fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* e\_resident  
*Enumerated\_Domain\_Value\_Definition:* Estuarine resident fish  
*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:* fav  
*Enumerated\_Domain\_Value\_Definition:* Floating aquatic vegetation  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* feline  
*Enumerated\_Domain\_Value\_Definition:* Feline  
*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:* freshwater  
*Enumerated\_Domain\_Value\_Definition:* Freshwater fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* frog  
*Enumerated\_Domain\_Value\_Definition:* Frog  
*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:* hardbottom  
*Enumerated\_Domain\_Value\_Definition:* Hardbottom habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* landfowl  
*Enumerated\_Domain\_Value\_Definition:* Landfowl  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* lizard  
*Enumerated\_Domain\_Value\_Definition:* Lizard  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* lobster  
*Enumerated\_Domain\_Value\_Definition:* Lobster  
*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:* m\_resident  
*Enumerated\_Domain\_Value\_Definition:* Marine resident fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* passerine  
*Enumerated\_Domain\_Value\_Definition:* Passerine or passerine-like 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:* polar bear  
*Enumerated\_Domain\_Value\_Definition:* Polar bear  
*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:* reef  
*Enumerated\_Domain\_Value\_Definition:* Reef habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* sav  
*Enumerated\_Domain\_Value\_Definition:* Submersed 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:* shellfish  
*Enumerated\_Domain\_Value\_Definition:* Shellfish  
*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:* Shrimp  
*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:* snake  
*Enumerated\_Domain\_Value\_Definition:* Snake  
*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:* upland  
*Enumerated\_Domain\_Value\_Definition:* Upland habitat, plant community, or plant species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* wading  
*Enumerated\_Domain\_Value\_Definition:* Wading bird  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* waterfowl  
*Enumerated\_Domain\_Value\_Definition:* Waterfowl  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* wetland  
*Enumerated\_Domain\_Value\_Definition:* Wetland habitat, plant community, or plant species  
*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:* 0

*Enumerated\_Domain\_Value\_Definition:* Not ranked  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric  
*Enumerated\_Domain\_Value\_Definition:* mmyyyy  
*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 (eg. 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 (eg. 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 (eg. 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/mating; if ELEMENT is "REPTILE" then BREED1 = nesting; if ELEMENT is "M\_MAMMAL" then BREED1 = mating. This attribute is not used for T\_MAMMAL or HABITAT elements except when SUBELEMENT is "coral," then BREED1 = spawning.

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: Y

*Enumerated\_Domain\_Value\_Definition*: Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: N

*Enumerated\_Domain\_Value\_Definition*: Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: -

*Enumerated\_Domain\_Value\_Definition*:

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

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* BREED2

*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED2 = laying; if ELEMENT is "FISH" then BREED2 = eggs; if ELEMENT is "INVERT" then BREED2 = eggs; if ELEMENT is "REPTILE" then BREED2 = hatching; if ELEMENT is "M\_MAMMAL" then BREED2 = calving. This attribute is not used for T\_MAMMAL or HABITAT elements except when SUBELEMENT is "coral," then BREED2 = juvenile.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Y

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* N

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* -

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* BREED3

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Y

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* N  
*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* -  
*Enumerated\_Domain\_Value\_Definition:*  
 Breed category not used or not appropriate for record(s) in question  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* BREED4

*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED4 = fledging; if ELEMENT is "FISH" then BREED4 = juvenile; if ELEMENT is "INVERT" then BREED4 = juvenile; if ELEMENT is "REPTILE" then BREED4 = juvenile; if ELEMENT is "M\_MAMMAL" then BREED4 = molting. This attribute is not used for HABITAT or T\_MAMMAL elements.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Y  
*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* N  
*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* -  
*Enumerated\_Domain\_Value\_Definition:*  
 Breed category not used or not appropriate for record(s) in question  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* BREED5

*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "FISH" then BREED5 = adults; if ELEMENT is "INVERT" then BREED5 = adults; if ELEMENT is "REPTILE" then

BREED5 = adults. This attribute is not used for BIRD, M\_MAMMAL, HABITAT or T\_MAMMAL elements.

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: Y

*Enumerated\_Domain\_Value\_Definition*: Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: N

*Enumerated\_Domain\_Value\_Definition*: Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: -

*Enumerated\_Domain\_Value\_Definition*:

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

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Detailed\_Description*:

*Entity\_Type*:

*Entity\_Type\_Label*: SOURCES

*Entity\_Type\_Definition*:

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

*Entity\_Type\_Definition\_Source*: Research Planning, Inc.

*Attribute*:

*Attribute\_Label*: SOURCE\_ID

*Attribute\_Definition*:

Source identifier that links records in the SOURCES data table to the items G\_SOURCE and A\_SOURCE in the SOC\_DAT table, and to G\_SOURCE and S\_SOURCE in the BIORES table.

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Range\_Domain*:

*Range\_Domain\_Minimum*: 1

*Range\_Domain\_Maximum*: N

*Attribute*:

*Attribute\_Label:* ORIGINATOR

*Attribute\_Definition:* Author or developer of source material or data set

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*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:* Numeric

*Enumerated\_Domain\_Value\_Definition:* mmyyyy

*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:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* DATA\_FORMAT

*Attribute\_Definition:* The format of the source material

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* PUBLICATION

*Attribute\_Definition:* Additional citation information

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SCALE

*Attribute\_Definition:* Scale denominator of the source

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* integer

*Enumerated\_Domain\_Value\_Definition:* Any integer

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* TIME\_PERIOD

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric

*Enumerated\_Domain\_Value\_Definition:* yyyy

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* STATUS

*Entity\_Type\_Definition:*

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

*Entity\_Type\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* ELEMENT

*Attribute\_Definition:* Major categories of biological data

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* BIRD

*Enumerated\_Domain\_Value\_Definition:* Birds

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* FISH

*Enumerated\_Domain\_Value\_Definition:* Fish

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* HABITAT

*Enumerated\_Domain\_Value\_Definition:* Habitats and Plants

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* INVERT

*Enumerated\_Domain\_Value\_Definition:* Invertebrates

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* M\_MAMMAL

*Enumerated\_Domain\_Value\_Definition:* Marine Mammals

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* REPTILE

*Enumerated\_Domain\_Value\_Definition:* Reptiles and Amphibians

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* T\_MAMMAL  
*Enumerated\_Domain\_Value\_Definition:* Terrestrial Mammals  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SPECIES\_ID

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 1

*Range\_Domain\_Maximum:* N

*Attribute:*

*Attribute\_Label:* STATE

*Attribute\_Definition:* Two-letter state abbreviation

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Two-letter state abbreviation

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* S\_F

*Attribute\_Definition:* State and Federal status.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* F

*Enumerated\_Domain\_Value\_Definition:* Federally listed

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* S

*Enumerated\_Domain\_Value\_Definition:* State listed

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* S/F  
*Enumerated\_Domain\_Value\_Definition:* State and federally listed  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* T\_E  
*Attribute\_Definition:* Threatened and endangered status.  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* E  
*Enumerated\_Domain\_Value\_Definition:* Endangered on state or federal list  
*Enumerated\_Domain\_Value\_Definition\_Source:* U.S. Fish and Wildlife Service

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* T  
*Enumerated\_Domain\_Value\_Definition:* Threatened on state or federal list  
*Enumerated\_Domain\_Value\_Definition\_Source:* U.S. Fish and Wildlife Service

*Attribute:*

*Attribute\_Label:* DATE\_PUB  
*Attribute\_Definition:*  
 Publication date of source material used to assign state and federal status values for each species, if used.  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric  
*Enumerated\_Domain\_Value\_Definition:* mmyyyy  
*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 (eg. 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 Hawaii

##### *Distribution\_Liability:*

Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer input peripherals, or when the physical medium is delivered in damaged condition.

##### *Custom\_Order\_Process:*

Contact NOAA for distribution options (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI\_Viewer product are also included on the distribution CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

---

#### *Metadata\_Reference\_Information:*

*Metadata\_Date*: 200111

*Metadata\_Review\_Date*: 200111

*Metadata\_Contact*:

##### *Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* Jill Petersen

*Contact\_Organization:* NOAA, Office of Response and Restoration

*Contact\_Position:* GIS Manager

*Contact\_Address:*

*Address\_Type:* Physical Address

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

*City:* Seattle

*State\_or\_Province:* Washington

*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944

*Contact\_Facsimile\_Telephone:* (206) 526-6329

*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

*Metadata\_Standard\_Name:* Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

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# Hawaii ESI: REPTILES (Reptile and Amphibian Polygons)

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

##### *Originator:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

*Publication\_Date:* 200111

*Title:* Hawaii ESI: REPTILES (Reptile and Amphibian Polygons)

*Edition:* Second

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

##### *Series\_Information:*

*Series\_Name:* None

*Issue\_Identification:* Hawaii

##### *Publication\_Information:*

*Publication\_Place:* Seattle, Washington

##### *Publisher:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

##### *Other\_Citation\_Details:*

Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

#### *Description:*

##### *Abstract:*

This data set contains sensitive biological resource data for threatened/endangered sea turtles in

coastal Hawaii. Vector polygons in this data set represent sea turtle concentration areas, and nesting and basking locations. Species-specific abundance, seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer. This data set comprises a portion of the Environmental Sensitivity Index (ESI) data for Hawaii. ESI data characterize the marine and coastal environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources. See also the REPTPT (Reptile and Amphibian Points) data layer, part of the larger Hawaii ESI database, for additional sea turtle information.

*Purpose:*

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

*Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 2000

*Ending\_Date:* 2001

*Currentness\_Reference:*

The biological data were compiled during 2000-2001. The currentness dates for these data range from 1995 to 2001 and are documented in the Source\_Information section.

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* None Scheduled

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -179.278

*East\_Bounding\_Coordinate:* -154.598

*North\_Bounding\_Coordinate:* 29.252

*South\_Bounding\_Coordinate:* 18.713

*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

*Place:*

*Place\_Keyword\_Thesaurus:* None

*Place\_Keyword:* Hawaii

*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:*

Relationships between spatial data layers and attribute data tables for the Hawaii ESI data.

*Browse\_Graphic\_File\_Type:* JPEG

*Data\_Set\_Credit:*

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

*Native\_Data\_Set\_Environment:*

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20), and PC's with Windows Operating System (NT4.0/2000). The *Spatial\_Data\_Organization\_Information* section refers only to the source files in the ARC export format. The following files are included in that data set: bathy.e00, birds.e00, bio\_lut.e00, biofile.e00, biores.e00, breed.e00, breed\_dt.e00, cass\_pt.e00, esi.e00, fish.e00, fishpt.e00, habitats.e00, habpt.e00, hydro.e00, index.e00, invert.e00, invertpt.e00, m\_mammals.e00, m\_mampt.e00, mgt.e00, nests.e00, pools.e00, reptiles.e00, reptpt.e00, seasonal.e00, soc\_dat.e00, soc\_lut.e00, socecon.e00, sources.e00, species.e00, status.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, socecon, sources, species, and status.

*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

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

methodology used to collect and compile such data. For a more detailed evaluation of source data attribute accuracy, contact the sources listed in the Lineage section.

*Logical\_Consistency\_Report:*

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

*Completeness\_Report:*

These data represent a synthesis of expert knowledge and available hardcopy reports on sea turtle nesting locations and concentration areas. Refer to the REPTPT (Reptile and Amphibian Points) data layer for additional sea turtle nesting and rare occurrence information. These data do not represent all sea turtle occurrences in the state of Hawaii. The following species are included in this data set (Species\_ID, Common Name, Scientific Name, if applicable): 2, Green sea turtle, *Chelonia mydas*; 6, Loggerhead sea turtle, *Caretta caretta*; 9, Hawksbill sea turtle, *Eretmochelys imbricata*.

*Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy\_Report:*

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

*Lineage:*

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Gulko, D. (Department of Land and Natural Resources, Oahu)

*Publication\_Date:* Unpublished Material

*Title:*

Coral, Fish, Invertebrate, Sea Turtle, and Marine Mammal Concentration Areas;  
Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Reptile Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Smith, C. (University of Hawaii, Oahu)

*Publication\_Date:* Unpublished Material

*Title:* Algae and Sea Turtle Distribution

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Reptile Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Oishi, F. (Department of Land and Natural Resources, Oahu)

*Publication\_Date:* Unpublished Material

*Title:*

Fish, Invertebrate, Benthic Habitats, Reptile Distribution and Seasonality;  
Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Reptile Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Oishi, F. and A. Everson

*Publication\_Date:* Unpublished Material

*Title:*

Fish, Invertebrate, and Sea Turtle Distribution and Seasonality for Oahu/  
Northwestern Hawaiian Islands; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Reptile Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Everson, A. (National Marine Fisheries Service, Oahu)

*Publication\_Date:* Unpublished Material

*Title:*

Fish and Invertebrate Distribution and Seasonality; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Reptile Information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:*

National Marine Fisheries Service; U.S. Fish and Wildlife Service

*Publication\_Date:* 1998*Title:*Recovery Plan for U.S. Pacific Populations of the Green Turtle (*Chelonia mydas*)*Geospatial\_Data\_Presentation\_Form:* Hardcopy text*Publication\_Information:**Publication\_Place:* Silver Spring, MD*Publisher:* National Marine Fisheries Service*Type\_of\_Source\_Media:* Paper*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 1998*Source\_Currentness\_Reference:* Date of publication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Reptile Information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Swenson, C. (U.S. Fish and Wildlife Service, Oahu)*Publication\_Date:* Unpublished Material*Title:*

Plant, Bird, Marine Mammal, Sea Turtle, Fish, and Invertebrate Concentration

## Areas

*Geospatial\_Data\_Presentation\_Form*: Expert knowledge

*Type\_of\_Source\_Media*: Personal communication

*Source\_Time\_Period\_of\_Content*:

*Time\_Period\_Information*:

*Single\_Date/Time*:

*Calendar\_Date*: 2000

*Source\_Currentness\_Reference*: Date of communication

*Source\_Citation\_Abbreviation*: None

*Source\_Contribution*: Reptile Information

*Source\_Information*:

*Source\_Citation*:

*Citation\_Information*:

*Originator*: Dupree, M. (National Marine Fisheries Service, Oahu)

*Publication\_Date*: Unpublished Material

*Title*: Sea Turtle and Monk Seal Distribution

*Geospatial\_Data\_Presentation\_Form*: Expert knowledge

*Type\_of\_Source\_Media*: Personal communication

*Source\_Time\_Period\_of\_Content*:

*Time\_Period\_Information*:

*Single\_Date/Time*:

*Calendar\_Date*: 2000

*Source\_Currentness\_Reference*: Date of communication

*Source\_Citation\_Abbreviation*: None

*Source\_Contribution*: Reptile Information

*Source\_Information*:

*Source\_Citation*:

*Citation\_Information*:

*Originator*:

National Marine Fisheries Service, Marine Mammal Research Program

*Publication\_Date*: Unpublished Material

*Title*: Marine Mammal and Reptile Distribution Seasonality

*Geospatial\_Data\_Presentation\_Form*: Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Reptile Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:*

Nishimoto, R. (Department of Land and Natural Resources, Hilo, Hawaii)

*Publication\_Date:* Unpublished Material

*Title:*

Fish, Invertebrate, Coral, Reptile, Bird Distribution; Fish/Invertebrate  
 Seasonality; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Reptile Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Gulko, D. and C. Swenson

*Publication\_Date:* Unpublished Material

*Title:*

Invertebrate and Reptile Concentration Areas; Subsistence Fishing Points

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Reptile Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Heacock, D. (Department of Land and Natural Resources, Kauai)

*Publication\_Date:* Unpublished Material

*Title:*

Coral, Fish, Invertebrate, Bird, Reptile, and Marine Mammal Distribution for  
 Kauai

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Reptile Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Parrish, F. (National Marine Fisheries Service, Oahu)

*Publication\_Date:* Unpublished Material

*Title:*

Invertebrate, Marine Mammal, Reptile, and Precious Coral Distribution for  
 Oahu/Northwestern Hawaiian Islands

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Reptile Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Puleloa, W. (Department of Land and Natural Resources, Molokai)

*Publication\_Date:* Unpublished Material

*Title:*

Fish, Invertebrate, and Sea Turtle Distribution for Molokai; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Reptile Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Misaki, E. (The Nature Conservancy, Molokai Chapter)

*Publication\_Date:* Unpublished Material

*Title:*

Biological Resource Distribution and Concentration Areas for Molokai

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Reptile Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Potts, R. (National Park Service, Molokai)

*Publication\_Date:* Unpublished Material

*Title:*

Biological Resource Distribution and Concentration Areas for Kalaupapa  
 National Heritage Program

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Reptile Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* National Marine Fisheries Service (NMFS); U.S. Fish and Wildlife  
 Service

*Publication\_Date:* 1998

*Title:*

Recovery Plan for U.S. Pacific Populations of the Hawksbill Turtle  
 (Eretmochelys imbricata)

*Geospatial\_Data\_Presentation\_Form*: Hardcopy text  
*Publication\_Information*:

*Publication\_Place*: Silver Spring, MD  
*Publisher*: National Marine Fisheries Service

*Type\_of\_Source\_Media*: Paper  
*Source\_Time\_Period\_of\_Content*:

*Time\_Period\_Information*:

*Single\_Date/Time*:

*Calendar\_Date*: 1998

*Source\_Currentness\_Reference*: Date of publication

*Source\_Citation\_Abbreviation*: None  
*Source\_Contribution*: Reptile Information

*Source\_Information*:

*Source\_Citation*:

*Citation\_Information*:

*Originator*: Hau, S. (Department of Land and Natural Resources, Maui)  
*Publication\_Date*: Unpublished Material  
*Title*:  
 Fish, Invertebrate, Reptile, and Marine Mammal Distribution for Maui  
*Geospatial\_Data\_Presentation\_Form*: Expert knowledge

*Type\_of\_Source\_Media*: Personal communication  
*Source\_Time\_Period\_of\_Content*:

*Time\_Period\_Information*:

*Single\_Date/Time*:

*Calendar\_Date*: 2000

*Source\_Currentness\_Reference*: Date of communication

*Source\_Citation\_Abbreviation*: None  
*Source\_Contribution*: Reptile Information

*Source\_Information*:

*Source\_Citation*:

*Citation\_Information*:

*Originator*: Brown, E. (University of Hawaii, Maui)

*Publication\_Date:* Unpublished Material

*Title:*

Coral, Algae, Reptile, Marine Mammal, Invertebrate, and Fish Distribution for Maui; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Reptile Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Nakai, G. (U.S. Fish and Wildlife Service, Maui)

*Publication\_Date:* Unpublished Material

*Title:*

Bird and Fish Distribution and Sea Turtle Nesting in Kealia Pond National Wildlife Refuge

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Reptile Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Jokiel, P., E.F Cox, and M.P. Crosby

*Publication\_Date:* 1995

*Title:*

An Evaluation of the Nearshore Coral Resources of Kahoolawe, Hawaii

*Geospatial\_Data\_Presentation\_Form:* Digital report

*Publication\_Information:*

*Publication\_Place:* Hawaii

*Publisher:*

[http://cramp.wcc.hawaii.edu/Study\\_Sites/Kahoolawe/  
An\\_Evaluation\\_of\\_the\\_Nearshore\\_Coral\\_Reef\\_Resources\\_of\\_Kahoolawe/  
default.asp](http://cramp.wcc.hawaii.edu/Study_Sites/Kahoolawe/An_Evaluation_of_the_Nearshore_Coral_Reef_Resources_of_Kahoolawe/default.asp)

*Type\_of\_Source\_Media:* On-line

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1995

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Reptile Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:*

Walsh, W. (Department of Land and Natural Resources, Kona, Hawaii)

*Publication\_Date:* Unpublished Material

*Title:*

Coral, Fish, Invertebrate, Reptile, and Marine Mammal Distribution for Big Island; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Reptile Information

*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:*

Hendricks, P. (Department of Land and Natural Resources, retired)

*Publication\_Date:* Unpublished Material*Title:* Distribution of Aquatic Resources for the Big Island*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Reptile Information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:*

Cotton, S. (Department of Land and Natural Resources, Kona, Hawaii)

*Publication\_Date:* Unpublished Material*Title:*

Hawksbill Sea Turtle Nesting Sites for the Big Island; Aquaculture

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Reptile Information*Source\_Information:*

*Source\_Citation:**Citation\_Information:**Originator:* Naughton, J. (National Marine Fisheries Service, Oahu)*Publication\_Date:* Unpublished Material*Title:*

Sea Turtle and Monk Seal Distribution for Northwestern Hawaiian Islands

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Reptile Information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Bail, L. (Bubbles Below, Inc.)*Publication\_Date:* Unpublished Material*Title:*

Distribution of Aquatic Resources Around Kauai and Niihau; Dive Sites

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2001*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Reptile Information*Source\_Information:**Source\_Citation:*

*Citation\_Information:*

*Originator:* Department of Land and Natural Resources, Division of Aquatic Resources (DAR); Hilo, Hawaii

*Publication\_Date:* 2001

*Title:*

Fish, Invertebrate, and Sea Turtle Distribution; Fish and Invertebrate Seasonality

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2001

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Reptile Information

*Process\_Step:**Process\_Description:*

Two main sources of data were used to depict sea turtle concentration areas and nesting and basking locations for this data layer: 1) Personal interviews with resource experts from National Marine Fisheries Service (NMFS), Division of Land and Natural Resources (DLNR), and other agencies; and 2) the 1998 NMFS and U.S. Fish and Wildlife Service (USFWS) green sea turtle and hawksbill sea turtle recovery plans. Information gathered during a set of interviews with resource experts was compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles. A second set of interviews was conducted following the data compilation phase, and edits were made based on recommendations by the resource experts. Information on seasonality and hawksbill sea turtle nesting locations gathered from the 1998 sea turtle recovery plans was used in addition to expert knowledge. Descriptive terms, such as "very high" and "high," and numerical concentration values used in the concentration field, were provided by resource experts.

*Process\_Date:* 200111

*Process\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NOAA, Office of Response and Restoration

*Contact\_Person:* Jill Petersen

*Contact\_Address:*

*Address\_Type:* Physical address

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

*City:* Seattle

*State\_or\_Province:* Washington

*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944  
*Contact\_Facsimile\_Telephone:* (206) 526-6329  
*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector  
*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* GT-polygon composed of rings  
*Point\_and\_Vector\_Object\_Count:* 2054

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Area point  
*Point\_and\_Vector\_Object\_Count:* 2054

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Complete chain  
*Point\_and\_Vector\_Object\_Count:* 3598

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Link  
*Point\_and\_Vector\_Object\_Count:* 691114

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Node, planar graph  
*Point\_and\_Vector\_Object\_Count:* 3489

---

*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Geographic:*

*Latitude\_Resolution:* 0.00005  
*Longitude\_Resolution:* 0.00005  
*Geographic\_Coordinate\_Units:* Decimal degrees

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* Old Hawaiian Datum  
*Ellipsoid\_Name:* Clarke 1866  
*Semi-major\_Axis:* 6378206.4  
*Denominator\_of\_Flattening\_Ratio:* 294.9786982

## *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 Hawaii, it is 65), 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, T\_E, 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 spatial data layer REPTILES contains vector polygons representing sea turtle concentration areas and basking and nesting locations. Note that all attribute information is stored in a series of relational files, described below. See the Browse\_Graphic section for a link to the entity-relationship diagram, which describes the relationships between attribute tables in the ESI data structure.

*Entity\_Type\_Definition\_Source:* Research Planning, Inc.

*Attribute:**Attribute\_Label:* ID*Attribute\_Definition:*

An identifier that links vector objects in the biology data layers to records in the BIO\_LUT data table. ID is a concatenation of atlas number (65), 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:* 650600002*Range\_Domain\_Maximum:* 650602043*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:* 65000905*Range\_Domain\_Maximum:* 65000977*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:* 65000001  
*Range\_Domain\_Maximum:* 65000977

*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 (65), 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:* 650100002  
*Range\_Domain\_Maximum:* 653700236

*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:* 650100002  
*Range\_Domain\_Maximum:* 653700236

*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. This field contains counts of sea turtles, as well as non-numerical terms that are used to describe the relative abundance of sea turtles in particular locations. Counts refer to the number of sea turtles present in a particular location. The field may contain counts of individuals (XX) or descriptive terms, such as "VERY HIGH," "HIGH," or "VERY RARE," which were used to describe the relative abundance of sea turtles at a particular location. In cases where no quantitative count or qualitative description was available, the field is blank.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*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 (eg. 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 (eg. 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*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Species common name for the entire ESI data set*Enumerated\_Domain\_Value\_Definition:* Free text*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* GEN\_SPEC*Attribute\_Definition:* Species scientific name*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Species scientific name for the entire ESI data set*Enumerated\_Domain\_Value\_Definition:* Free text*Enumerated\_Domain\_Value\_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:* SUBELEMENT

*Attribute\_Definition:*

Element subgroup delineating a logical grouping of the 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:* algae

*Enumerated\_Domain\_Value\_Definition:* Algae habitat, community, or species

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* alligator

*Enumerated\_Domain\_Value\_Definition:* Alligator or crocodile

*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:* barnacle

*Enumerated\_Domain\_Value\_Definition:* Barnacle

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bat  
*Enumerated\_Domain\_Value\_Definition:* Bat  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bear  
*Enumerated\_Domain\_Value\_Definition:* Bear  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bird  
*Enumerated\_Domain\_Value\_Definition:* Bird  
*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:* canine  
*Enumerated\_Domain\_Value\_Definition:* Canine  
*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:* chordate  
*Enumerated\_Domain\_Value\_Definition:* Chordate  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:**Enumerated\_Domain\_Value:* coral*Enumerated\_Domain\_Value\_Definition:* Coral habitat, community, or species*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:* crayfish*Enumerated\_Domain\_Value\_Definition:* Crayfish*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* diadromous*Enumerated\_Domain\_Value\_Definition:* Diadromous fish*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* diving*Enumerated\_Domain\_Value\_Definition:* Diving bird*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* e\_nursery*Enumerated\_Domain\_Value\_Definition:* Estuarine nursery fish*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* e\_resident*Enumerated\_Domain\_Value\_Definition:* Estuarine resident fish*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:* fav  
*Enumerated\_Domain\_Value\_Definition:* Floating aquatic vegetation  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* feline  
*Enumerated\_Domain\_Value\_Definition:* Feline  
*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:* freshwater  
*Enumerated\_Domain\_Value\_Definition:* Freshwater fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* frog  
*Enumerated\_Domain\_Value\_Definition:* Frog  
*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:* hardbottom  
*Enumerated\_Domain\_Value\_Definition:* Hardbottom habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* landfowl  
*Enumerated\_Domain\_Value\_Definition:* Landfowl  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* lizard  
*Enumerated\_Domain\_Value\_Definition:* Lizard  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* lobster  
*Enumerated\_Domain\_Value\_Definition:* Lobster  
*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:* m\_resident  
*Enumerated\_Domain\_Value\_Definition:* Marine resident fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* passerine  
*Enumerated\_Domain\_Value\_Definition:* Passerine or passerine-like 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:* polar bear  
*Enumerated\_Domain\_Value\_Definition:* Polar bear  
*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:* reef*Enumerated\_Domain\_Value\_Definition:* Reef habitat, community, or species*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* sav*Enumerated\_Domain\_Value\_Definition:* Submersed 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:* shellfish*Enumerated\_Domain\_Value\_Definition:* Shellfish*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:* Shrimp*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:* snake

*Enumerated\_Domain\_Value\_Definition:* Snake

*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:* upland

*Enumerated\_Domain\_Value\_Definition:* Upland habitat, plant community, or plant species

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* wading

*Enumerated\_Domain\_Value\_Definition:* Wading bird

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* waterfowl  
*Enumerated\_Domain\_Value\_Definition:* Waterfowl  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* wetland  
*Enumerated\_Domain\_Value\_Definition:* Wetland habitat, plant community, or plant species  
*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:* 0  
*Enumerated\_Domain\_Value\_Definition:* Not ranked  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric  
*Enumerated\_Domain\_Value\_Definition:* mmyyyy  
*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 (eg. 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 (eg. 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 (eg. 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/mating; if ELEMENT is "REPTILE" then BREED1 = nesting; if ELEMENT is "M\_MAMMAL" then BREED1 = mating. This attribute is not used for T\_MAMMAL or HABITAT elements except when SUBELEMENT is "coral," then BREED1 = spawning.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Y

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* N

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* -

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* BREED2

*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED2 = laying; if ELEMENT is "FISH" then BREED2 = eggs; if ELEMENT is "INVERT" then BREED2 = eggs; if ELEMENT is "REPTILE" then BREED2 = hatching; if ELEMENT is "M\_MAMMAL" then BREED2 = calving. This attribute is not used for T\_MAMMAL or HABITAT elements except when SUBELEMENT is "coral," then BREED2 = juvenile.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:**Enumerated\_Domain\_Value:* Y*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* N*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* -*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* BREED3*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Y*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* N*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value: -*

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* BREED4

*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED4 = fledging; if ELEMENT is "FISH" then BREED4 = juvenile; if ELEMENT is "INVERT" then BREED4 = juvenile; if ELEMENT is "REPTILE" then BREED4 = juvenile; if ELEMENT is "M\_MAMMAL" then BREED4 = molting. This attribute is not used for HABITAT or T\_MAMMAL elements.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Y

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* N

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* -

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* BREED5

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Y

*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* N  
*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* -  
*Enumerated\_Domain\_Value\_Definition:*  
 Breed category not used or not appropriate for record(s) in question  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* SOURCES

*Entity\_Type\_Definition:*

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

*Entity\_Type\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SOURCE\_ID

*Attribute\_Definition:*

Source identifier that links records in the SOURCES data table to the items G\_SOURCE and A\_SOURCE in the SOC\_DAT table, and to G\_SOURCE and S\_SOURCE in the BIORES table.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 1  
*Range\_Domain\_Maximum:* N

*Attribute:*

*Attribute\_Label:* ORIGINATOR

*Attribute\_Definition:* Author or developer of source material or data set

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*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:* Numeric

*Enumerated\_Domain\_Value\_Definition:* mmyyyy

*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:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* DATA\_FORMAT

*Attribute\_Definition:* The format of the source material

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* PUBLICATION

*Attribute\_Definition:* Additional citation information

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SCALE  
*Attribute\_Definition:* Scale denominator of the source  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* integer  
*Enumerated\_Domain\_Value\_Definition:* Any integer  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* TIME\_PERIOD  
*Attribute\_Definition:*  
 Date(s) of data collection that the source material is based upon.  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric  
*Enumerated\_Domain\_Value\_Definition:* yyyy  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* STATUS  
*Entity\_Type\_Definition:*  
 The data table STATUS identifies the species that are listed as either threatened or endangered by a state or federal authority. See the Browse\_Graphic section for a link to the entity-relationship diagram, which describes the way this table relates to other attribute tables in the ESI data structure.  
*Entity\_Type\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* ELEMENT  
*Attribute\_Definition:* Major categories of biological data  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* BIRD  
*Enumerated\_Domain\_Value\_Definition:* Birds  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* FISH

*Enumerated\_Domain\_Value\_Definition:* Fish

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* HABITAT

*Enumerated\_Domain\_Value\_Definition:* Habitats and Plants

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* INVERT

*Enumerated\_Domain\_Value\_Definition:* Invertebrates

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* M\_MAMMAL

*Enumerated\_Domain\_Value\_Definition:* Marine Mammals

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* REPTILE

*Enumerated\_Domain\_Value\_Definition:* Reptiles and Amphibians

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* T\_MAMMAL

*Enumerated\_Domain\_Value\_Definition:* Terrestrial Mammals

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SPECIES\_ID

*Attribute\_Definition:*

Numeric identifier for each species that is unique within each element and refers to a

nationwide master ESI species list maintained at NOAA  
*Attribute\_Definition\_Source*: Research Planning, Inc.  
*Attribute\_Domain\_Values*:

*Range\_Domain*:

*Range\_Domain\_Minimum*: 1  
*Range\_Domain\_Maximum*: N

*Attribute*:

*Attribute\_Label*: STATE  
*Attribute\_Definition*: Two-letter state abbreviation  
*Attribute\_Definition\_Source*: Research Planning, Inc.  
*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: Any character  
*Enumerated\_Domain\_Value\_Definition*: Two-letter state abbreviation  
*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute*:

*Attribute\_Label*: S\_F  
*Attribute\_Definition*: State and Federal status.  
*Attribute\_Definition\_Source*: Research Planning, Inc.  
*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: F  
*Enumerated\_Domain\_Value\_Definition*: Federally listed  
*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: S  
*Enumerated\_Domain\_Value\_Definition*: State listed  
*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: S/F  
*Enumerated\_Domain\_Value\_Definition*: State and federally listed  
*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*Attribute*:

*Attribute\_Label*: T\_E

*Attribute\_Definition:* Threatened and endangered status.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* E

*Enumerated\_Domain\_Value\_Definition:* Endangered on state or federal list

*Enumerated\_Domain\_Value\_Definition\_Source:* U.S. Fish and Wildlife Service

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* T

*Enumerated\_Domain\_Value\_Definition:* Threatened on state or federal list

*Enumerated\_Domain\_Value\_Definition\_Source:* U.S. Fish and Wildlife Service

*Attribute:*

*Attribute\_Label:* DATE\_PUB

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric

*Enumerated\_Domain\_Value\_Definition:* mmyyyy

*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 (eg. 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 Hawaii*Distribution\_Liability:*

Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer input peripherals, or when the physical medium is delivered in damaged condition.

*Custom\_Order\_Process:*

Contact NOAA for distribution options (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI\_Viewer product are also included on the distribution CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

*Metadata\_Reference\_Information:**Metadata\_Date:* 200111*Metadata\_Review\_Date:* 200111*Metadata\_Contact:**Contact\_Information:**Contact\_Person\_Primary:**Contact\_Person:* Jill Petersen*Contact\_Organization:* NOAA, Office of Response and Restoration*Contact\_Position:* GIS Manager*Contact\_Address:*

*Address\_Type*: Physical Address  
*Address*: 7600 Sand Point Way, N.E.  
*City*: Seattle  
*State\_or\_Province*: Washington  
*Postal\_Code*: 98115-6349

*Contact\_Voice\_Telephone*: (206) 526-6944  
*Contact\_Facsimile\_Telephone*: (206) 526-6329  
*Contact\_Electronic\_Mail\_Address*: Jill.Petersen@noaa.gov

*Metadata\_Standard\_Name*: Content Standards for Digital Geospatial Metadata  
*Metadata\_Standard\_Version*: FGDC-STD-001-1998

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# Hawaii ESI: REPTPT (Reptile and Amphibian Points)

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

##### *Originator:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

*Publication\_Date:* 200111

*Title:* Hawaii ESI: REPTPT (Reptile and Amphibian Points)

*Edition:* Second

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

*Series\_Information:*

*Series\_Name:* None

*Issue\_Identification:* Hawaii

##### *Publication\_Information:*

*Publication\_Place:* Seattle, Washington

*Publisher:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

##### *Other\_Citation\_Details:*

Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

### *Description:*

#### *Abstract:*

This data set contains sensitive biological resource data for threatened/endangered sea turtles in coastal Hawaii. Vector points in this data set represent sea turtle nesting sites, and sea turtle occurrences for species that are considered rare in Hawaii. 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 Hawaii. ESI data characterize the marine and coastal environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources. See also the REPTILES data layer, part of the larger Hawaii ESI database, for additional sea turtle information.

*Purpose:*

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

*Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 2000

*Ending\_Date:* 2001

*Currentness\_Reference:*

The biological data were compiled during 2000-2001. The currentness dates for these data range from 1970 to 2001 and are documented in the Source\_Information section.

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* None Scheduled

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -179.278

*East\_Bounding\_Coordinate:* -154.598

*North\_Bounding\_Coordinate:* 29.252

*South\_Bounding\_Coordinate:* 18.713

*Keywords:*

*Theme:*

*Theme\_Keyword\_Thesaurus:* None

*Theme\_Keyword:* ESI

*Theme\_Keyword:* Sensitivity maps

*Theme\_Keyword:* Coastal resources

*Theme\_Keyword:* Oil spill planning

*Theme\_Keyword:* Coastal Zone Management

*Theme\_Keyword:* Wildlife

*Theme\_Keyword:* Reptile

*Place:*

*Place\_Keyword\_Thesaurus:* None

*Place\_Keyword:* Hawaii

*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:*

Relationships between spatial data layers and attribute data tables for the Hawaii ESI data.

*Browse\_Graphic\_File\_Type:* JPEG

*Data\_Set\_Credit:*

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

*Native\_Data\_Set\_Environment:*

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20), and PC's with Windows Operating System (NT4.0/2000). The Spatial\_Data\_Organization\_Information section refers only to the source files in the ARC export format. The following files are included in that data set: bathy.e00, birds.e00, bio\_lut.e00, biofile.e00, biores.e00, breed.e00, breed\_dt.e00, cass\_pt.e00, esi.e00, fish.e00, fishpt.e00, habitats.e00, habpt.e00, hydro.e00, index.e00, invert.e00, invertpt.e00, m\_mammals.e00, m\_mampt.e00, mgt.e00, nests.e00, pools.e00, reptiles.e00, reptpt.e00, seasonal.e00, soc\_dat.e00, soc\_lut.e00, socecon.e00, sources.e00, species.e00, status.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, socecon, sources, species, and status.

*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

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

*Logical\_Consistency\_Report:*

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

*Completeness\_Report:*

These data represent a synthesis of expert knowledge on sea turtle nesting sites, and available digital occurrence data for species rarely sighted in Hawaii. Refer to the REPTILES data layer for additional sea turtle nesting and occurrence data. These data do not represent all sea turtle occurrences in the state of Hawaii. The following species are included in this data set (Species\_ID, Common Name, Scientific Name, if applicable): 2, Green sea turtle, *Chelonia mydas*; 5, Leatherback sea turtle, *Dermochelys coriacea*; 9, Hawksbill sea turtle, *Eretmochelys imbricata*; 47, Olive ridley sea turtle, *Lepidochelys olivacea*.

*Positional\_Accuracy:**Horizontal\_Positional\_Accuracy:**Horizontal\_Positional\_Accuracy\_Report:*

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

*Lineage:**Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:*

National Marine Fisheries Service; U.S. Fish and Wildlife Service

*Publication\_Date:* 1998*Title:*

Recovery Plan for U.S. Pacific Populations of the Green Turtle (*Chelonia mydas*).

*Geospatial\_Data\_Presentation\_Form:* Hardcopy text*Publication\_Information:*

*Publication\_Place:* Silver Spring, MD  
*Publisher:* National Marine Fisheries Service

*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1998

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Reptile Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Dupree, M. (National Marine Fisheries Service, Oahu)  
*Publication\_Date:* Unpublished Material  
*Title:* Sea Turtle and Monk Seal Distribution  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Reptile Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Heacock, D. (Department of Land and Natural Resources, Kauai)  
*Publication\_Date:* Unpublished Material  
*Title:*  
 Coral, Fish, Invertebrate, Bird, Reptile, and Marine Mammal Distribution for  
 Kauai  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Reptile Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* National Marine Fisheries Service (NMFS); U.S. Fish and Wildlife Service

*Publication\_Date:* 1998

*Title:*

Recovery Plan for U.S. Pacific Populations of the Hawksbill Turtle  
 (Eretmochelys imbricata).

*Geospatial\_Data\_Presentation\_Form:* Hardcopy text

*Publication\_Information:*

*Publication\_Place:* Silver Spring, MD

*Publisher:* National Marine Fisheries Service

*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1998

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Reptile Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Hawaii Natural Heritage Program

*Publication\_Date:* 2000

*Title:*

Occurrences of Anchialine Pools, Fish, Invertebrates, Plants, and Sea Turtles

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

*Publication\_Information:*

*Publication\_Place:* Hawaii

*Publisher:* Data contact: Roy Kam, Data Manager, 808/956-3744

*Source\_Scale\_Denominator:* 24000

*Type\_of\_Source\_Media:* Electronic mail

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 1970

*Ending\_Date:* 2000

*Source\_Currentness\_Reference:* Dates of survey

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Reptile Information

*Process\_Step:*

*Process\_Description:*

Two main sources of data were used for this data layer: 1) personal interviews with resource experts from the Division of Land and Natural Resources (DLNR) and other agencies; and 2) Natural Heritage Program (NHP) occurrence data for sea turtle species rarely sighted in Hawaii between 1970-2000. Information on sea turtle nesting locations was gathered during a set of interviews and was compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles. A second set of interviews was conducted following the data compilation phase, and edits were made based on recommendations by the resource experts. Records in the NHP data set were based on sightings of sea turtle species rarely found in Hawaii between 1970-2000.

*Process\_Date:* 200111

*Process\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NOAA, Office of Response and Restoration

*Contact\_Person:* Jill Petersen

*Contact\_Address:*

*Address\_Type:* Physical address

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

*City:* Seattle

*State\_or\_Province:* Washington

*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944  
*Contact\_Facsimile\_Telephone:* (206) 526-6329  
*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector  
*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Entity Point  
*Point\_and\_Vector\_Object\_Count:* 10

---

*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Geographic:*

*Latitude\_Resolution:* 0.00005  
*Longitude\_Resolution:* 0.00005  
*Geographic\_Coordinate\_Units:* Decimal degrees

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* Old Hawaiian Datum  
*Ellipsoid\_Name:* Clarke 1866  
*Semi-major\_Axis:* 6378206.4  
*Denominator\_of\_Flattening\_Ratio:* 294.9786982

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*Entity\_and\_Attribute\_Information:*

*Overview\_Description:*

*Entity\_and\_Attribute\_Overview:*

In addition to the geographic data layers, six relational attribute or data tables, BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS, are used to store the complex biological data in the ESI data structure. The geographic data layer containing biological resource information (in this case, REPTPT) is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO\_LUT, or it can be linked directly using RARNUM. The ID is a unique combination of the atlas number (for Hawaii, it is 65), 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, T\_E, NHP, DATE\_PUB, CONC, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC, BREED1, BREED2, BREED3, BREED4, BREED5, RARNUM, G\_SOURCE, S\_SOURCE, and BREED. All of these items are the same as their counterparts in the individual data tables described below, except the BREED1-BREED5 and BREED items. BREED is a newly generated variable used to link to the BREED\_DT data table, a modified, more compact version of the relational BREED data table. BREED1-BREED5 give a text summary of when each life stage occurs within the associated map object. The life stages referred to are the same as those listed in the Detailed\_Description of the BREED data table. The link to the BIOFILE may be made through the BIO\_LUT, using ID to link to RARNUM, or BIOFILE may be linked directly to the RARNUM in each of the geographic layer's attribute data tables. As mentioned, BREED\_DT is an auxiliary support data table to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED\_DT is the BREED item. A second supporting data table is SOURCES. This is the same as the source file described above, and the link from the flat file is both G\_SOURCE and S\_SOURCE. It should be noted that although the flat file eases data query, it is not a normalized database structure, and actual updates performed by the states and other responsible agencies should be done using the relational data tables. The entity-relationship diagram describing relationships between attribute tables in the ESI data structure does NOT include the BIOFILE data table, and this data table is NOT described in detail below.

#### *Detailed\_Description:*

##### *Entity\_Type:*

*Entity\_Type\_Label:* REPTPT.PAT

*Entity\_Type\_Definition:*

The spatial data layer REPTPT contains vector points representing sea turtle nesting sites and sea turtle occurrences for species that are considered rare in Hawaii. 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 (65), element number (36 [30 because it is a point feature, plus 6, the element value for REPTILES]), and record number.

*Attribute\_Definition\_Source:* NOAA

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 653600001

*Range\_Domain\_Maximum:* 653600010

##### *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:* 65000910

*Range\_Domain\_Maximum:* 65000956

*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.

*Attribute\_Definition\_Source:* NOAA

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 65000001

*Range\_Domain\_Maximum:* 65000977

*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 (65), element number (36 [30 because it is a point feature, plus 6, the element value for REPTILES]), and record number.

*Attribute\_Definition\_Source:* NOAA

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 650100002

*Range\_Domain\_Maximum:* 653700236

*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:* 650100002*Range\_Domain\_Maximum:* 653700236*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 sea turtles at a particular location. No quantitative or qualitative concentration information is available for sea turtle point locations, therefore the field is blank.

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Any character*Enumerated\_Domain\_Value\_Definition:* Free text*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*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 (eg. 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 (eg. 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  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Species common name for the entire ESI data set  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* GEN\_SPEC  
*Attribute\_Definition:* Species scientific name  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Species scientific name for the entire ESI data set  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_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:* SUBELEMENT

*Attribute\_Definition:*

Element subgroup delineating a logical grouping of the 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:* algae  
*Enumerated\_Domain\_Value\_Definition:* Algae habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* alligator  
*Enumerated\_Domain\_Value\_Definition:* Alligator or crocodile  
*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:* barnacle  
*Enumerated\_Domain\_Value\_Definition:* Barnacle  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bat  
*Enumerated\_Domain\_Value\_Definition:* Bat  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bear  
*Enumerated\_Domain\_Value\_Definition:* Bear  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bird  
*Enumerated\_Domain\_Value\_Definition:* Bird  
*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:* canine  
*Enumerated\_Domain\_Value\_Definition:* Canine  
*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:* chordate  
*Enumerated\_Domain\_Value\_Definition:* Chordate  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* coral  
*Enumerated\_Domain\_Value\_Definition:* Coral habitat, community, or species  
*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:* crayfish  
*Enumerated\_Domain\_Value\_Definition:* Crayfish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* diadromous  
*Enumerated\_Domain\_Value\_Definition:* Diadromous fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* diving  
*Enumerated\_Domain\_Value\_Definition:* Diving bird  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* e\_nursery  
*Enumerated\_Domain\_Value\_Definition:* Estuarine nursery fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* e\_resident  
*Enumerated\_Domain\_Value\_Definition:* Estuarine resident fish  
*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:* fav  
*Enumerated\_Domain\_Value\_Definition:* Floating aquatic vegetation  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* feline

*Enumerated\_Domain\_Value\_Definition:* Feline  
*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:* freshwater  
*Enumerated\_Domain\_Value\_Definition:* Freshwater fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* frog  
*Enumerated\_Domain\_Value\_Definition:* Frog  
*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:* hardbottom  
*Enumerated\_Domain\_Value\_Definition:* Hardbottom habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* landfowl  
*Enumerated\_Domain\_Value\_Definition:* Landfowl  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* lizard  
*Enumerated\_Domain\_Value\_Definition:* Lizard  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* lobster  
*Enumerated\_Domain\_Value\_Definition:* Lobster  
*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:* m\_resident  
*Enumerated\_Domain\_Value\_Definition:* Marine resident fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* passerine  
*Enumerated\_Domain\_Value\_Definition:* Passerine or passerine-like 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:* polar bear  
*Enumerated\_Domain\_Value\_Definition:* Polar bear  
*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:* reef  
*Enumerated\_Domain\_Value\_Definition:* Reef habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* sav  
*Enumerated\_Domain\_Value\_Definition:* Submersed 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:* shellfish  
*Enumerated\_Domain\_Value\_Definition:* Shellfish  
*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:* Shrimp  
*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:* snake  
*Enumerated\_Domain\_Value\_Definition:* Snake  
*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:* upland

*Enumerated\_Domain\_Value\_Definition:* Upland habitat, plant community, or plant species

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* wading

*Enumerated\_Domain\_Value\_Definition:* Wading bird

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* waterfowl

*Enumerated\_Domain\_Value\_Definition:* Waterfowl

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* wetland

*Enumerated\_Domain\_Value\_Definition:* Wetland habitat, plant community, or plant species

*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:* 0  
*Enumerated\_Domain\_Value\_Definition:* Not ranked  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric  
*Enumerated\_Domain\_Value\_Definition:* mmyyyy  
*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 (eg. 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 (eg. 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 (eg. 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/mating; if ELEMENT is "REPTILE" then BREED1 = nesting; if ELEMENT is "M\_MAMMAL" then BREED1 = mating. This attribute is not used for T\_MAMMAL or HABITAT elements except when SUBELEMENT is "coral," then BREED1 = spawning.

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value: Y*

*Enumerated\_Domain\_Value\_Definition: Life-history stage or activity present*

*Enumerated\_Domain\_Value\_Definition\_Source: Research Planning, Inc.*

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value: N*

*Enumerated\_Domain\_Value\_Definition: Life-history stage or activity not present*

*Enumerated\_Domain\_Value\_Definition\_Source: Research Planning, Inc.*

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value: -*

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source: Research Planning, Inc.*

*Attribute:*

*Attribute\_Label: BREED2*

*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED2 = laying; if ELEMENT is "FISH" then BREED2 = eggs; if ELEMENT is "INVERT" then BREED2 = eggs; if ELEMENT is "REPTILE" then BREED2 = hatching; if ELEMENT is "M\_MAMMAL" then BREED2 = calving. This attribute is not used for T\_MAMMAL or HABITAT elements except when SUBELEMENT is "coral," then BREED2 = juvenile.

*Attribute\_Definition\_Source: Research Planning, Inc.*

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value: Y*

*Enumerated\_Domain\_Value\_Definition: Life-history stage or activity present*

*Enumerated\_Domain\_Value\_Definition\_Source: Research Planning, Inc.*

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value: N*

*Enumerated\_Domain\_Value\_Definition: Life-history stage or activity not present*

*Enumerated\_Domain\_Value\_Definition\_Source: Research Planning, Inc.*

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value: -*

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source: Research Planning, Inc.*

*Attribute:**Attribute\_Label:* BREED3*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Y*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* N*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* -*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* BREED4*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED4 = fledging; if ELEMENT is "FISH" then BREED4 = juvenile; if ELEMENT is "INVERT" then BREED4 = juvenile; if ELEMENT is "REPTILE" then BREED4 = juvenile; if ELEMENT is "M\_MAMMAL" then BREED4 = molting. This attribute is not used for HABITAT or T\_MAMMAL elements.

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Y*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:*

*Enumerated\_Domain:**Enumerated\_Domain\_Value:* N*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* -*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* BREED5*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Y*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* N*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* -*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Detailed\_Description:**Entity\_Type:*

*Entity\_Type\_Label:* SOURCES

*Entity\_Type\_Definition:*

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

*Entity\_Type\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SOURCE\_ID

*Attribute\_Definition:*

Source identifier that links records in the SOURCES data table to the items G\_SOURCE and A\_SOURCE in the SOC\_DAT table, and to G\_SOURCE and S\_SOURCE in the BIORES table.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 1

*Range\_Domain\_Maximum:* N

*Attribute:*

*Attribute\_Label:* ORIGINATOR

*Attribute\_Definition:* Author or developer of source material or data set

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*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:* Numeric

*Enumerated\_Domain\_Value\_Definition:* mmyyyy

*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:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* DATA\_FORMAT  
*Attribute\_Definition:* The format of the source material  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* PUBLICATION  
*Attribute\_Definition:* Additional citation information  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SCALE  
*Attribute\_Definition:* Scale denominator of the source  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* integer  
*Enumerated\_Domain\_Value\_Definition:* Any integer  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* TIME\_PERIOD  
*Attribute\_Definition:*  
Date(s) of data collection that the source material is based upon.  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric  
*Enumerated\_Domain\_Value\_Definition:* yyyy  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* STATUS

*Entity\_Type\_Definition:*

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

*Entity\_Type\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* ELEMENT

*Attribute\_Definition:* Major categories of biological data

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* BIRD

*Enumerated\_Domain\_Value\_Definition:* Birds

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* FISH

*Enumerated\_Domain\_Value\_Definition:* Fish

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* HABITAT

*Enumerated\_Domain\_Value\_Definition:* Habitats and Plants

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* INVERT

*Enumerated\_Domain\_Value\_Definition:* Invertebrates

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:**Enumerated\_Domain\_Value:* M\_MAMMAL*Enumerated\_Domain\_Value\_Definition:* Marine Mammals*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* REPTILE*Enumerated\_Domain\_Value\_Definition:* Reptiles and Amphibians*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* T\_MAMMAL*Enumerated\_Domain\_Value\_Definition:* Terrestrial Mammals*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* SPECIES\_ID*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Range\_Domain:**Range\_Domain\_Minimum:* 1*Range\_Domain\_Maximum:* N*Attribute:**Attribute\_Label:* STATE*Attribute\_Definition:* Two-letter state abbreviation*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Any character*Enumerated\_Domain\_Value\_Definition:* Two-letter state abbreviation*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* S\_F*Attribute\_Definition:* State and Federal status.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* F

*Enumerated\_Domain\_Value\_Definition:* Federally listed

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* S

*Enumerated\_Domain\_Value\_Definition:* State listed

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* S/F

*Enumerated\_Domain\_Value\_Definition:* State and federally listed

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* T\_E

*Attribute\_Definition:* Threatened and endangered status.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* E

*Enumerated\_Domain\_Value\_Definition:* Endangered on state or federal list

*Enumerated\_Domain\_Value\_Definition\_Source:* U.S. Fish and Wildlife Service

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* T

*Enumerated\_Domain\_Value\_Definition:* Threatened on state or federal list

*Enumerated\_Domain\_Value\_Definition\_Source:* U.S. Fish and Wildlife Service

*Attribute:*

*Attribute\_Label:* DATE\_PUB

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:**Enumerated\_Domain\_Value:* Numeric*Enumerated\_Domain\_Value\_Definition:* mmyyyy*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 (eg. 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 Hawaii*Distribution\_Liability:*

Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of

the product when the product is determined unreadable by computer input peripherals, or when the physical medium is delivered in damaged condition.

*Custom\_Order\_Process:*

Contact NOAA for distribution options (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI\_Viewer product are also included on the distribution CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

---

*Metadata\_Reference\_Information:*

*Metadata\_Date:* 200111

*Metadata\_Review\_Date:* 200111

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* Jill Petersen

*Contact\_Organization:* NOAA, Office of Response and Restoration

*Contact\_Position:* GIS Manager

*Contact\_Address:*

*Address\_Type:* Physical Address

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

*City:* Seattle

*State\_or\_Province:* Washington

*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944

*Contact\_Facsimile\_Telephone:* (206) 526-6329

*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

*Metadata\_Standard\_Name:* Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

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# Hawaii ESI: HABITATS (Habitat and Plant Polygons)

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

##### *Originator:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

*Publication\_Date:* 200111

*Title:* Hawaii ESI: HABITATS (Habitat and Plant Polygons)

*Edition:* Second

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

##### *Series\_Information:*

*Series\_Name:* None

*Issue\_Identification:* Hawaii

##### *Publication\_Information:*

*Publication\_Place:* Seattle, Washington

##### *Publisher:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

##### *Other\_Citation\_Details:*

Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

### *Description:*

#### *Abstract:*

This data set contains sensitive biological resource data for corals, algae, seagrass, and native/rare terrestrial plants in coastal Hawaii. Vector polygons in this data set represent habitat distribution. Species-specific abundance, seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data

layer. This data set comprises a portion of the Environmental Sensitivity Index (ESI) data for Hawaii. 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 HABPT (Habitat and Plant Points) data layer, part of the larger Hawaii ESI database, for additional habitat and plant information.

*Purpose:*

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

*Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 2000

*Ending\_Date:* 2001

*Currentness\_Reference:*

The biological data were compiled during 2000-2001. The currentness dates for these data range from 1977 to 2001 and are documented in the Source\_Information section.

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* None Scheduled

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -179.278

*East\_Bounding\_Coordinate:* -154.598

*North\_Bounding\_Coordinate:* 29.252

*South\_Bounding\_Coordinate:* 18.713

*Keywords:*

*Theme:*

*Theme\_Keyword\_Thesaurus:* None

*Theme\_Keyword:* ESI

*Theme\_Keyword:* Sensitivity maps

*Theme\_Keyword:* Coastal resources

*Theme\_Keyword:* Oil spill planning

*Theme\_Keyword:* Coastal Zone Management

*Theme\_Keyword:* Wildlife

*Theme\_Keyword:* Habitats

*Place:*

*Place\_Keyword\_Thesaurus:* None

*Place\_Keyword:* Hawaii

*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:*

Relationships between spatial data layers and attribute data tables for the Hawaii ESI data.

*Browse\_Graphic\_File\_Type:* JPEG

*Data\_Set\_Credit:*

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

*Native\_Data\_Set\_Environment:*

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20), and PC's with Windows Operating System (NT4.0/2000). The *Spatial\_Data\_Organization\_Information* section refers only to the source files in the ARC export format. The following files are included in that data set: bathy.e00, birds.e00, bio\_lut.e00, biofile.e00, biores.e00, breed.e00, breed\_dt.e00, cass\_pt.e00, esi.e00, fish.e00, fishpt.e00, habitats.e00, habpt.e00, hydro.e00, index.e00, invert.e00, invertpt.e00, m\_mammals.e00, m\_mampt.e00, mgt.e00, nests.e00, pools.e00, reptiles.e00, reptpt.e00, seasonal.e00, soc\_dat.e00, soc\_lut.e00, socecon.e00, sources.e00, species.e00, status.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, socecon, sources, species, and status.

*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

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

*Logical\_Consistency\_Report:*

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

*Completeness\_Report:*

These data represent a synthesis of expert knowledge and available hardcopy reports on coral, algae, seagrass, and native/rare terrestrial plant species distribution. Refer to the HABPT (Habitat and Plant Points) data layer for additional native/rare terrestrial plant location information. These data do not represent total coral, algae, seagrass, and terrestrial plant distribution in the state of Hawaii. The following species are included in this data set (Species\_ID, Common Name [if different from Scientific Name], Scientific Name [if applicable]): 85, Seagrass; 518, Black coral, *Antipathes* spp.; 534, *Tetramolopium rockii calcisabulorum*; 535, *Tetramolopium rockii rockii*; 556, *Chamaesyce skottsbergii* skottsbergii; 563, *Sesbania tomentosa*; 586, *Solanum nelsonii*; 591, *Mariscus p. pennatifolius*; 601, Wire coral, *Cirripathes anguina*; 602, *Pseudognaphalium s. molokaiense*; 603, *Sinularia molokaiensis* (soft coral), *Sinularia molokaiensis*; 604, *Pritchardia remota*; 605, *Schiedea verticillata*; 606, *Amaranthus brownii*; 1028, Algae; 1039, High live coral cover; 1040, Massive coral colonies; 1041, Rare coral; 1042, Reef pinnacle; 1043, Soft coral; 1044, Structural coral reef; 1045, Rare algae; 1046, Red algae; 1048, Submerged barrier reef; 1049, Coralline algal apron reef; 1050, High coral diversity; 1052, Coral reef habitat; 1053, Native coastal strand vegetation; 1054, Algal reef; 1055, Octocoral bed.

*Positional\_Accuracy:**Horizontal\_Positional\_Accuracy:**Horizontal\_Positional\_Accuracy\_Report:*

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

*Lineage:**Source\_Information:**Source\_Citation:**Citation\_Information:*

*Originator:* Gulko, D. (Department of Land and Natural Resources, Oahu)

*Publication\_Date:* Unpublished Material

*Title:*

Coral, Fish, Invertebrate, Sea Turtle, and Marine Mammal Concentration Areas;  
Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Habitat Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Maragos, J. (U.S. Fish and Wildlife Service, Oahu)

*Publication\_Date:* Unpublished Material

*Title:*

Coral Reef Distribution; Marine Mammal and Invertebrate Concentration Areas;  
Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Habitat Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Coles, S. (Bishop Museum)  
*Publication\_Date:* Unpublished Material  
*Title:* Coral and Invertebrate Concentration Areas for Oahu  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Habitat Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Smith, C. (University of Hawaii, Oahu)  
*Publication\_Date:* Unpublished Material  
*Title:* Algae and Sea Turtle Distribution  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Habitat Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Oishi, F. (Department of Land and Natural Resources, Oahu)  
*Publication\_Date:* Unpublished Material  
*Title:*

Fish, Invertebrate, Benthic Habitats, Reptile Distribution and Seasonality;  
 Socioeconomic locations  
*Geospatial\_Data\_Presentation\_Form*: Expert knowledge

*Type\_of\_Source\_Media*: Personal communication  
*Source\_Time\_Period\_of\_Content*:

*Time\_Period\_Information*:

*Single\_Date/Time*:

*Calendar\_Date*: 2000

*Source\_Currentness\_Reference*: Date of communication

*Source\_Citation\_Abbreviation*: None  
*Source\_Contribution*: Habitat Information

*Source\_Information*:

*Source\_Citation*:

*Citation\_Information*:

*Originator*: AECOS, Inc.

*Publication\_Date*: 1981

*Title*:

Oahu Coastal Zone Atlas, Representing the Hawaii Coral Reef Inventory, Island  
 of Oahu (OCRI), Part C.

*Geospatial\_Data\_Presentation\_Form*: Hardcopy maps

*Publication\_Information*:

*Publication\_Place*: Fort Shafter, HI

*Publisher*: Prep. for the U.S. Army Corps of Engineers, Pacific Ocean Div.

*Source\_Scale\_Denominator*: unknown

*Type\_of\_Source\_Media*: Paper

*Source\_Time\_Period\_of\_Content*:

*Time\_Period\_Information*:

*Single\_Date/Time*:

*Calendar\_Date*: 1981

*Source\_Currentness\_Reference*: Date of publication

*Source\_Citation\_Abbreviation*: None  
*Source\_Contribution*: Habitat Information

*Source\_Information*:

*Source\_Citation*:

*Citation\_Information:**Originator:* Clark, J.R.K.*Publication\_Date:* 1977*Title:* The Beaches of Oahu.*Geospatial\_Data\_Presentation\_Form:* Hardcopy text*Publication\_Information:**Publication\_Place:* Honolulu, HI*Publisher:* The University of Hawaii Press*Type\_of\_Source\_Media:* Paper*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 1977*Source\_Currentness\_Reference:* Date of publication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Habitat Information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Swenson, C. (U.S. Fish and Wildlife Service, Oahu)*Publication\_Date:* Unpublished Material*Title:*Plant, Bird, Marine Mammal, Sea Turtle, Fish, and Invertebrate Concentration  
Areas*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Habitat Information*Source\_Information:*

*Source\_Citation:**Citation\_Information:*

*Originator:* AECOS, Inc.  
*Publication\_Date:* 1979  
*Title:* Oahu Coral Reef Inventory, Part B.  
*Geospatial\_Data\_Presentation\_Form:* Hardcopy text  
*Publication\_Information:*

*Publication\_Place:* Honolulu, HI  
*Publisher:* Prep. for U.S. Army Corps of Engineers, Honolulu Dist.

*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1979

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Habitat Information

*Source\_Information:**Source\_Citation:**Citation\_Information:*

*Originator:* NOAA  
*Publication\_Date:* 1999  
*Title:* NOAA Nautical Chart 19357  
*Geospatial\_Data\_Presentation\_Form:* Hardcopy maps  
*Publication\_Information:*

*Publication\_Place:* Washington, D.C.  
*Publisher:* U.S. Dept. of Commerce, NOAA, NOS, Coast Survey

*Source\_Scale\_Denominator:* 80000  
*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1999

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Habitat Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:*

Nishimoto, R. (Department of Land and Natural Resources, Hilo, Hawaii)

*Publication\_Date:* Unpublished Material

*Title:*

Fish, Invertebrate, Coral, Reptile, Bird Distribution; Fish/Invertebrate  
 Seasonality; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Habitat Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Heacock, D. (Department of Land and Natural Resources, Kauai)

*Publication\_Date:* Unpublished Material

*Title:*

Coral, Fish, Invertebrate, Bird, Reptile, and Marine Mammal Distribution for  
 Kauai

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Habitat Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Manoa Mapworks; AECOS, Inc.  
*Publication\_Date:* 1983  
*Title:*  
 Kauai Coastal Resource Atlas; Kauai Island Coastal Resource Inventory (KICRI).  
*Geospatial\_Data\_Presentation\_Form:* Hardcopy text/maps  
*Publication\_Information:*  
  
*Publication\_Place:* Fort Shafter, HI  
*Publisher:*  
 Prep. for the U.S. Army Corps of Engineers, Pacific Ocean Div., Fort Shafter, HI, 279 pp.; Prep. for U.S. Army Corps of Engineers, Pacific Ocean Div.

*Source\_Scale\_Denominator:* 6000  
*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Multiple\_Dates/Times:*

*Single\_Date/Time:*

*Calendar\_Date:* 1982

*Single\_Date/Time:*

*Calendar\_Date:* 1983

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Habitat Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Parrish, F. (National Marine Fisheries Service, Oahu)  
*Publication\_Date:* Unpublished Material  
*Title:*  
 Invertebrate, Marine Mammal, Reptile, and Precious Coral Distribution for

Oahu/Northwestern Hawaiian Islands  
*Geospatial\_Data\_Presentation\_Form*: Expert knowledge

*Type\_of\_Source\_Media*: Personal communication  
*Source\_Time\_Period\_of\_Content*:

*Time\_Period\_Information*:

*Single\_Date/Time*:

*Calendar\_Date*: 2000

*Source\_Currentness\_Reference*: Date of communication

*Source\_Citation\_Abbreviation*: None  
*Source\_Contribution*: Habitat Information

*Source\_Information*:

*Source\_Citation*:

*Citation\_Information*:

*Originator*: Misaki, E. (The Nature Conservancy, Molokai Chapter)  
*Publication\_Date*: Unpublished Material  
*Title*:  
 Biological Resource Distribution and Concentration Areas for Molokai  
*Geospatial\_Data\_Presentation\_Form*: Expert knowledge

*Type\_of\_Source\_Media*: Personal communication  
*Source\_Time\_Period\_of\_Content*:

*Time\_Period\_Information*:

*Single\_Date/Time*:

*Calendar\_Date*: 2000

*Source\_Currentness\_Reference*: Date of communication

*Source\_Citation\_Abbreviation*: None  
*Source\_Contribution*: Habitat Information

*Source\_Information*:

*Source\_Citation*:

*Citation\_Information*:

*Originator*: Potts, R. (National Park Service, Molokai)  
*Publication\_Date*: Unpublished Material  
*Title*:  
 Biological Resource Distribution and Concentration Areas for Kalaupapa

National Heritage Program  
*Geospatial\_Data\_Presentation\_Form*: Expert knowledge

*Type\_of\_Source\_Media*: Personal communication  
*Source\_Time\_Period\_of\_Content*:

*Time\_Period\_Information*:

*Single\_Date/Time*:

*Calendar\_Date*: 2000

*Source\_Currentness\_Reference*: Date of communication

*Source\_Citation\_Abbreviation*: None  
*Source\_Contribution*: Habitat Information

*Source\_Information*:

*Source\_Citation*:

*Citation\_Information*:

*Originator*: AECOS, Inc.

*Publication\_Date*: 1981

*Title*:

Hawaii Coral Reef Inventory, Island of Maui (Maui Island Coral Reef Inventory), Part B.

*Geospatial\_Data\_Presentation\_Form*: Hardcopy maps

*Publication\_Information*:

*Publication\_Place*: Honolulu, HI

*Publisher*: U.S. Army Corps of Engineers, Honolulu Dist.

*Source\_Scale\_Denominator*: unknown

*Type\_of\_Source\_Media*: Paper

*Source\_Time\_Period\_of\_Content*:

*Time\_Period\_Information*:

*Single\_Date/Time*:

*Calendar\_Date*: 1981

*Source\_Currentness\_Reference*: Date of publication

*Source\_Citation\_Abbreviation*: None  
*Source\_Contribution*: Habitat Information

*Source\_Information*:

*Source\_Citation*:

*Citation\_Information*:

*Originator:* AECOS, Inc.

*Publication\_Date:* 1981

*Title:*

Maui Coastal Zone Atlas, Representing the Hawaii Coral Reef Inventory, Island of Maui (Maui Island Coral Reef Inventory), Part C.

*Geospatial\_Data\_Presentation\_Form:* Hardcopy text

*Publication\_Information:*

*Publication\_Place:* Fort Shafter, HI

*Publisher:* Prep. for the U.S. Army Corps of Engineers, Pacific Ocean Div.

*Type\_of\_Source\_Media:* Paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1981

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Habitat Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Brown, E. (University of Hawaii, Maui)

*Publication\_Date:* Unpublished Material

*Title:*

Coral, Algae, Reptile, Marine Mammal, Invertebrate, and Fish Distribution for Maui; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Habitat Information

*Source\_Information:*

*Source\_Citation:**Citation\_Information:**Originator:* Jokiel, P., E.F Cox, and M.P. Crosby*Publication\_Date:* 1995*Title:*

An Evaluation of the Nearshore Coral Resources of Kahoolawe, Hawaii

*Geospatial\_Data\_Presentation\_Form:* Digital report*Publication\_Information:**Publication\_Place:* Hawaii*Publisher:*

[http://cramp.wcc.hawaii.edu/Study\\_Sites/Kahoolawe/  
An\\_Evaluation\\_of\\_the\\_Nearshore\\_Coral\\_Reef\\_Resources\\_of\\_Kahoolawe/  
default.asp](http://cramp.wcc.hawaii.edu/Study_Sites/Kahoolawe/An_Evaluation_of_the_Nearshore_Coral_Reef_Resources_of_Kahoolawe/default.asp)

*Type\_of\_Source\_Media:* On-line*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 1995*Source\_Currentness\_Reference:* Date of publication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Habitat Information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:*

Carman, B. (Department of Land and Natural Resources, Kona, Hawaii)

*Publication\_Date:* Unpublished Material*Title:*

Distribution of Aquatic Resources for the Big Island; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Habitat Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Nolan, R.S. and D.P. Cheney  
*Publication\_Date:* 1981  
*Title:* West Hawaii Coral Reef Inventory.  
*Geospatial\_Data\_Presentation\_Form:* Document  
*Publication\_Information:*

*Publication\_Place:* Honolulu, HI  
*Publisher:* Prep. for U.S. Army Corps of Engineers, Honolulu Dist.

*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1981

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Habitat Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:*  
 Walsh, W. (Department of Land and Natural Resources, Kona, Hawaii)  
*Publication\_Date:* Unpublished Material  
*Title:*  
 Coral, Fish, Invertebrate, Reptile, and Marine Mammal Distribution for Big  
 Island; Socioeconomic locations  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Habitat Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:*

Hendricks, P. (Department of Land and Natural Resources, retired)

*Publication\_Date:* Unpublished Material

*Title:* Distribution of Aquatic Resources for the Big Island

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Habitat Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* National Marine Fisheries Service

*Publication\_Date:* 2000

*Title:*

Fisheries Management Plan for Precious Corals: Sect. 5.0 Existing Management Measures

*Geospatial\_Data\_Presentation\_Form:* Document

*Publication\_Information:*

*Publication\_Place:* Hawaii

*Publisher:* Unknown

*Type\_of\_Source\_Media:* Paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Habitat Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Hawaii Natural Heritage Program

*Publication\_Date:* 2000

*Title:*

Occurrences of Anchialine Pools, Fish, Invertebrates, Plants, and Sea Turtles

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

*Publication\_Information:*

*Publication\_Place:* Hawaii

*Publisher:* Data contact: Roy Kam, Data Manager, 808/956-3744

*Source\_Scale\_Denominator:* 24000

*Type\_of\_Source\_Media:* Electronic mail

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 1970

*Ending\_Date:* 2000

*Source\_Currentness\_Reference:* Dates of survey

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Habitat Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Foster, K. (U.S. Fish and Wildlife Service, Oahu)

*Publication\_Date:* Unpublished Material

*Title:*

Bird Distribution and Seasonality; Seagrass Concentrations; Surfing

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2001

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Habitat Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Smith, S. (U.S. Navy, Pearl Harbor)

*Publication\_Date:* Unpublished Material

*Title:* Coral Distribution in Pearl Harbor Entrance Channel

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2001

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Habitat Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Bail, L. (Bubbles Below, Inc.)

*Publication\_Date:* Unpublished Material

*Title:*

Distribution of Aquatic Resources Around Kauai and Niihau; Dive Sites

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2001

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Habitat Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Lau, T. (The Nature Conservancy of Hawaii, Molokai Program)

*Publication\_Date:* Unpublished Material

*Title:* Distribution of Rare/Endangered Terrestrial Plants for Molokai

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2001

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Habitat Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:*

Jokiel, P. (University of Hawaii) and D. Gulko (Department of Land and Natural Resources)

*Publication\_Date:* Unpublished Material

*Title:* Rare Coral Concentration Areas for Molokai

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2001

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Habitat Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Jokiel, P. (University of Hawaii, Oahu)

*Publication\_Date:* Unpublished Material

*Title:* Coral Reef Distribution

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2001

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Habitat Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* McDermid, K. (University of Hawaii, Hilo, Hawaii)

*Publication\_Date:* Unpublished Material

*Title:* Seagrass Concentration Areas

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2001

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Habitat Information

*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Brainard, R. and Holzworth (National Marine Fisheries Service)*Publication\_Date:* Unpublished Material*Title:*

Estimates of Major Reef Bottom Types Around the Northwestern Hawaiian Islands Based on Tow-board Surveys

*Geospatial\_Data\_Presentation\_Form:* Diagram*Type\_of\_Source\_Media:* Paper*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of survey*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Habitat Information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Siciliano, D. (University of California, Santa Cruz)*Publication\_Date:* Unpublished Material*Title:*

Northwestern Hawaiian Islands Coral Reef and Invertebrate Distribution

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2001*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Habitat Information*Process\_Step:*

*Process\_Description:*

Two main sources of data were used to depict habitat distribution for this data layer: 1) personal interviews with resource experts from the Division of Land and Natural Resources (DLNR), U.S. Fish and Wildlife Service, University of Hawaii, National Marine Fisheries Service (NMFS), and other agencies; and 2) the 1979-1984 Hawaii Coral Reef Inventory (HICRI) atlases prepared for the Army Corps of Engineers by various private companies. Information on corals, algae, seagrass, and terrestrial plants was gathered during a set of interviews and was compiled onto U.S. Geological Survey (USGS) 1:24,000 topographic quadrangles. In the HICRI atlases, areas of high live coral coverage were mapped using a polygonal hatched pattern, and were also described in detail in the written text. The distribution of algae was also discussed in the text. Information gathered from the atlases was interpreted and compiled onto the USGS topographic quads along with the information gathered during the interviews. Following a second set of interviews, edits were made to the compiled data based on recommendations by the resource experts. Other publications were also used to supplement the information on corals and algae that was provided by the resource experts and in the atlases.

*Process\_Date:* 200111

*Process\_Contact:*

*Contact\_Information:**Contact\_Organization\_Primary:*

*Contact\_Organization:* NOAA, Office of Response and Restoration

*Contact\_Person:* Jill Petersen

*Contact\_Address:*

*Address\_Type:* Physical address

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

*City:* Seattle

*State\_or\_Province:* Washington

*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944

*Contact\_Facsimile\_Telephone:* (206) 526-6329

*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* GT-polygon composed of rings

*Point\_and\_Vector\_Object\_Count:* 2745

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Area point

*Point\_and\_Vector\_Object\_Count:* 2745

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Complete chain  
*Point\_and\_Vector\_Object\_Count:* 5494

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Link  
*Point\_and\_Vector\_Object\_Count:* 1034035

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Node, planar graph  
*Point\_and\_Vector\_Object\_Count:* 4875

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*Spatial\_Reference\_Information:**Horizontal\_Coordinate\_System\_Definition:**Geographic:*

*Latitude\_Resolution:* 0.00005  
*Longitude\_Resolution:* 0.00005  
*Geographic\_Coordinate\_Units:* Decimal degrees

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* Old Hawaiian Datum  
*Ellipsoid\_Name:* Clarke 1866  
*Semi-major\_Axis:* 6378206.4  
*Denominator\_of\_Flattening\_Ratio:* 294.9786982

---

*Entity\_and\_Attribute\_Information:**Overview\_Description:**Entity\_and\_Attribute\_Overview:*

In addition to the geographic data layers, six relational attribute or data tables, BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS, are used to store the complex biological data in the ESI data structure. The geographic data layer containing biological resource information (in this case, HABITATS) is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO\_LUT, or it can be linked directly using RARNUM. The ID is a unique combination of the atlas number (for Hawaii, it is 65), 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, T\_E, 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 spatial data layer HABITATS contains vector polygons representing corals, algae, seagrass, and native/rare terrestrial 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 (65), 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:* 650300002

*Range\_Domain\_Maximum:* 650302749

##### *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:* 65000295

*Range\_Domain\_Maximum:* 65000618

*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:* 65000001

*Range\_Domain\_Maximum:* 65000977

*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 (65), 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:* 650100002

*Range\_Domain\_Maximum:* 653700236

*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:* 650100002*Range\_Domain\_Maximum:* 653700236*Attribute:**Attribute\_Label:* SPECIES\_ID*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Range\_Domain:**Range\_Domain\_Minimum:* 1*Range\_Domain\_Maximum:* N*Attribute:**Attribute\_Label:* CONC*Attribute\_Definition:*

The field CONC refers to "concentration," abundance, or density value of a habitat at a particular location. The descriptive terms "VERY HIGH," "HIGH," "ABUNDANT," and "MODERATE" were used to describe the relative abundance of corals, algae, seagrass, or terrestrial plants at specific locations. In cases where no qualitative description was available, the field is blank.

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*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 (eg. 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 (eg. 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  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Species common name for the entire ESI data set  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* GEN\_SPEC  
*Attribute\_Definition:* Species scientific name  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Species scientific name for the entire ESI data set  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_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:* SUBELEMENT

*Attribute\_Definition:*

Element subgroup delineating a logical grouping of the 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:* algae  
*Enumerated\_Domain\_Value\_Definition:* Algae habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* alligator  
*Enumerated\_Domain\_Value\_Definition:* Alligator or crocodile  
*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:* barnacle  
*Enumerated\_Domain\_Value\_Definition:* Barnacle  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bat  
*Enumerated\_Domain\_Value\_Definition:* Bat  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bear  
*Enumerated\_Domain\_Value\_Definition:* Bear  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bird  
*Enumerated\_Domain\_Value\_Definition:* Bird  
*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:* canine  
*Enumerated\_Domain\_Value\_Definition:* Canine  
*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:* chordate  
*Enumerated\_Domain\_Value\_Definition:* Chordate  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* coral  
*Enumerated\_Domain\_Value\_Definition:* Coral habitat, community, or species  
*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:* crayfish  
*Enumerated\_Domain\_Value\_Definition:* Crayfish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* diadromous  
*Enumerated\_Domain\_Value\_Definition:* Diadromous fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* diving  
*Enumerated\_Domain\_Value\_Definition:* Diving bird  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* e\_nursery  
*Enumerated\_Domain\_Value\_Definition:* Estuarine nursery fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* e\_resident  
*Enumerated\_Domain\_Value\_Definition:* Estuarine resident fish  
*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:* fav  
*Enumerated\_Domain\_Value\_Definition:* Floating aquatic vegetation  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* feline

*Enumerated\_Domain\_Value\_Definition:* Feline  
*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:* freshwater  
*Enumerated\_Domain\_Value\_Definition:* Freshwater fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* frog  
*Enumerated\_Domain\_Value\_Definition:* Frog  
*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:* hardbottom  
*Enumerated\_Domain\_Value\_Definition:* Hardbottom habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* landfowl  
*Enumerated\_Domain\_Value\_Definition:* Landfowl  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* lizard  
*Enumerated\_Domain\_Value\_Definition:* Lizard  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* lobster  
*Enumerated\_Domain\_Value\_Definition:* Lobster  
*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:* m\_resident  
*Enumerated\_Domain\_Value\_Definition:* Marine resident fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* passerine  
*Enumerated\_Domain\_Value\_Definition:* Passerine or passerine-like 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:* polar bear  
*Enumerated\_Domain\_Value\_Definition:* Polar bear  
*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:* reef  
*Enumerated\_Domain\_Value\_Definition:* Reef habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* sav  
*Enumerated\_Domain\_Value\_Definition:* Submersed 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:* shellfish

*Enumerated\_Domain\_Value\_Definition:* Shellfish

*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:* Shrimp

*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:* snake

*Enumerated\_Domain\_Value\_Definition:* Snake

*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:* upland

*Enumerated\_Domain\_Value\_Definition:* Upland habitat, plant community, or plant species

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* wading

*Enumerated\_Domain\_Value\_Definition:* Wading bird

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* waterfowl

*Enumerated\_Domain\_Value\_Definition:* Waterfowl

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* wetland

*Enumerated\_Domain\_Value\_Definition:* Wetland habitat, plant community, or plant species

*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:* 0  
*Enumerated\_Domain\_Value\_Definition:* Not ranked  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric  
*Enumerated\_Domain\_Value\_Definition:* mmyyyy  
*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 (eg. 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 (eg. 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 (eg. 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/mating; if ELEMENT is "REPTILE" then BREED1 = nesting; if ELEMENT is "M\_MAMMAL" then BREED1 = mating. This attribute is not used for T\_MAMMAL or HABITAT elements except when SUBELEMENT is "coral," then BREED1 = spawning.

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value: Y*

*Enumerated\_Domain\_Value\_Definition: Life-history stage or activity present*

*Enumerated\_Domain\_Value\_Definition\_Source: Research Planning, Inc.*

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value: N*

*Enumerated\_Domain\_Value\_Definition: Life-history stage or activity not present*

*Enumerated\_Domain\_Value\_Definition\_Source: Research Planning, Inc.*

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value: -*

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source: Research Planning, Inc.*

*Attribute:*

*Attribute\_Label: BREED2*

*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED2 = laying; if ELEMENT is "FISH" then BREED2 = eggs; if ELEMENT is "INVERT" then BREED2 = eggs; if ELEMENT is "REPTILE" then BREED2 = hatching; if ELEMENT is "M\_MAMMAL" then BREED2 = calving. This attribute is not used for T\_MAMMAL or HABITAT elements except when SUBELEMENT is "coral," then BREED2 = juvenile.

*Attribute\_Definition\_Source: Research Planning, Inc.*

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value: Y*

*Enumerated\_Domain\_Value\_Definition: Life-history stage or activity present*

*Enumerated\_Domain\_Value\_Definition\_Source: Research Planning, Inc.*

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value: N*

*Enumerated\_Domain\_Value\_Definition: Life-history stage or activity not present*

*Enumerated\_Domain\_Value\_Definition\_Source: Research Planning, Inc.*

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value: -*

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source: Research Planning, Inc.*

*Attribute:**Attribute\_Label:* BREED3*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Y*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* N*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* -*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* BREED4*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED4 = fledging; if ELEMENT is "FISH" then BREED4 = juvenile; if ELEMENT is "INVERT" then BREED4 = juvenile; if ELEMENT is "REPTILE" then BREED4 = juvenile; if ELEMENT is "M\_MAMMAL" then BREED4 = molting. This attribute is not used for HABITAT or T\_MAMMAL elements.

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Y*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:*

*Enumerated\_Domain:**Enumerated\_Domain\_Value:* N*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* -*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* BREED5*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Y*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* N*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* -*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Detailed\_Description:**Entity\_Type:*

*Entity\_Type\_Label:* SOURCES

*Entity\_Type\_Definition:*

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

*Entity\_Type\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SOURCE\_ID

*Attribute\_Definition:*

Source identifier that links records in the SOURCES data table to the items G\_SOURCE and A\_SOURCE in the SOC\_DAT table, and to G\_SOURCE and S\_SOURCE in the BIORES table.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 1

*Range\_Domain\_Maximum:* N

*Attribute:*

*Attribute\_Label:* ORIGINATOR

*Attribute\_Definition:* Author or developer of source material or data set

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*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:* Numeric

*Enumerated\_Domain\_Value\_Definition:* mmyyyy

*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:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* DATA\_FORMAT  
*Attribute\_Definition:* The format of the source material  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* PUBLICATION  
*Attribute\_Definition:* Additional citation information  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SCALE  
*Attribute\_Definition:* Scale denominator of the source  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* integer  
*Enumerated\_Domain\_Value\_Definition:* Any integer  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* TIME\_PERIOD  
*Attribute\_Definition:*  
Date(s) of data collection that the source material is based upon.  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric  
*Enumerated\_Domain\_Value\_Definition:* yyyy  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* STATUS

*Entity\_Type\_Definition:*

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

*Entity\_Type\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* ELEMENT

*Attribute\_Definition:* Major categories of biological data

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* BIRD

*Enumerated\_Domain\_Value\_Definition:* Birds

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* FISH

*Enumerated\_Domain\_Value\_Definition:* Fish

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* HABITAT

*Enumerated\_Domain\_Value\_Definition:* Habitats and Plants

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* INVERT

*Enumerated\_Domain\_Value\_Definition:* Invertebrates

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:**Enumerated\_Domain\_Value:* M\_MAMMAL*Enumerated\_Domain\_Value\_Definition:* Marine Mammals*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* REPTILE*Enumerated\_Domain\_Value\_Definition:* Reptiles and Amphibians*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* T\_MAMMAL*Enumerated\_Domain\_Value\_Definition:* Terrestrial Mammals*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* SPECIES\_ID*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Range\_Domain:**Range\_Domain\_Minimum:* 1*Range\_Domain\_Maximum:* N*Attribute:**Attribute\_Label:* STATE*Attribute\_Definition:* Two-letter state abbreviation*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Any character*Enumerated\_Domain\_Value\_Definition:* Two-letter state abbreviation*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* S\_F*Attribute\_Definition:* State and Federal status.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* F

*Enumerated\_Domain\_Value\_Definition:* Federally listed

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* S

*Enumerated\_Domain\_Value\_Definition:* State listed

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* S/F

*Enumerated\_Domain\_Value\_Definition:* State and federally listed

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* T\_E

*Attribute\_Definition:* Threatened and endangered status.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* E

*Enumerated\_Domain\_Value\_Definition:* Endangered on state or federal list

*Enumerated\_Domain\_Value\_Definition\_Source:* U.S. Fish and Wildlife Service

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* T

*Enumerated\_Domain\_Value\_Definition:* Threatened on state or federal list

*Enumerated\_Domain\_Value\_Definition\_Source:* U.S. Fish and Wildlife Service

*Attribute:*

*Attribute\_Label:* DATE\_PUB

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:**Enumerated\_Domain\_Value:* Numeric*Enumerated\_Domain\_Value\_Definition:* mmyyyy*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 (eg. 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 Hawaii*Distribution\_Liability:*

Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of

the product when the product is determined unreadable by computer input peripherals, or when the physical medium is delivered in damaged condition.

*Custom\_Order\_Process:*

Contact NOAA for distribution options (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI\_Viewer product are also included on the distribution CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

---

*Metadata\_Reference\_Information:*

*Metadata\_Date:* 200111

*Metadata\_Review\_Date:* 200111

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* Jill Petersen

*Contact\_Organization:* NOAA, Office of Response and Restoration

*Contact\_Position:* GIS Manager

*Contact\_Address:*

*Address\_Type:* Physical Address

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

*City:* Seattle

*State\_or\_Province:* Washington

*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944

*Contact\_Facsimile\_Telephone:* (206) 526-6329

*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

*Metadata\_Standard\_Name:* Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

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# Hawaii ESI: HABPT (Habitat and Plant Points)

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

##### *Originator:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

*Publication\_Date:* 200111

*Title:* Hawaii ESI: HABPT (Habitat and Plant Points)

*Edition:* Second

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

##### *Series\_Information:*

*Series\_Name:* None

*Issue\_Identification:* Hawaii

##### *Publication\_Information:*

*Publication\_Place:* Seattle, Washington

##### *Publisher:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

##### *Other\_Citation\_Details:*

Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

### *Description:*

#### *Abstract:*

This data set contains sensitive biological resource data for rare/native terrestrial plants in coastal Hawaii. Vector points in this data set represent rare/native plant species occurrences. 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 Hawaii. ESI data characterize the marine and coastal environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources. See also the HABITATS data layer, part of the larger Hawaii ESI database, for additional habitat and plant information.

*Purpose:*

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

*Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 2000

*Ending\_Date:* 2001

*Currentness\_Reference:*

The biological data were compiled during 2000-2001. The currentness dates for these data range from 1970 to 2001 and are documented in the Source\_Information section.

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* None Scheduled

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -179.278

*East\_Bounding\_Coordinate:* -154.598

*North\_Bounding\_Coordinate:* 29.252

*South\_Bounding\_Coordinate:* 18.713

*Keywords:*

*Theme:*

*Theme\_Keyword\_Thesaurus:* None

*Theme\_Keyword:* ESI

*Theme\_Keyword:* Sensitivity maps

*Theme\_Keyword:* Coastal resources

*Theme\_Keyword:* Oil spill planning

*Theme\_Keyword:* Coastal Zone Management

*Theme\_Keyword:* Wildlife

*Theme\_Keyword:* Habitats

*Place:*

*Place\_Keyword\_Thesaurus:* None

*Place\_Keyword:* Hawaii

*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:*

Relationships between spatial data layers and attribute data tables for the Hawaii ESI data.

*Browse\_Graphic\_File\_Type:* JPEG

*Data\_Set\_Credit:*

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

*Native\_Data\_Set\_Environment:*

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20), and PC's with Windows Operating System (NT4.0/2000). The Spatial\_Data\_Organization\_Information section refers only to the source files in the ARC export format. The following files are included in that data set: bathy.e00, birds.e00, bio\_lut.e00, biofile.e00, biores.e00, breed.e00, breed\_dt.e00, cass\_pt.e00, esi.e00, fish.e00, fishpt.e00, habitats.e00, habpt.e00, hydro.e00, index.e00, invert.e00, invertpt.e00, m\_mammals.e00, m\_mampt.e00, mgt.e00, nests.e00, pools.e00, reptiles.e00, reptpt.e00, seasonal.e00, soc\_dat.e00, soc\_lut.e00, socecon.e00, sources.e00, species.e00, status.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, socecon, sources, species, and status.

*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

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

*Logical\_Consistency\_Report:*

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

#### *Completeness\_Report:*

These data represent digital native/rare terrestrial plant species locations. Refer to the HABITATS data layer for additional information on the occurrence of native/rare terrestrial plant species. These data do not represent all native/terrestrial plant species occurrences in the state of Hawaii. The following species are included in this data set (Species\_ID, Scientific Name): 521, *Achyranthes splendens rotundata*; 522, *Charpentiera densiflora*; 523, *Nototrichium humile*; 524, *Peucedanum sandwicense*; 525, *Ochrosia haleakalae*; 526, *Ochrosia kauaiensis*; 527, *Pteralyxia kauaiensis*; 528, *Munroidendron racemosum*; 529, *Bidens molokaiensis*; 530, *Gnaphalium sandwicense molokaiense*; 531, *Lipochaeta lobata lobata*; 532, *Lipochaeta tenuifolia*; 533, *Tetramolopium sylvae*; 535, *Tetramolopium rockii rockii*; 536, *Wilkesia hobdyi*; 537, *Lepidium arbuscula*; 538, *Lepidium bidentatum o-waihiense*; 539, *Lepidium serra*; 540, *Brighamia insignis*; 541, *Brighamia rockii*; 542, *Lobelia niihauensis*; 543, *Schiedea apokremnos*; 544, *Schiedea globosa*; 545, *Schiedea kealiae*; 546, *Schiedea ligustrina*; 547, *Schiedea lydgatei*; 548, *Schiedea stellarioides*; 549, *Schiedea menziesii*; 550, *Bonamia menziesii*; 551, *Capparis sandwichiana*; 552, *Chamaesyce celastroides kaenana*; 553, *Chamaesyce celastroides stokesii*; 554, *Chamaesyce celastroides laehiensis*; 555, *Chamaesyce celastroides tomentella*; 556, *Chamaesyce skottsbergii skottsbergii*; 557, *Chamaesyce skottsbergii vaccinioides*; 558, *Chamaesyce kuwaleana*; 559, *Acacia koaia*; 560, *Canavalia molokaiensis*; 561, *Canavalia napaliensis*; 562, *Canavalia pubescens*; 563, *Sesbania tomentosa*; 564, *Vigna o-wahuensis*; 565, *Kanaloa kahoolawensis*; 566, *Centaurium sebaeoides*; 567, *Scaevola coriacea*; 568, *Labordia helleri*; 569, *Abutilon menziesii*; 570, *Hibiscus arnottianus immaculatus*; 571, *Hibiscus brackenridgei brackenridgei*; 572, *Hibiscus kokio kokio*; 573, *Hibiscus kokio saintjohnianus*; 574, *Hibiscus waimeae hanneriae*; 575, *Pittosporum napaliense*; 576, *Portulaca sclerocarpa*; 577, *Portulaca villosa*; 578, *Portulaca molokiniensis*; 579, *Bobea sandwicensis*; 580, *Gardenia brighamii*; 581, *Hedyotis elatior*; 582, *Hedyotis fluviatilis*; 583, *Hedyotis littoralis*; 584, *Hedyotis st.-johnii*; 585, *Nothocestrum breviflorum*; 586, *Solanum nelsonii*; 587, *Alectryon macrococcus macrococcus*; 588, *Pritchardia affinis*; 589, *Pritchardia lowreyana*; 590, *Cyperus trachysanthos*; 591, *Mariscus p. pennatiformis*; 592, *Fimbristylis hawaiiensis*; 593, *Ischaemum byrhone*; 594, *Panicum beecheyi*; 595, *Panicum fauriei carteri*; 596, *Panicum niihauense*; 597, *Panicum lineale*; 598, *Marsilea villosa*; 599, *Ophioglossum concinnum*.

#### *Positional\_Accuracy:*

##### *Horizontal\_Positional\_Accuracy:*

##### *Horizontal\_Positional\_Accuracy\_Report:*

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

*Lineage:**Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Hawaii Natural Heritage Program*Publication\_Date:* 2000*Title:*

Occurrences of Anchialine Pools, Fish, Invertebrates, Plants, and Sea Turtles

*Geospatial\_Data\_Presentation\_Form:* Vector digital data*Publication\_Information:**Publication\_Place:* Hawaii*Publisher:* Data contact: Roy Kam, Data Manager, 808/956-3744*Source\_Scale\_Denominator:* 24000*Type\_of\_Source\_Media:* Electronic mail*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Range\_of\_Dates/Times:**Beginning\_Date:* 1970*Ending\_Date:* 2000*Source\_Currentness\_Reference:* Dates of survey*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Habitat information*Process\_Step:**Process\_Description:*

Natural Heritage Program (NHP) occurrence data was the primary source used to depict plants for this data layer. All NHP occurrences that were recorded between 1970-2000 of native/rare terrestrial plants within 0.25 miles on and offshore were included.

*Process\_Date:* 200111*Process\_Contact:**Contact\_Information:**Contact\_Organization\_Primary:**Contact\_Organization:* NOAA, Office of Response and Restoration*Contact\_Person:* Jill Petersen*Contact\_Address:**Address\_Type:* Physical address

*Address:* 7600 Sand Point Way, N.E.  
*City:* Seattle  
*State\_or\_Province:* Washington  
*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944  
*Contact\_Facsimile\_Telephone:* (206) 526-6329  
*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector  
*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Entity Point  
*Point\_and\_Vector\_Object\_Count:* 273

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Geographic:*

*Latitude\_Resolution:* 0.00005  
*Longitude\_Resolution:* 0.00005  
*Geographic\_Coordinate\_Units:* Decimal degrees

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* Old Hawaiian Datum  
*Ellipsoid\_Name:* Clarke 1866  
*Semi-major\_Axis:* 6378206.4  
*Denominator\_of\_Flattening\_Ratio:* 294.9786982

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*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, HABPT) 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 Hawaii, it is 65), 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, T\_E, 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:* HABPT.PAT

*Entity\_Type\_Definition:*

The spatial data layer HABPT contains vector points representing native/rare terrestrial plant species in Hawaii. 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 (65), element number (33 [30 because it is a point feature, plus 3, the element value for HABITATS]), and record number.

*Attribute\_Definition\_Source:* NOAA

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 653300001

*Range\_Domain\_Maximum:* 653300273

*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:* 65000333*Range\_Domain\_Maximum:* 65000438*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.

*Attribute\_Definition\_Source:* NOAA*Attribute\_Domain\_Values:**Range\_Domain:**Range\_Domain\_Minimum:* 65000001*Range\_Domain\_Maximum:* 65000977*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 (65), element number (33 [30 because it is a point feature, plus 3, the element value for HABITATS]), and record number.

*Attribute\_Definition\_Source:* NOAA*Attribute\_Domain\_Values:**Range\_Domain:**Range\_Domain\_Minimum:* 650100002*Range\_Domain\_Maximum:* 653700236

*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:* 650100002*Range\_Domain\_Maximum:* 653700236*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 terrestrial plants at a particular location. No quantitative or qualitative concentration information is available for plant point locations, therefore the field is blank.

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*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 (eg. 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 (eg. 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  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Species common name for the entire ESI data set  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* GEN\_SPEC  
*Attribute\_Definition:* Species scientific name  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Species scientific name for the entire ESI data set  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_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:* SUBELEMENT

*Attribute\_Definition:*

Element subgroup delineating a logical grouping of the 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:* algae  
*Enumerated\_Domain\_Value\_Definition:* Algae habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* alligator  
*Enumerated\_Domain\_Value\_Definition:* Alligator or crocodile  
*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:* barnacle  
*Enumerated\_Domain\_Value\_Definition:* Barnacle  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bat  
*Enumerated\_Domain\_Value\_Definition:* Bat  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bear  
*Enumerated\_Domain\_Value\_Definition:* Bear  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* bird  
*Enumerated\_Domain\_Value\_Definition:* Bird  
*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:* canine*Enumerated\_Domain\_Value\_Definition:* Canine*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:* chordate*Enumerated\_Domain\_Value\_Definition:* Chordate*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* coral*Enumerated\_Domain\_Value\_Definition:* Coral habitat, community, or species*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:* crayfish*Enumerated\_Domain\_Value\_Definition:* Crayfish*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* diadromous  
*Enumerated\_Domain\_Value\_Definition:* Diadromous fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* diving  
*Enumerated\_Domain\_Value\_Definition:* Diving bird  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* e\_nursery  
*Enumerated\_Domain\_Value\_Definition:* Estuarine nursery fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* e\_resident  
*Enumerated\_Domain\_Value\_Definition:* Estuarine resident fish  
*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:* fav  
*Enumerated\_Domain\_Value\_Definition:* Floating aquatic vegetation  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* feline

*Enumerated\_Domain\_Value\_Definition:* Feline  
*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:* freshwater  
*Enumerated\_Domain\_Value\_Definition:* Freshwater fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* frog  
*Enumerated\_Domain\_Value\_Definition:* Frog  
*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:* hardbottom  
*Enumerated\_Domain\_Value\_Definition:* Hardbottom habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* landfowl  
*Enumerated\_Domain\_Value\_Definition:* Landfowl  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* lizard  
*Enumerated\_Domain\_Value\_Definition:* Lizard  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* lobster  
*Enumerated\_Domain\_Value\_Definition:* Lobster  
*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:* m\_resident  
*Enumerated\_Domain\_Value\_Definition:* Marine resident fish  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* passerine  
*Enumerated\_Domain\_Value\_Definition:* Passerine or passerine-like 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:* polar bear  
*Enumerated\_Domain\_Value\_Definition:* Polar bear  
*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:* reef  
*Enumerated\_Domain\_Value\_Definition:* Reef habitat, community, or species  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* sav  
*Enumerated\_Domain\_Value\_Definition:* Submersed 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:* shellfish

*Enumerated\_Domain\_Value\_Definition:* Shellfish

*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:* Shrimp

*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:* snake

*Enumerated\_Domain\_Value\_Definition:* Snake

*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:* upland

*Enumerated\_Domain\_Value\_Definition:* Upland habitat, plant community, or plant species

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* wading

*Enumerated\_Domain\_Value\_Definition:* Wading bird

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* waterfowl

*Enumerated\_Domain\_Value\_Definition:* Waterfowl

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* wetland

*Enumerated\_Domain\_Value\_Definition:* Wetland habitat, plant community, or plant species

*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:* 0  
*Enumerated\_Domain\_Value\_Definition:* Not ranked  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric  
*Enumerated\_Domain\_Value\_Definition:* mmyyyy  
*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 (eg. 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 (eg. 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 (eg. 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/mating; if ELEMENT is "REPTILE" then BREED1 = nesting; if ELEMENT is "M\_MAMMAL" then BREED1 = mating. This attribute is not used for T\_MAMMAL or HABITAT elements except when SUBELEMENT is "coral," then BREED1 = spawning.

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:*

*Enumerated\_Domain\_Value: Y*

*Enumerated\_Domain\_Value\_Definition: Life-history stage or activity present*

*Enumerated\_Domain\_Value\_Definition\_Source: Research Planning, Inc.*

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value: N*

*Enumerated\_Domain\_Value\_Definition: Life-history stage or activity not present*

*Enumerated\_Domain\_Value\_Definition\_Source: Research Planning, Inc.*

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value: -*

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source: Research Planning, Inc.*

*Attribute:*

*Attribute\_Label: BREED2*

*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED2 = laying; if ELEMENT is "FISH" then BREED2 = eggs; if ELEMENT is "INVERT" then BREED2 = eggs; if ELEMENT is "REPTILE" then BREED2 = hatching; if ELEMENT is "M\_MAMMAL" then BREED2 = calving. This attribute is not used for T\_MAMMAL or HABITAT elements except when SUBELEMENT is "coral," then BREED2 = juvenile.

*Attribute\_Definition\_Source: Research Planning, Inc.*

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value: Y*

*Enumerated\_Domain\_Value\_Definition: Life-history stage or activity present*

*Enumerated\_Domain\_Value\_Definition\_Source: Research Planning, Inc.*

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value: N*

*Enumerated\_Domain\_Value\_Definition: Life-history stage or activity not present*

*Enumerated\_Domain\_Value\_Definition\_Source: Research Planning, Inc.*

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value: -*

*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source: Research Planning, Inc.*

*Attribute:**Attribute\_Label:* BREED3*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Y*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* N*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* -*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* BREED4*Attribute\_Definition:*

Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED4 = fledging; if ELEMENT is "FISH" then BREED4 = juvenile; if ELEMENT is "INVERT" then BREED4 = juvenile; if ELEMENT is "REPTILE" then BREED4 = juvenile; if ELEMENT is "M\_MAMMAL" then BREED4 = molting. This attribute is not used for HABITAT or T\_MAMMAL elements.

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Y*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:*

*Enumerated\_Domain:**Enumerated\_Domain\_Value:* N*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* -*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* BREED5*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Y*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* N*Enumerated\_Domain\_Value\_Definition:* Life-history stage or activity not present*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* -*Enumerated\_Domain\_Value\_Definition:*

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

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Detailed\_Description:**Entity\_Type:*

*Entity\_Type\_Label:* SOURCES

*Entity\_Type\_Definition:*

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

*Entity\_Type\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SOURCE\_ID

*Attribute\_Definition:*

Source identifier that links records in the SOURCES data table to the items G\_SOURCE and A\_SOURCE in the SOC\_DAT table, and to G\_SOURCE and S\_SOURCE in the BIORES table.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 1

*Range\_Domain\_Maximum:* N

*Attribute:*

*Attribute\_Label:* ORIGINATOR

*Attribute\_Definition:* Author or developer of source material or data set

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*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:* Numeric

*Enumerated\_Domain\_Value\_Definition:* mmyyyy

*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:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* DATA\_FORMAT  
*Attribute\_Definition:* The format of the source material  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* PUBLICATION  
*Attribute\_Definition:* Additional citation information  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SCALE  
*Attribute\_Definition:* Scale denominator of the source  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* integer  
*Enumerated\_Domain\_Value\_Definition:* Any integer  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* TIME\_PERIOD  
*Attribute\_Definition:*  
 Date(s) of data collection that the source material is based upon.  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric  
*Enumerated\_Domain\_Value\_Definition:* yyyy  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* STATUS

*Entity\_Type\_Definition:*

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

*Entity\_Type\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* ELEMENT

*Attribute\_Definition:* Major categories of biological data

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* BIRD

*Enumerated\_Domain\_Value\_Definition:* Birds

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* FISH

*Enumerated\_Domain\_Value\_Definition:* Fish

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* HABITAT

*Enumerated\_Domain\_Value\_Definition:* Habitats and Plants

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* INVERT

*Enumerated\_Domain\_Value\_Definition:* Invertebrates

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:**Enumerated\_Domain\_Value:* M\_MAMMAL*Enumerated\_Domain\_Value\_Definition:* Marine Mammals*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* REPTILE*Enumerated\_Domain\_Value\_Definition:* Reptiles and Amphibians*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* T\_MAMMAL*Enumerated\_Domain\_Value\_Definition:* Terrestrial Mammals*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* SPECIES\_ID*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Range\_Domain:**Range\_Domain\_Minimum:* 1*Range\_Domain\_Maximum:* N*Attribute:**Attribute\_Label:* STATE*Attribute\_Definition:* Two-letter state abbreviation*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Any character*Enumerated\_Domain\_Value\_Definition:* Two-letter state abbreviation*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* S\_F*Attribute\_Definition:* State and Federal status.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* F

*Enumerated\_Domain\_Value\_Definition:* Federally listed

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* S

*Enumerated\_Domain\_Value\_Definition:* State listed

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* S/F

*Enumerated\_Domain\_Value\_Definition:* State and federally listed

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* T\_E

*Attribute\_Definition:* Threatened and endangered status.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* E

*Enumerated\_Domain\_Value\_Definition:* Endangered on state or federal list

*Enumerated\_Domain\_Value\_Definition\_Source:* U.S. Fish and Wildlife Service

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* T

*Enumerated\_Domain\_Value\_Definition:* Threatened on state or federal list

*Enumerated\_Domain\_Value\_Definition\_Source:* U.S. Fish and Wildlife Service

*Attribute:*

*Attribute\_Label:* DATE\_PUB

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:**Enumerated\_Domain\_Value:* Numeric*Enumerated\_Domain\_Value\_Definition:* mmyyyy*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 (eg. 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 Hawaii*Distribution\_Liability:*

Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of

the product when the product is determined unreadable by computer input peripherals, or when the physical medium is delivered in damaged condition.

*Custom\_Order\_Process:*

Contact NOAA for distribution options (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI\_Viewer product are also included on the distribution CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

---

*Metadata\_Reference\_Information:*

*Metadata\_Date:* 200111

*Metadata\_Review\_Date:* 200111

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* Jill Petersen

*Contact\_Organization:* NOAA, Office of Response and Restoration

*Contact\_Position:* GIS Manager

*Contact\_Address:*

*Address\_Type:* Physical Address

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

*City:* Seattle

*State\_or\_Province:* Washington

*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944

*Contact\_Facsimile\_Telephone:* (206) 526-6329

*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

*Metadata\_Standard\_Name:* Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

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# Hawaii ESI: MGT (Management Area Polygons)

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

##### *Originator:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

*Publication\_Date:* 200111

*Title:* Hawaii ESI: MGT (Management Area Polygons)

*Edition:* Second

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

##### *Series\_Information:*

*Series\_Name:* None

*Issue\_Identification:* Hawaii

##### *Publication\_Information:*

*Publication\_Place:* Seattle, Washington

##### *Publisher:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

##### *Other\_Citation\_Details:*

Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

### *Description:*

#### *Abstract:*

This data set contains management area data for artificial reefs, designated critical habitats, national parks, marine sanctuaries, special management areas, state/regional parks, and wildlife refuges in Hawaii. Vector polygons in this data set represent management areas. Location-specific type and source information is stored in relational data tables (described below) designed to be

used in conjunction with this spatial data layer. This data set comprises a portion of the Environmental Sensitivity Index (ESI) data for Hawaii. 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) data layer, part of the larger Hawaii ESI database, for additional human-use information.

*Purpose:*

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

*Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 2000

*Ending\_Date:* 2001

*Currentness\_Reference:*

These data were compiled during 2000-2001. The currentness dates for these data range from 1995 to 2001 and are documented in the Source\_Information section.

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* None Scheduled

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -179.278

*East\_Bounding\_Coordinate:* -154.598

*North\_Bounding\_Coordinate:* 29.252

*South\_Bounding\_Coordinate:* 18.713

*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

*Place:*

*Place\_Keyword\_Thesaurus:* None

*Place\_Keyword:* Hawaii

*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:*

Relationships between spatial data layers and attribute data tables for the Hawaii ESI data.

*Browse\_Graphic\_File\_Type:* JPEG

*Data\_Set\_Credit:*

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

*Native\_Data\_Set\_Environment:*

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20), and PC's with Windows Operating System (NT4.0/2000). The Spatial\_Data\_Organization\_Information section refers only to the source files in the ARC export format. The following files are included in that data set: bathy.e00, birds.e00, bio\_lut.e00, biofile.e00, biores.e00, breed.e00, breed\_dt.e00, cass\_pt.e00, esi.e00, fish.e00, fishpt.e00, habitats.e00, habpt.e00, hydro.e00, index.e00, invert.e00, invertpt.e00, m\_mammals.e00, m\_mampt.e00, mgt.e00, nests.e00, pools.e00, reptiles.e00, reptpt.e00, seasonal.e00, soc\_dat.e00, soc\_lut.e00, socecon.e00, sources.e00, species.e00, status.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, socecon, sources, species, and status.

*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

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

*Logical\_Consistency\_Report:*

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

*Completeness\_Report:*

These data represent a synthesis of hardcopy maps for artificial reefs, designated critical habitats, and state parks, and digital boundaries for national parks, marine sanctuaries, special management areas, state/regional parks, and wildlife refuges. These data do not represent all management areas in the state of Hawaii. Refer to the SOCECON (Socioeconomic Resource Points) data layer for additional human-use information.

*Positional\_Accuracy:**Horizontal\_Positional\_Accuracy:**Horizontal\_Positional\_Accuracy\_Report:*

The MGT data set was developed from pre-existing digital and hardcopy sources and largely reflects the positional accuracy of these original data. It is difficult to estimate the positional accuracy of such data, except to state that they are compiled on basemaps with a scale 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:* DeLorme

*Publication\_Date:* 1999

*Title:* Hawaii Atlas and Gazetteer

*Geospatial\_Data\_Presentation\_Form:* Hardcopy text

*Publication\_Information:*

*Publication\_Place:* Yarmouth, ME

*Publisher:* DeLorme

*Source\_Scale\_Denominator:* 84000

*Type\_of\_Source\_Media:* Paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1999

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Management Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Souza, W. (Department of Land and Natural Resources, Kauai)  
*Publication\_Date:* Unpublished Material  
*Title:*  
 Boundaries of State Parks; Endangered Waterbird Concentrations for Kauai  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Management Area Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Parrish, F. (National Marine Fisheries Service, Oahu)  
*Publication\_Date:* Unpublished Material  
*Title:*  
 Invertebrate, Marine Mammal, Reptile, and Precious Coral Distribution for  
 Oahu/Northwestern Hawaiian Islands  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Management Area Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Duvall, F. (Department of Land and Natural Resources, Maui)

*Publication\_Date:* Unpublished Material

*Title:*

Seabird, Endangered Bird, and Invertebrate Distribution and Seasonality for  
Maui; Management Areas

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Management Area Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Ohta, P. (Department of Land and Natural Resources, Maui)

*Publication\_Date:* Unpublished Material

*Title:*

State Park boundaries and recreational use for Maui; Monk Seal Distribution

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Management Area Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Hawaiian Islands Humpback Whale National Marine Sanctuary

*Publication\_Date:* 1999

*Title:*

The Geographic Boundaries of the Hawaiian Islands Humpback Whale National Marine Sanctuary and Humpback Whale Distribution

*Geospatial\_Data\_Presentation\_Form:* Digital arcs

*Publication\_Information:*

*Publication\_Place:* Hawaii

*Publisher:*

Data contact: Naomi McIntosh, Acting Sanctuary Manager, 808/397-2651

*Type\_of\_Source\_Media:* CD-ROM

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1999

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Management Area Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Hawaii Statewide GIS Program

*Publication\_Date:* 1999

*Title:*

Fisheries and Special Management Areas, Parks, Reserves, Fishponds, Marinas, Beaches

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

*Publication\_Information:*

*Publication\_Place:* Hawaii

*Publisher:*

<http://www.hawaii.gov/dbedt/gis/>; Contact: Kristian Kerr, Department of Land and Natural Resources (DLNR), 808-586-1940

*Source\_Scale\_Denominator:* varies  
*Type\_of\_Source\_Media:* Disc  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 1994  
*Ending\_Date:* 1999

*Source\_Currentness\_Reference:* Date of compilation

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Management Area Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:*

Department of Land and Natural Resources (DLNR), Division of Aquatic  
 Resources (DAR)

*Publication\_Date:* 1999

*Title:* Hawaii Fishing Regulations, September 1999

*Geospatial\_Data\_Presentation\_Form:* Document

*Publication\_Information:*

*Publication\_Place:* Honolulu, HI

*Publisher:* Department of Land and Natural Resources

*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1999

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Management Area Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* U.S. Navy, Pearl Harbor  
*Publication\_Date:* Unpublished Material  
*Title:* Distribution of Human-Use Resources for Naval Properties  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2001

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Management Area Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* U.S. Fish and Wildlife Service  
*Publication\_Date:* 1995  
*Title:* Kealia Pond National Wildlife Refuge, Maui, Hawaii  
*Geospatial\_Data\_Presentation\_Form:* Map  
*Publication\_Information:*

*Publication\_Place:* Hawaii

*Publisher:*

U.S. Fish and Wildlife Service Brochure for National Wildlife Refuge  
12527

*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1995

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Management Area Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* U.S. Geological Survey  
*Publication\_Date:* Various Dates  
*Title:* Topographic Quadrangles  
*Geospatial\_Data\_Presentation\_Form:* Map  
*Publication\_Information:*

*Publication\_Place:* Denver, CO or Reston, VA  
*Publisher:* U.S. Geological Survey

*Source\_Scale\_Denominator:* 24000  
*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* Varies

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Management Area Information

*Source\_Information:**Source\_Citation:**Citation\_Information:*

*Originator:* U.S. Fish and Wildlife Service  
*Publication\_Date:* 1996  
*Title:*  
 The Geographic Boundary of the Midway Atoll National Wildlife Refuge  
*Geospatial\_Data\_Presentation\_Form:* Map  
*Publication\_Information:*

*Publication\_Place:* Hawaii  
*Publisher:* Executive Order 13022

*Source\_Scale\_Denominator:* unknown  
*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:* Management Area Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* National Marine Fisheries Service

*Publication\_Date:* 1995

*Title:*

Designated Critical Habitat for Threatened and Endangered Species

*Geospatial\_Data\_Presentation\_Form:* Document

*Publication\_Information:*

*Publication\_Place:* Unknown

*Publisher:* 50 CFR 17.94-17.96, 226.11

*Type\_of\_Source\_Media:* Paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1995

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Management Area Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* U.S. Fish and Wildlife Service

*Publication\_Date:* 2001

*Title:*

The Geographic Boundaries for Hawaiian Islands Coral Reef Ecosystem Reserve  
and Northwestern Hawaiian Islands National Wildlife Refuges

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

*Publication\_Information:*

*Publication\_Place:* Hawaii

*Publisher:*

Data contact: Doug Vandegraft, U.S. Fish and Wildlife Service,  
Doug\_Vandegraft@fws.gov

*Source\_Scale\_Denominator:* unknown

*Type\_of\_Source\_Media:* Electronic mail

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2001*Source\_Currentness\_Reference:* Date of compilation*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Management Area Information*Process\_Step:**Process\_Description:*

Two main sources of data were used to depict management areas for this data layer: 1) various hardcopy documents, including NOAA nautical charts, U.S. Geological Survey (USGS) topographic quadrangles, and the National Marine Fisheries Service (NMFS) Designated Critical Habitat maps for Hawaiian monk seals; and 2) HI Statewide GIS Program data sets for national parks, marine sanctuaries, special management areas, state/regional parks, and wildlife refuges. Geographic boundaries for management areas were extracted from the following HI Statewide GIS Program digital data sets (corresponding socioeconomic types used in this data layer are shown in parentheses): 1994 Fisheries Management Areas (Special Management Area); 1998 Parks (National Park, Regional/State Park); 1998 Reserves (Special Management Area, Wildlife Refuge, National Park, Regional/State Park), and 1998 Special Management Areas (Special Management Area). Digital boundaries for artificial reefs, parks, and wildlife refuges that were not available in the HI Statewide GIS Program data layers were digitized directly off of NOAA nautical charts and USGS topographic quadrangles. The NOAA Hawaiian Islands Humpback Whale National Marine Sanctuary provided the 1999 digital boundary used in this data layer (socioeconomic type: Marine Sanctuary). NMFS Designated Critical Habitat maps were used as a guide for delineating Hawaiian monk seal critical habitat (socioeconomic type: Designated Critical Habitat) in the Northwestern Hawaiian Islands. Resource experts confirmed the accuracy of these management boundaries during on-site reviews. Additional information was gathered from hardcopy sources and compiled onto the USGS topographic quads, along with information gathered during interviews with resource experts. These data were then digitized and merged with the existing digital data layers. Following the data compilation phase, a second set of interviews was conducted with resource experts, and edits were made based on their recommendations.

*Process\_Date:* 200111*Process\_Contact:**Contact\_Information:**Contact\_Organization\_Primary:**Contact\_Organization:* NOAA, Office of Response and Restoration*Contact\_Person:* Jill Petersen*Contact\_Address:**Address\_Type:* Physical address

*Address:* 7600 Sand Point Way, N.E.  
*City:* Seattle  
*State\_or\_Province:* Washington  
*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944  
*Contact\_Facsimile\_Telephone:* (206) 526-6329  
*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* GT-polygon composed of rings  
*Point\_and\_Vector\_Object\_Count:* 398

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Area point  
*Point\_and\_Vector\_Object\_Count:* 398

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Complete chain  
*Point\_and\_Vector\_Object\_Count:* 824

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Link  
*Point\_and\_Vector\_Object\_Count:* 111999

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Node, planar graph  
*Point\_and\_Vector\_Object\_Count:* 625

---

*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Geographic:*

*Latitude\_Resolution:* 0.00005  
*Longitude\_Resolution:* 0.00005  
*Geographic\_Coordinate\_Units:* Decimal degrees

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* Old Hawaiian Datum  
*Ellipsoid\_Name:* Clarke 1866  
*Semi-major\_Axis:* 6378206.4  
*Denominator\_of\_Flattening\_Ratio:* 294.9786982

---

## *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 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 Hawaii this is 65). ID is a unique combination of the atlas number (65), an element specific number (MGT = 11) and a unique record number. SOC\_DAT and the other relational data tables are described below in detail. See the Browse\_Graphic section for a link to the entity-relationship diagram, which describes the way these tables relate to the geographic data layers and other attribute tables in the ESI data structure.

### *Detailed\_Description:*

#### *Entity\_Type:*

*Entity\_Type\_Label:* MGT.PAT

#### *Entity\_Type\_Definition:*

The spatial data layer MGT contains vector polygons representing artificial reefs, designated critical habitats, national parks, marine sanctuaries, special management areas, state/regional parks, and wildlife refuges. Note that all attribute information is stored in a series of relational files, described below. See the Browse\_Graphic section for a link to the entity-relationship diagram, which describes the relationships between attribute tables in the ESI data structure.

*Entity\_Type\_Definition\_Source:* Research Planning, Inc.

#### *Attribute:*

*Attribute\_Label:* TYPE

#### *Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

#### *Attribute\_Domain\_Values:*

#### *Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* AR

*Enumerated\_Domain\_Value\_Definition:* ARTIFICIAL REEF

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

#### *Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* CH  
*Enumerated\_Domain\_Value\_Definition:* DESIGNATED CRITICAL HABITAT  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* MA  
*Enumerated\_Domain\_Value\_Definition:* MANAGEMENT AREA  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* MS  
*Enumerated\_Domain\_Value\_Definition:* MARINE SANCTUARY  
*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 (65), 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:* 651100002  
*Range\_Domain\_Maximum:* 651100575

*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*: 65000007

*Range\_Domain\_Maximum*: 65000356

*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*: 65000007

*Range\_Domain\_Maximum*: 65000356

*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 (65), 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*: 651100002

*Range\_Domain\_Maximum*: 651100575

*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 the SOC\_DAT table directly to vector objects in the human-use data layers.

*Attribute\_Definition\_Source:* NOAA

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 65000007

*Range\_Domain\_Maximum:* 65000356

*Attribute:*

*Attribute\_Label:* TYPE

*Attribute\_Definition:* Identifies the feature type

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* ARTIFICIAL REEF

*Enumerated\_Domain\_Value\_Definition:* ARTIFICIAL REEF

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* CRITICAL HABITAT

*Enumerated\_Domain\_Value\_Definition:* DESIGNATED CRITICAL HABITAT

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* MANAGEMENT AREA

*Enumerated\_Domain\_Value\_Definition:* MANAGEMENT AREA

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* MARINE SANCTUARY

*Enumerated\_Domain\_Value\_Definition:* MARINE SANCTUARY

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* NATIONAL PARK  
*Enumerated\_Domain\_Value\_Definition:* NATIONAL PARK  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* PARK  
*Enumerated\_Domain\_Value\_Definition:* REGIONAL OR STATE PARK  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* AIRPORT  
*Enumerated\_Domain\_Value\_Definition:* AIRPORT  
*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:* BOATRAMP  
*Enumerated\_Domain\_Value\_Definition:* BOATRAMP  
*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:* DIVING  
*Enumerated\_Domain\_Value\_Definition:* DIVING  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* HISTORICAL SITE  
*Enumerated\_Domain\_Value\_Definition:* HISTORICAL SITE  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* MARINA  
*Enumerated\_Domain\_Value\_Definition:* MARINA  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* RECREATIONAL FISHING  
*Enumerated\_Domain\_Value\_Definition:* RECREATIONAL FISHING  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* SUBSISTENCE  
*Enumerated\_Domain\_Value\_Definition:* SUBSISTENCE FISHING  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* SURFING  
*Enumerated\_Domain\_Value\_Definition:* SURFING  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* WATER INTAKE  
*Enumerated\_Domain\_Value\_Definition:* WATER INTAKE  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc

*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:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* CONTACT  
*Attribute\_Definition:* Contact person or entity  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* PHONE  
*Attribute\_Definition:* Contact telephone number  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* G\_SOURCE  
*Attribute\_Definition:*  
 Geographic source integer 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 integer identifier that links records in the SOC\_DAT data table to records in the SOURCES data table.  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 1  
*Range\_Domain\_Maximum:* N

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* SOURCES  
*Entity\_Type\_Definition:*  
 The data table SOURCES contains the primary sources used to create the ESI data set. See the Browse\_Graphic section for a link to the entity-relationship diagram, which describes the way this

table relates to other attribute tables in the ESI data structure.  
*Entity\_Type\_Definition\_Source*: Research Planning, Inc.

*Attribute:*

*Attribute\_Label*: SOURCE\_ID

*Attribute\_Definition*:

Source identifier that links records in the SOURCES data table to the items G\_SOURCE and A\_SOURCE in the SOC\_DAT table, and to G\_SOURCE and S\_SOURCE in the BIORES table.

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Range\_Domain*:

*Range\_Domain\_Minimum*: 1

*Range\_Domain\_Maximum*: N

*Attribute:*

*Attribute\_Label*: ORIGINATOR

*Attribute\_Definition*: Author or developer of source material or data set

*Attribute\_Definition\_Source*: Research Planning, Inc.

*Attribute\_Domain\_Values*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: Any character

*Enumerated\_Domain\_Value\_Definition*: Free text

*Enumerated\_Domain\_Value\_Definition\_Source*: Research Planning, Inc.

*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*: Numeric

*Enumerated\_Domain\_Value\_Definition*: mmyyyy

*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*:

*Enumerated\_Domain*:

*Enumerated\_Domain\_Value*: Any character

*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* DATA\_FORMAT  
*Attribute\_Definition:* The format of the source material  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* PUBLICATION  
*Attribute\_Definition:* Additional citation information  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SCALE  
*Attribute\_Definition:* Scale denominator of the source  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* integer  
*Enumerated\_Domain\_Value\_Definition:* Any integer  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* TIME\_PERIOD  
*Attribute\_Definition:*  
 Date(s) of data collection that the source material is based upon.  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric  
*Enumerated\_Domain\_Value\_Definition:* yyyy  
*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 Hawaii*Distribution\_Liability:*

Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer input peripherals, or when the physical medium is delivered in damaged condition.

*Custom\_Order\_Process:*

Contact NOAA for distribution options (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI\_Viewer product are also included on the distribution CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

---

*Metadata\_Reference\_Information:**Metadata\_Date:* 200111*Metadata\_Review\_Date:* 200111*Metadata\_Contact:**Contact\_Information:**Contact\_Person\_Primary:*

*Contact\_Person:* Jill Petersen

*Contact\_Organization:* NOAA, Office of Response and Restoration

*Contact\_Position:* GIS Manager

*Contact\_Address:*

*Address\_Type:* Physical Address

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

*City:* Seattle

*State\_or\_Province:* Washington

*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944

*Contact\_Facsimile\_Telephone:* (206) 526-6329

*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

*Metadata\_Standard\_Name:* Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

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# Hawaii ESI: SOCECON (Socioeconomic Resource Points)

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

##### *Originator:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

*Publication\_Date:* 200111

*Title:* Hawaii ESI: SOCECON (Socioeconomic Resource Points)

*Edition:* Second

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

##### *Series\_Information:*

*Series\_Name:* None

*Issue\_Identification:* Hawaii

##### *Publication\_Information:*

*Publication\_Place:* Seattle, Washington

##### *Publisher:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

##### *Other\_Citation\_Details:*

Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

#### *Description:*

##### *Abstract:*

This data set contains human-use resource data for airports; aquaculture sites; boat ramps;

commercial, recreational, and subsistence fishing sites; dive sites; historical fishponds; marinas; recreational beaches; surfing sites; and water intakes in coastal Hawaii. Vector points in this data set represent human-use site 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 Hawaii. 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 Hawaii ESI database, for additional human-use information.

*Purpose:*

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

*Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 2000

*Ending\_Date:* 2001

*Currentness\_Reference:*

These data were compiled during 2000-2001. The currentness dates for these data range from 1977 to 2001 and are documented in the Source\_Information section.

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* None Scheduled

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -179.278

*East\_Bounding\_Coordinate:* -154.598

*North\_Bounding\_Coordinate:* 29.252

*South\_Bounding\_Coordinate:* 18.713

*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

*Place:**Place\_Keyword\_Thesaurus:* None*Place\_Keyword:* Hawaii*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:*

Relationships between spatial data layers and attribute data tables for the Hawaii ESI data.

*Browse\_Graphic\_File\_Type:* JPEG*Data\_Set\_Credit:*

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

*Native\_Data\_Set\_Environment:*

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20), and PC's with Windows Operating System (NT4.0/2000). The Spatial\_Data\_Organization\_Information section refers only to the source files in the ARC export format. The following files are included in that data set: bathy.e00, birds.e00, bio\_lut.e00, biofile.e00, biores.e00, breed.e00, breed\_dt.e00, cass\_pt.e00, esi.e00, fish.e00, fishpt.e00, habitats.e00, habpt.e00, hydro.e00, index.e00, invert.e00, invertpt.e00, m\_mammals.e00, m\_mampt.e00, mgt.e00, nests.e00, pools.e00, reptiles.e00, reptpt.e00, seasonal.e00, soc\_dat.e00, soc\_lut.e00, socecon.e00, sources.e00, species.e00, status.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, socecon, sources, species, and status.

*Data\_Quality\_Information:**Attribute\_Accuracy:**Attribute\_Accuracy\_Report:*

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

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

*Logical\_Consistency\_Report:*

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

*Completeness\_Report:*

These data represent a synthesis of expert knowledge and available hardcopy documents on airports; commercial, recreational, and subsistence fishing sites; dive sites; historical fishponds; recreational beaches; surfing sites; water intakes; and digital locations of boat ramps, marinas, and historical fishponds. These data do not represent all human-use sites in the state of Hawaii. Refer to the MGT (Management Area Polygons) data layer for additional human-use information.

*Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy\_Report:*

The SOCECON data set was developed from pre-existing digital and hardcopy sources and largely reflects the positional accuracy of these original data. It is difficult to estimate the positional accuracy of such data, except to state that they are compiled on basemaps with a scale 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:* Gulko, D. (Department of Land and Natural Resources, Oahu)

*Publication\_Date:* Unpublished Material

*Title:*

Coral, Fish, Invertebrate, Sea Turtle, and Marine Mammal Concentration Areas;  
Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Maragos, J. (U.S. Fish and Wildlife Service, Oahu)  
*Publication\_Date:* Unpublished Material  
*Title:*  
 Coral Reef Distribution; Marine Mammal and Invertebrate Concentration Areas;  
 Socioeconomic locations  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Oishi, F. (Department of Land and Natural Resources, Oahu)  
*Publication\_Date:* Unpublished Material  
*Title:*  
 Fish, Invertebrate, Benthic Habitats, Reptile Distribution and Seasonality;  
 Socioeconomic locations  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* AECOS, Inc.  
*Publication\_Date:* 1981  
*Title:*  
 Oahu Coastal Zone Atlas, Representing the Hawaii Coral Reef Inventory, Island of Oahu (OCRI), Part C.  
*Geospatial\_Data\_Presentation\_Form:* Hardcopy maps  
*Publication\_Information:*  
  
*Publication\_Place:* Fort Shafter, HI  
*Publisher:* Prep. for the U.S. Army Corps of Engineers, Pacific Ocean Div.

*Source\_Scale\_Denominator:* unknown  
*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1981

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Oishi, F. and A. Everson  
*Publication\_Date:* Unpublished Material  
*Title:*  
 Fish, Invertebrate, and Sea Turtle Distribution and Seasonality for Oahu/  
 Northwestern Hawaiian Islands; Socioeconomic locations  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Everson, A. (National Marine Fisheries Service, Oahu)

*Publication\_Date:* Unpublished Material

*Title:*

Fish and Invertebrate Distribution and Seasonality; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Clark, J.R.K

*Publication\_Date:* 1977

*Title:* The Beaches of Oahu.

*Geospatial\_Data\_Presentation\_Form:* Hardcopy text

*Publication\_Information:*

*Publication\_Place:* Honolulu, HI

*Publisher:* The University of Hawaii Press

*Type\_of\_Source\_Media:* Paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1977

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Swenson, C. (U.S. Fish and Wildlife Service, Oahu)

*Publication\_Date:* Unpublished Material

*Title:*

Plant, Bird, Marine Mammal, Sea Turtle, Fish, and Invertebrate Concentration  
Areas

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Silbernagle, M. (U.S. Fish and Wildlife Service, Oahu)

*Publication\_Date:* Unpublished Material

*Title:*

Bird Concentration Areas and Seasonality; Marine Mammal Distribution;  
Aquaculture

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* AECOS, Inc.

*Publication\_Date:* 1979

*Title:* Oahu Coral Reef Inventory, Part B

*Geospatial\_Data\_Presentation\_Form:* Hardcopy text

*Publication\_Information:*

*Publication\_Place:* Honolulu, HI

*Publisher:* Prep. for U.S. Army Corps of Engineers, Honolulu Dist.

*Type\_of\_Source\_Media:* Paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1979

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:*

Nishimoto, R. (Department of Land and Natural Resources, Hilo, Hawaii)

*Publication\_Date:* Unpublished Material

*Title:*

Fish, Invertebrate, Coral, Reptile, Bird Distribution; Fish/Invertebrate  
Seasonality; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Gulko, D. and C. Swenson

*Publication\_Date:* Unpublished Material

*Title:*

Invertebrate and Reptile Concentration Areas; Subsistence Fishing Points

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* U.S. Coast Guard

*Publication\_Date:* Unpublished Material

*Title:* Hawaiian Area Contingency Plan Geographic Annex

*Geospatial\_Data\_Presentation\_Form:* Hardcopy text

*Type\_of\_Source\_Media:* Paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1999

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* DeLorme

*Publication\_Date:* 1999

*Title:* Hawaii Atlas and Gazetteer

*Geospatial\_Data\_Presentation\_Form:* Hardcopy text

*Publication\_Information:*

*Publication\_Place:* Yarmouth, ME

*Publisher:* DeLorme

*Source\_Scale\_Denominator:* 84000

*Type\_of\_Source\_Media:* Paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1999

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Manoa Mapworks; AECOS, Inc.

*Publication\_Date:* 1983

*Title:*

Kauai Coastal Resource Atlas; Kauai Island Coastal Resource Inventory (KICRI)

*Geospatial\_Data\_Presentation\_Form:* Hardcopy text/maps

*Publication\_Information:*

*Publication\_Place:* Fort Shafter, HI

*Publisher:*

Prep. for the U.S. Army Corps of Engineers, Pacific Ocean Div., Fort Shafter, HI, 279 pp.; Prep. for U.S. Army Corps of Engineers, Pacific Ocean Div.

*Source\_Scale\_Denominator:* 6000  
*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 1982  
*Ending\_Date:* 1983

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Clark, J.R.K.  
*Publication\_Date:* 1990  
*Title:* The Beaches of Kauai and Niihau  
*Geospatial\_Data\_Presentation\_Form:* Hardcopy text  
*Publication\_Information:*

*Publication\_Place:* Honolulu, HI  
*Publisher:* The University of Hawaii Press

*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:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Puleloa, W. (Department of Land and Natural Resources, Molokai)  
*Publication\_Date:* Unpublished Material

*Title:*

Fish, Invertebrate, and Sea Turtle Distribution for Molokai; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Manoa Mapworks

*Publication\_Date:* 1984

*Title:*

Molokai Coastal Resource Atlas, Representing the Molokai Island Coastal Resource Inventory

*Geospatial\_Data\_Presentation\_Form:* Hardcopy maps

*Publication\_Information:*

*Publication\_Place:* Fort Shafter, HI

*Publisher:* U.S. Army Corps of Engineers, Pacific Ocean Division

*Type\_of\_Source\_Media:* Paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1984

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:**Originator:* Clark, J.R.K.*Publication\_Date:* 1989*Title:* The Beaches of Maui County.*Geospatial\_Data\_Presentation\_Form:* Hardcopy text*Publication\_Information:**Publication\_Place:* Honolulu, HI*Publisher:* The University of Hawaii Press*Type\_of\_Source\_Media:* Paper*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of publication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Socioeconomic Information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Kalilikane, M.*Publication\_Date:* Unpublished Material*Title:*

Commercial/ Recreational/ Subsistence Fish Species Distribution for Molokai

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Socioeconomic Information*Source\_Information:**Source\_Citation:*

*Citation\_Information:**Originator:* AECOS, Inc.*Publication\_Date:* 1981*Title:*

Hawaii Coral Reef Inventory, Island of Maui (Maui Island Coral Reef Inventory), Part B

*Geospatial\_Data\_Presentation\_Form:* Hardcopy maps*Publication\_Information:**Publication\_Place:* Honolulu, HI*Publisher:* U.S. Army Corps of Engineers, Honolulu Dist.*Source\_Scale\_Denominator:* unknown*Type\_of\_Source\_Media:* Paper*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 1981*Source\_Currentness\_Reference:* Date of publication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Socioeconomic Information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* AECOS, Inc.*Publication\_Date:* 1981*Title:*

Maui Coastal Zone Atlas, Representing the Hawaii Coral Reef Inventory, Island of Maui (Maui Island Coral Reef Inventory), Part C

*Geospatial\_Data\_Presentation\_Form:* Hardcopy text*Publication\_Information:**Publication\_Place:* Fort Shafter, HI*Publisher:* Prep. for the U.S. Army Corps of Engineers, Pacific Ocean Div.*Type\_of\_Source\_Media:* Paper*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 1981

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Ohta, P. (Department of Land and Natural Resources, Maui)

*Publication\_Date:* Unpublished Material

*Title:*

State Park boundaries and recreational use for Maui; Monk Seal Distribution

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Brown, E. (University of Hawaii, Maui)

*Publication\_Date:* Unpublished Material

*Title:*

Coral, Algae, Reptile, Marine Mammal, Invertebrate, and Fish Distribution for Maui; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Clark, J.R.K.  
*Publication\_Date:* 1985  
*Title:* The Beaches of the Big Island.  
*Geospatial\_Data\_Presentation\_Form:* Document  
*Publication\_Information:*

*Publication\_Place:* Honolulu, HI  
*Publisher:* The University of Hawaii Press

*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1985

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None  
*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:*  
 Carman, B. (Department of Land and Natural Resources, Kona, Hawaii)  
*Publication\_Date:* Unpublished Material  
*Title:*  
 Distribution of Aquatic Resources for the Big Island; Socioeconomic locations  
*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication  
*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Nolan, R.S. and D.P. Cheney

*Publication\_Date:* 1981

*Title:* West Hawaii Coral Reef Inventory.

*Geospatial\_Data\_Presentation\_Form:* Document

*Publication\_Information:*

*Publication\_Place:* Honolulu, HI

*Publisher:* Prep. for U.S. Army Corps of Engineers, Honolulu Dist.

*Type\_of\_Source\_Media:* Paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1981

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:*

Walsh, W. (Department of Land and Natural Resources, Kona, Hawaii)

*Publication\_Date:* Unpublished Material

*Title:*

Coral, Fish, Invertebrate, Reptile, and Marine Mammal Distribution for Big Island; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:*

Cotton, S. (Department of Land and Natural Resources, Kona, Hawaii)

*Publication\_Date:* Unpublished Material

*Title:*

Hawksbill Sea Turtle Nesting Sites for the Big Island; Aquaculture

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Cartographic Relief

*Publication\_Date:* 1981

*Title:* West Hawaii Coral Reef Atlas

*Geospatial\_Data\_Presentation\_Form:* Document

*Publication\_Information:*

*Publication\_Place:* Fort Shafter, HI

*Publisher:* Prep. for U.S. Army Corps of Engineers, Pacific Ocean Division

*Type\_of\_Source\_Media:* Paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1981

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* NOAA

*Publication\_Date:* 1996

*Title:* NOAA Nautical Chart 19320 (Fish aggregating devices)

*Geospatial\_Data\_Presentation\_Form:* Map

*Publication\_Information:*

*Publication\_Place:* Washington, D.C.

*Publisher:* U.S. Dept. of Commerce, NOAA, NOS, Coast Survey

*Source\_Scale\_Denominator:* 250000

*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:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Hawaii Statewide GIS Program

*Publication\_Date:* 1999

*Title:*

Fisheries and Special Management Areas, Parks, Reserves, Fishponds, Marinas,  
Beaches

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

*Publication\_Information:*

*Publication\_Place:* Hawaii

*Publisher:*

<http://www.hawaii.gov/dbedt/gis/>; Contact: Kristian Kerr, Department of Land and Natural Resources (DLNR), 808-586-1940

*Source\_Scale\_Denominator:* varies

*Type\_of\_Source\_Media:* Disc

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 1994

*Ending\_Date:* 1999

*Source\_Currentness\_Reference:* Date of compilation

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* National Marine Fisheries Service

*Publication\_Date:* 2000

*Title:*

Fisheries Management Plan for Precious Corals: Sect. 5.0 Existing Management Measures

*Geospatial\_Data\_Presentation\_Form:* Document

*Publication\_Information:*

*Publication\_Place:* Unknown

*Publisher:* Unknown

*Type\_of\_Source\_Media:* Paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:**Citation\_Information:**Originator:* Foster, K. (U.S. Fish and Wildlife Service, Oahu)*Publication\_Date:* Unpublished Material*Title:*

Bird Distribution and Seasonality; Seagrass Concentrations; Surfing

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2001*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Socioeconomic Information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Hawaiian Electric Company (HECO)*Publication\_Date:* Unpublished Material*Title:* Locations of Water Intakes*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2001*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Socioeconomic Information*Source\_Information:**Source\_Citation:**Citation\_Information:*

*Originator:* Bail, L. (Bubbles Below, Inc.)

*Publication\_Date:* Unpublished Material

*Title:*

Distribution of Aquatic Resources Around Kauai and Niihau; Dive Sites

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2001

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* U.S. Navy, Pearl Harbor

*Publication\_Date:* Unpublished Material

*Title:* Distribution of Human-Use Resources for Naval Properties

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2001

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Socioeconomic Information

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Drigot, D. (U.S. Marine Corp, Kaneohe Bay)

*Publication\_Date:* Unpublished Material

*Title:*

Monk Seal Haul-Outs and Pupping in and Around Kaneohe Bay; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2001

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Socioeconomic Information

*Process\_Step:**Process\_Description:*

Three main sources of data were used to depict human-use resources for this data layer: 1) personal interviews with resource experts from the Division of Land and Natural Resources (DLNR), U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), and other agencies; 2) various hardcopy documents, including the 1979-1984 Hawaii Coral Reef Inventory (HICRI) atlases, and the 1977-1990 Clark, J.R.K., beach guides; and 3) 1994 HI Statewide GIS System data sets for boat ramps, marinas, and historical fishponds. Information on commercial, recreational, and subsistence fishing sites; dive sites; historical fishponds; surfing sites; and water intakes was gathered during a set of interviews and was compiled onto USGS 1:24,000 topographic quadrangles. Information on recreational and subsistence fishing and dive sites was gathered from the HICRI atlases. Information on recreational and subsistence fishing, recreational beaches, and surfing sites was gathered from the 1979-1990 Clark beach guides. Boat ramps and marinas depicted as points in the HI Statewide GIS Program "harbors" data set were depicted as points in this data layer. Both fishpond polygons and points from the HI Statewide GIS Program data were depicted as points in this data layer, and only those occurrences that were considered to be in "good to excellent," "fair to good," and "poor to fair" condition were included in this data set. The information gathered from the hardcopy sources was interpreted and compiled onto the USGS topographic quads along with the information gathered during the interviews. Following a second set of interviews, edits were made to the compiled data based on recommendations by the resource experts.

*Process\_Date:* 200111

*Process\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NOAA, Office of Response and Restoration

*Contact\_Person:* Jill Petersen

*Contact\_Address:*

*Address\_Type:* Physical address  
*Address:* 7600 Sand Point Way, N.E.  
*City:* Seattle  
*State\_or\_Province:* Washington  
*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944  
*Contact\_Facsimile\_Telephone:* (206) 526-6329  
*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

---

#### *Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector  
*Point\_and\_Vector\_Object\_Information:*

##### *SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Entity Point  
*Point\_and\_Vector\_Object\_Count:* 1310

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#### *Spatial\_Reference\_Information:*

##### *Horizontal\_Coordinate\_System\_Definition:*

##### *Geographic:*

*Latitude\_Resolution:* 0.00005  
*Longitude\_Resolution:* 0.00005  
*Geographic\_Coordinate\_Units:* Decimal degrees

##### *Geodetic\_Model:*

*Horizontal\_Datum\_Name:* Old Hawaiian Datum  
*Ellipsoid\_Name:* Clarke 1866  
*Semi-major\_Axis:* 6378206.4  
*Denominator\_of\_Flattening\_Ratio:* 294.9786982

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#### *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 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 Hawaii this is 65). ID is a unique combination of the atlas number (65), 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 spatial data layer SOCECON contains vector points representing commercial, recreational, and subsistence fishing sites; dive sites; historical fishponds; recreational beaches; surfing sites; water intakes; and boat ramps, marinas, and historical fishponds. 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:* AQ

*Enumerated\_Domain\_Value\_Definition:* AQUACULTURE

*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:* BOATRAMP

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc

*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:* DV  
*Enumerated\_Domain\_Value\_Definition:* DIVING  
*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 FISHING  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* S2  
*Enumerated\_Domain\_Value\_Definition:* SURFING  
*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

*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 (65), element number (10), and record number.

*Attribute\_Definition\_Source:* NOAA

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 651000001

*Range\_Domain\_Maximum:* 651001310

*Attribute:*

*Attribute\_Label:* HUNUM

*Attribute\_Definition:* An identifier that links directly to the SOC\_DAT table.

*Attribute\_Definition\_Source:* NOAA

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 65000001

*Range\_Domain\_Maximum:* 65000292

*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.

*Attribute\_Definition\_Source:* NOAA

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 65000001

*Range\_Domain\_Maximum:* 65000356

*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 (65), element number (10), and record number.

*Attribute\_Definition\_Source:* NOAA

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 651000001

*Range\_Domain\_Maximum:* 651100575

*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 the SOC\_DAT table directly to vector objects in the human-use data layers.

*Attribute\_Definition\_Source:* NOAA

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 65000001

*Range\_Domain\_Maximum:* 65000356

*Attribute:*

*Attribute\_Label:* TYPE

*Attribute\_Definition:* Identifies the feature type

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* ARTIFICIAL REEF

*Enumerated\_Domain\_Value\_Definition:* ARTIFICIAL REEF

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* CRITICAL HABITAT

*Enumerated\_Domain\_Value\_Definition:* DESIGNATED CRITICAL HABITAT

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* MANAGEMENT AREA  
*Enumerated\_Domain\_Value\_Definition:* MANAGEMENT AREA  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* MARINE SANCTUARY  
*Enumerated\_Domain\_Value\_Definition:* MARINE SANCTUARY  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* NATIONAL PARK  
*Enumerated\_Domain\_Value\_Definition:* NATIONAL PARK  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* PARK  
*Enumerated\_Domain\_Value\_Definition:* REGIONAL OR STATE PARK  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* AIRPORT  
*Enumerated\_Domain\_Value\_Definition:* AIRPORT  
*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:* BOATRAMP  
*Enumerated\_Domain\_Value\_Definition:* BOATRAMP  
*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:* DIVING  
*Enumerated\_Domain\_Value\_Definition:* DIVING  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* HISTORICAL SITE  
*Enumerated\_Domain\_Value\_Definition:* HISTORICAL SITE  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* MARINA  
*Enumerated\_Domain\_Value\_Definition:* MARINA  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* RECREATIONAL FISHING  
*Enumerated\_Domain\_Value\_Definition:* RECREATIONAL FISHING  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* SUBSISTENCE  
*Enumerated\_Domain\_Value\_Definition:* SUBSISTENCE FISHING  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* SURFING  
*Enumerated\_Domain\_Value\_Definition:* SURFING  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* WATER INTAKE  
*Enumerated\_Domain\_Value\_Definition:* WATER INTAKE  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc

*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:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* CONTACT  
*Attribute\_Definition:* Contact person or entity  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* PHONE  
*Attribute\_Definition:* Contact telephone number  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character  
*Enumerated\_Domain\_Value\_Definition:* Free text  
*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* G\_SOURCE  
*Attribute\_Definition:*  
 Geographic source integer 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 integer identifier that links records in the SOC\_DAT data table to records in the SOURCES data table.  
*Attribute\_Definition\_Source:* Research Planning, Inc.  
*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 1  
*Range\_Domain\_Maximum:* N

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* SOURCES

*Entity\_Type\_Definition:*

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

*Entity\_Type\_Definition\_Source:* Research Planning, Inc.

*Attribute:*

*Attribute\_Label:* SOURCE\_ID

*Attribute\_Definition:*

Source identifier that links records in the SOURCES data table to the items G\_SOURCE and A\_SOURCE in the SOC\_DAT table, and to G\_SOURCE and S\_SOURCE in the BIORES table.

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 1  
*Range\_Domain\_Maximum:* N

*Attribute:*

*Attribute\_Label:* ORIGINATOR

*Attribute\_Definition:* Author or developer of source material or data set

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Any character

*Enumerated\_Domain\_Value\_Definition:* Free text

*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.

*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:* Numeric

*Enumerated\_Domain\_Value\_Definition:* mmyyyy

*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:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Any character*Enumerated\_Domain\_Value\_Definition:* Free text*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* DATA\_FORMAT*Attribute\_Definition:* The format of the source material*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Any character*Enumerated\_Domain\_Value\_Definition:* Free text*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* PUBLICATION*Attribute\_Definition:* Additional citation information*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* Any character*Enumerated\_Domain\_Value\_Definition:* Free text*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* SCALE*Attribute\_Definition:* Scale denominator of the source*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* integer*Enumerated\_Domain\_Value\_Definition:* Any integer*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Attribute:*

*Attribute\_Label:* TIME\_PERIOD

*Attribute\_Definition:*

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

*Attribute\_Definition\_Source:* Research Planning, Inc.

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* Numeric

*Enumerated\_Domain\_Value\_Definition:* yyyy

*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 Hawaii

*Distribution\_Liability:*

Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer input peripherals, or when the physical medium is delivered in damaged condition.

*Custom\_Order\_Process:*

Contact NOAA for distribution options (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI Viewer product are also included on the distribution CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

*Metadata\_Reference\_Information:**Metadata\_Date:* 200111*Metadata\_Review\_Date:* 200111*Metadata\_Contact:**Contact\_Information:**Contact\_Person\_Primary:**Contact\_Person:* Jill Petersen*Contact\_Organization:* NOAA, Office of Response and Restoration*Contact\_Position:* GIS Manager*Contact\_Address:**Address\_Type:* Physical Address*Address:* 7600 Sand Point Way, N.E.*City:* Seattle*State\_or\_Province:* Washington*Postal\_Code:* 98115-6349*Contact\_Voice\_Telephone:* (206) 526-6944*Contact\_Facsimile\_Telephone:* (206) 526-6329*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov*Metadata\_Standard\_Name:* Content Standards for Digital Geospatial Metadata*Metadata\_Standard\_Version:* FGDC-STD-001-1998

# Hawaii ESI: BATHY (Bathymetry Lines)

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

##### *Originator:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

*Publication\_Date:* 200111

*Title:* Hawaii ESI: BATHY (Bathymetry Lines)

*Edition:* Second

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

##### *Series\_Information:*

*Series\_Name:* None

*Issue\_Identification:* Hawaii

##### *Publication\_Information:*

*Publication\_Place:* Seattle, Washington

##### *Publisher:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

##### *Other\_Citation\_Details:*

Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

### *Description:*

#### *Abstract:*

This data set contains the vector arcs representing 10- and 100-fathom bathymetric contours used in the creation of the Environmental Sensitivity Index (ESI) for Hawaii. This data set comprises a portion of the ESI data for Hawaii. 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:* 2000

*Ending\_Date:* 2001

*Currentness\_Reference:*

These data were compiled during 2000-2001. The currentness dates for these data range from 2000 to 2001 and are documented in the Source\_Information section.

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* None Scheduled

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -179.278

*East\_Bounding\_Coordinate:* -154.598

*North\_Bounding\_Coordinate:* 29.252

*South\_Bounding\_Coordinate:* 18.713

*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:* Bathymetry

*Theme\_Keyword:* Wildlife

*Place:*

*Place\_Keyword\_Thesaurus:* None

*Place\_Keyword:* Hawaii

*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:*

Relationships between spatial data layers and attribute data tables for the Hawaii ESI data.

*Browse\_Graphic\_File\_Type:* JPEG

*Data\_Set\_Credit:*

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

*Native\_Data\_Set\_Environment:*

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20), and PC's with Windows Operating System (NT4.0/2000). The Spatial\_Data\_Organization\_Information section refers only to the source files in the ARC export format. The following files are included in that data set: bathy.e00, birds.e00, bio\_lut.e00, biofile.e00, biores.e00, breed.e00, breed\_dt.e00, cass\_pt.e00, esi.e00, fish.e00, fishpt.e00, habitats.e00, habpt.e00, hydro.e00, index.e00, invert.e00, invertpt.e00, m\_mammals.e00, m\_mampt.e00, mgt.e00, nests.e00, pools.e00, reptiles.e00, reptpt.e00, seasonal.e00, soc\_dat.e00, soc\_lut.e00, socecon.e00, sources.e00, species.e00, status.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, socecon, sources, species, and status.

*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

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

*Logical\_Consistency\_Report:*

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

proper coding, GIS topological consistencies (such as dangles, unnecessary node, etc.), and ORACLE(r) to ARC/INFO(r) consistencies. A final review is made by the GIS manager, where the data are written to CD-ROM and the metadata are written. After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks.

*Completeness\_Report:*

These data represent a synthesis of bathymetry data from 1:24,000 U.S. Geological Survey (USGS) topographic maps and NOAA nautical charts of various scales. Only 10- and 100-fathom bathymetric contours required for the accurate delineation of biological and other resources were included. Not all bathymetric contours present on the source maps were digitized.

*Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy\_Report:*

The bathymetry data set was developed from pre-existing hardcopy sources and reflects the positional accuracy of these original data. The horizontal positional accuracy of the hardcopy 1:24,000 USGS topographic quads should conform to National Map Accuracy Standards at scales of 1:24,000. Additionally, the NOAA navigational charts should conform to National Map Accuracy Standards at the scales of their publication. However, it is difficult to estimate the positional accuracy of these data. Note that the bathymetric contours are only intended to provide approximate guidelines for depicting biological resources. See the Lineage and Process\_Description sections for more information on the original source data and how these data were integrated or manipulated to create the final data set.

*Lineage:*

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* U.S. Geological Survey

*Publication\_Date:* Varies

*Title:* Topographic Quadrangles

*Geospatial\_Data\_Presentation\_Form:* Map

*Publication\_Information:*

*Publication\_Place:* Denver, CO or Reston, VA

*Publisher:* U.S. Geological Survey

*Source\_Scale\_Denominator:* 24000

*Type\_of\_Source\_Media:* Paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* Varies

*Source\_Currentness\_Reference:* Date of publication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Bathymetric contours

*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* National Oceanic and Atmospheric Administration*Publication\_Date:* Varies*Title:* Navigational Charts*Geospatial\_Data\_Presentation\_Form:* Map*Publication\_Information:**Publication\_Place:* Seattle, WA*Publisher:* National Oceanic and Atmospheric Administration*Source\_Scale\_Denominator:* Varies*Type\_of\_Source\_Media:* Paper*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* Varies*Source\_Currentness\_Reference:* Date of publication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Bathymetric contours*Process\_Step:**Process\_Description:*

These data were assembled from two main sources: 1) hardcopy 1:24,000 USGS topographic maps, and 2) hardcopy NOAA navigational charts with scales ranging from 1:20,000 to 1:500,000. These maps were scanned and registered, and all 10- and 100-fathom bathymetric contours required for the accurate delineation of biological and other resources were digitized. Not all 10- and 100-fathom bathymetric contours present on the source maps were digitized.

*Process\_Date:* 200111*Process\_Contact:**Contact\_Information:**Contact\_Organization\_Primary:**Contact\_Organization:* NOAA, Office of Response and Restoration*Contact\_Person:* Jill Petersen*Contact\_Address:**Address\_Type:* Physical address*Address:* 7600 Sand Point Way, N.E.

*City:* Seattle  
*State\_or\_Province:* Washington  
*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944  
*Contact\_Facsimile\_Telephone:* (206) 526-6329  
*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector  
*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Complete chain  
*Point\_and\_Vector\_Object\_Count:* 2575

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Link  
*Point\_and\_Vector\_Object\_Count:* 986837

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Node, planar graph  
*Point\_and\_Vector\_Object\_Count:* 2581

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Geographic:*

*Latitude\_Resolution:* 0.00005  
*Longitude\_Resolution:* 0.00005  
*Geographic\_Coordinate\_Units:* Decimal degrees

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* Old Hawaiian Datum  
*Ellipsoid\_Name:* Clarke 1866  
*Semi-major\_Axis:* 6378206.4  
*Denominator\_of\_Flattening\_Ratio:* 294.9786982

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*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:**Entity\_Type\_Label:* BATHY.AAT*Entity\_Type\_Definition:*

The data layer BATHY contains vector arcs representing 10- and 100-fathom bathymetric contours.

*Entity\_Type\_Definition\_Source:* Research Planning, Inc.*Attribute:**Attribute\_Label:* DEPTH*Attribute\_Definition:* Numeric identifier containing depth of contour*Attribute\_Definition\_Source:* Research Planning, Inc.*Attribute\_Domain\_Values:**Enumerated\_Domain:**Enumerated\_Domain\_Value:* 100*Enumerated\_Domain\_Value\_Definition:* 100-fathom bathymetric contour*Enumerated\_Domain\_Value\_Definition\_Source:* Research Planning, Inc.*Enumerated\_Domain:**Enumerated\_Domain\_Value:* 10*Enumerated\_Domain\_Value\_Definition:* 10-fathom bathymetric contour*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 Hawaii*Distribution\_Liability:*

Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer input peripherals, or when the physical medium is delivered in damaged condition.

*Custom\_Order\_Process:*

Contact NOAA for distribution options (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI\_Viewer product are also included on the distribution CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

---

*Metadata\_Reference\_Information:*

*Metadata\_Date:* 200111

*Metadata\_Review\_Date:* 200111

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* Jill Petersen

*Contact\_Organization:* NOAA, Office of Response and Restoration

*Contact\_Position:* GIS Manager

*Contact\_Address:*

*Address\_Type:* Physical Address

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

*City:* Seattle

*State\_or\_Province:* Washington

*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944

*Contact\_Facsimile\_Telephone:* (206) 526-6329

*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

*Metadata\_Standard\_Name:* Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

---

# Hawaii ESI: CASS\_PT (Coral Areas of Special Significance - Points)

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

##### *Originator:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

*Publication\_Date:* 200111

*Title:* Hawaii ESI: CASS\_PT (Coral Areas of Special Significance - Points)

*Edition:* Second

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

##### *Series\_Information:*

*Series\_Name:* None

*Issue\_Identification:* Hawaii

##### *Publication\_Information:*

*Publication\_Place:* Seattle, Washington

##### *Publisher:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

##### *Other\_Citation\_Details:*

Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

#### *Description:*

##### *Abstract:*

This data set contains sensitive biological resource data for Coral Areas of Special Significance in

coastal Hawaii. Coral Areas of Special Significance were designated by resource experts as those areas that should be highly prioritized for protection following spills, due to various reasons (e.g. species diversity, rare coral, endangered/threatened marine animal species, high fish/invertebrate concentrations, sensitive habitat, etc.). In this data set, they are represented by vector points. This data set comprises a portion of the Environmental Sensitivity Index (ESI) for Hawaii. 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:* 2000

*Ending\_Date:* 2001

*Currentness\_Reference:*

These data were compiled during 2000-2001. The currentness dates for these data range from 2000 to 2001 and are documented in the Source\_Information section.

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* None Scheduled

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -179.278

*East\_Bounding\_Coordinate:* -154.598

*North\_Bounding\_Coordinate:* 29.252

*South\_Bounding\_Coordinate:* 18.713

*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:* Coral

*Theme\_Keyword:* Wildlife

*Place:*

*Place\_Keyword\_Thesaurus:* None

*Place\_Keyword:* Hawaii

*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:*

Relationships between spatial data layers and attribute data tables for the Hawaii ESI data.

*Browse\_Graphic\_File\_Type:* JPEG

*Data\_Set\_Credit:*

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

*Native\_Data\_Set\_Environment:*

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20), and PC's with Windows Operating System (NT4.0/2000). The *Spatial\_Data\_Organization\_Information* section refers only to the source files in the ARC export format. The following files are included in that data set: bathy.e00, birds.e00, bio\_lut.e00, biofile.e00, biores.e00, breed.e00, breed\_dt.e00, cass\_pt.e00, esi.e00, fish.e00, fishpt.e00, habitats.e00, habpt.e00, hydro.e00, index.e00, invert.e00, invertpt.e00, m\_mammals.e00, m\_mampt.e00, mgt.e00, nests.e00, pools.e00, reptiles.e00, reptpt.e00, seasonal.e00, soc\_dat.e00, soc\_lut.e00, socecon.e00, sources.e00, species.e00, status.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, socecon, sources, species, and status.

*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

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

*Logical\_Consistency\_Report:*

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

*Completeness\_Report:*

Coral Areas of Special Significance were designated by resource experts as those areas that should be highly prioritized for protection following spills, due to various reasons (e.g. species diversity, rare coral, endangered/threatened marine animal species, high fish/invertebrate concentrations, sensitive habitat, etc.). Refer to other biology layers for additional information on corals and associated species. These data do not necessarily represent all "Coral Areas of Special Significance" in the state of Hawaii.

*Positional\_Accuracy:**Horizontal\_Positional\_Accuracy:**Horizontal\_Positional\_Accuracy\_Report:*

These data were developed by regional experts who manually delineated areas of special significance. It is difficult to estimate the positional accuracy of such data, except to state that they were compiled on 1:24,000 U.S. Geological Survey (USGS) topographic maps. 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:* Gulko, D. (Department of Land and Natural Resources, Oahu)

*Publication\_Date:* Unpublished Material

*Title:*

Coral, Fish, Invertebrate, Sea Turtle, and Marine Mammal Concentration Areas;  
Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge

*Type\_of\_Source\_Media:* Personal communication

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:**Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:* Date of communication

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Coral Areas of Special Significance information

*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Maragos, J. (U.S. Fish and Wildlife Service, Oahu)*Publication\_Date:* Unpublished Material*Title:*Coral Reef Distribution; Marine Mammal and Invertebrate Concentration Areas;  
Socioeconomic locations*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Coral Areas of Special Significance information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Brown, E. (University of Hawaii, Maui)*Publication\_Date:* Unpublished Material*Title:*Coral, Algae, Reptile, Marine Mammal, Invertebrate, and Fish Distribution for  
Maui; Socioeconomic locations*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Coral Areas of Special Significance information

*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:*

Walsh, W. (Department of Land and Natural Resources, Kona, Hawaii)

*Publication\_Date:* Unpublished Material*Title:*

Coral, Fish, Invertebrate, Reptile, and Marine Mammal Distribution for Big Island; Socioeconomic locations

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2000*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Coral Areas of Special Significance information*Source\_Information:**Source\_Citation:**Citation\_Information:**Originator:* Bail, L. (Bubbles Below, Inc.)*Publication\_Date:* Unpublished Material*Title:*

Distribution of Aquatic Resources Around Kauai and Niihau; Dive Sites

*Geospatial\_Data\_Presentation\_Form:* Expert knowledge*Type\_of\_Source\_Media:* Personal communication*Source\_Time\_Period\_of\_Content:**Time\_Period\_Information:**Single\_Date/Time:**Calendar\_Date:* 2001*Source\_Currentness\_Reference:* Date of communication*Source\_Citation\_Abbreviation:* None*Source\_Contribution:* Coral Areas of Special Significance information

*Process\_Step:**Process\_Description:*

The main source of data used to depict Coral Areas of Special Significance was personal interviews with resource experts from the Division of Land and Natural Resources (DLNR), National Marine Fisheries Service (NMFS), U.S. Fish and Wildlife Service (USFWS), and other agencies. Coral Areas of Special Significance were designated by resource experts as those areas that should be highly prioritized for protection following spills, due to various reasons (e.g. species diversity, rare coral, endangered/threatened marine animal species, high fish/invertebrate concentrations, sensitive habitat, etc.). Information gathered during a set of interviews was compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles. A second set of interviews was conducted following the data compilation phase, and edits were made based on recommendations by the resource experts.

*Process\_Date:* 200111

*Process\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NOAA, Office of Response and Restoration

*Contact\_Person:* Jill Petersen

*Contact\_Address:*

*Address\_Type:* Physical address

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

*City:* Seattle

*State\_or\_Province:* Washington

*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944

*Contact\_Facsimile\_Telephone:* (206) 526-6329

*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Entity Point

*Point\_and\_Vector\_Object\_Count:* 54

*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Geographic:*

*Latitude\_Resolution:* 0.00005  
*Longitude\_Resolution:* 0.00005  
*Geographic\_Coordinate\_Units:* Decimal degrees

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* Old Hawaiian Datum  
*Ellipsoid\_Name:* Clarke 1866  
*Semi-major\_Axis:* 6378206.4  
*Denominator\_of\_Flattening\_Ratio:* 294.9786982

---

*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* CASS\_PT.PAT  
*Entity\_Type\_Definition:*  
The data layer CASS\_PT.PAT contains vector points representing Coral Areas of Special Significance.  
*Entity\_Type\_Definition\_Source:* Research Planning, Inc.

---

*Distribution\_Information:*

*Distributor:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* John Kaperick  
*Contact\_Organization:* NOAA, Office of Response and Restoration

*Contact\_Address:*

*Address\_Type:* Physical Address  
*Address:* 7600 Sand Point Way, N.E.  
*City:* Seattle  
*State\_or\_Province:* Washington  
*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6400  
*Contact\_Facsimile\_Telephone:* (206) 526-6329

*Resource\_Description:* ESI Atlas for Hawaii

*Distribution\_Liability:*

Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA

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

*Custom\_Order\_Process:*

Contact NOAA for distribution options (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI\_Viewer product are also included on the distribution CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

---

*Metadata\_Reference\_Information:*

*Metadata\_Date:* 200111

*Metadata\_Review\_Date:* 200111

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* Jill Petersen

*Contact\_Organization:* NOAA, Office of Response and Restoration

*Contact\_Position:* GIS Manager

*Contact\_Address:*

*Address\_Type:* Physical Address

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

*City:* Seattle

*State\_or\_Province:* Washington

*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6944

*Contact\_Facsimile\_Telephone:* (206) 526-6329

*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

*Metadata\_Standard\_Name:* Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

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# Hawaii ESI: POOLS (Anchialine Pool Points)

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

##### *Originator:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

*Publication\_Date:* 200111

*Title:* Hawaii ESI: POOLS (Anchialine Pool Points)

*Edition:* Second

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

##### *Series\_Information:*

*Series\_Name:* None

*Issue\_Identification:* Hawaii

##### *Publication\_Information:*

*Publication\_Place:* Seattle, Washington

##### *Publisher:*

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

##### *Other\_Citation\_Details:*

Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington

### *Description:*

#### *Abstract:*

This data set contains sensitive biological resource data for anchialine pools in Hawaii. Anchialine pools are small, relatively shallow coastal ponds that occur singly or in groups close to the shoreline. They have direct connections to the ocean either through surface channels or through subsurface cracks and fissures in the lava flows, and they experience regular tidal fluctuations in

water levels. Vector points in this data set represent anchialine pools. This data set comprises a portion of the Environmental Sensitivity Index (ESI) data for Hawaii . 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:* 2000

*Ending\_Date:* 2001

*Currentness\_Reference:*

These data were compiled during 2000-2001. The currentness dates for these data range from 1970 to 2001 and are documented in the Source\_Information section.

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* None Scheduled

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -179.278

*East\_Bounding\_Coordinate:* -154.598

*North\_Bounding\_Coordinate:* 29.252

*South\_Bounding\_Coordinate:* 18.713

*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:* Anchialine Pool

*Theme\_Keyword:* Wildlife

*Place:*

*Place\_Keyword\_Thesaurus:* None

*Place\_Keyword:* Hawaii

*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:*

Relationships between spatial data layers and attribute data tables for the Hawaii ESI data.

*Browse\_Graphic\_File\_Type:* JPEG

*Data\_Set\_Credit:*

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

*Native\_Data\_Set\_Environment:*

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20), and PC's with Windows Operating System (NT4.0/2000). The Spatial\_Data\_Organization\_Information section refers only to the source files in the ARC export format. The following files are included in that data set: bathy.e00, birds.e00, bio\_lut.e00, biofile.e00, biores.e00, breed.e00, breed\_dt.e00, cass\_pt.e00, esi.e00, fish.e00, fishpt.e00, habitats.e00, habpt.e00, hydro.e00, index.e00, invert.e00, invertpt.e00, m\_mammals.e00, m\_mampt.e00, mgt.e00, nests.e00, pools.e00, reptiles.e00, reptpt.e00, seasonal.e00, soc\_dat.e00, soc\_lut.e00, socecon.e00, sources.e00, species.e00, status.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, socecon, sources, species, and status.

*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

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

*Logical\_Consistency\_Report:*

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

*Completeness\_Report:*

These data represent digital anchialine pool locations. All Natural Heritage Program occurrences that were recorded between 1970-2000 of anchialine pools within 0.25 miles on and offshore were used in this data layer.

*Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy\_Report:*

The anchialine pools data set was developed from a pre-existing digital source and reflects 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:* Hawaii Natural Heritage Program

*Publication\_Date:* 2000

*Title:*

Occurrences of Anchialine Pools, Fish, Invertebrates, Plants, and Sea Turtles

*Geospatial\_Data\_Presentation\_Form:* Vector digital data

*Publication\_Information:*

*Publication\_Place:* Hawaii

*Publisher:* Data contact: Roy Kam, Data Manager, 808/956-3744

*Source\_Scale\_Denominator:* 24000

*Type\_of\_Source\_Media:* Electronic mail

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 1970

*Ending\_Date:* 2000

*Source\_Currentness\_Reference:* Dates of survey

*Source\_Citation\_Abbreviation:* None

*Source\_Contribution:* Anchialine Pool Information

*Process\_Step:**Process\_Description:*

Natural Heritage Program (NHP) occurrence data was the primary source used to depict anchialine pools for this data layer. All NHP occurrences that were determined to be current (documented between 1970-2000) were included.

*Process\_Date:* 200111*Process\_Contact:**Contact\_Information:**Contact\_Organization\_Primary:**Contact\_Organization:* NOAA, Office of Response and Restoration*Contact\_Person:* Jill Petersen*Contact\_Address:**Address\_Type:* Physical address*Address:* 7600 Sand Point Way, N.E.*City:* Seattle*State\_or\_Province:* Washington*Postal\_Code:* 98115-6349*Contact\_Voice\_Telephone:* (206) 526-6944*Contact\_Facsimile\_Telephone:* (206) 526-6329*Contact\_Electronic\_Mail\_Address:* Jill.Petersen@noaa.gov

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*Spatial\_Data\_Organization\_Information:**Direct\_Spatial\_Reference\_Method:* Vector*Point\_and\_Vector\_Object\_Information:**SDTS\_Terms\_Description:**SDTS\_Point\_and\_Vector\_Object\_Type:* Entity Point*Point\_and\_Vector\_Object\_Count:* 180

---

*Spatial\_Reference\_Information:**Horizontal\_Coordinate\_System\_Definition:**Geographic:**Latitude\_Resolution:* 0.00005*Longitude\_Resolution:* 0.00005*Geographic\_Coordinate\_Units:* Decimal degrees*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* Old Hawaiian Datum  
*Ellipsoid\_Name:* Clarke 1866  
*Semi-major\_Axis:* 6378206.4  
*Denominator\_of\_Flattening\_Ratio:* 294.9786982

---

*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* POOLS.PAT

*Entity\_Type\_Definition:*

The data layer POOLS contains vector points representing anchialine pools.

*Entity\_Type\_Definition\_Source:* Research Planning, Inc.

---

*Distribution\_Information:*

*Distributor:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* John Kaperick

*Contact\_Organization:* NOAA, Office of Response and Restoration

*Contact\_Address:*

*Address\_Type:* Physical Address

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

*City:* Seattle

*State\_or\_Province:* Washington

*Postal\_Code:* 98115-6349

*Contact\_Voice\_Telephone:* (206) 526-6400

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*Resource\_Description:* ESI Atlas for Hawaii

*Distribution\_Liability:*

Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer input peripherals, or when the physical medium is delivered in damaged condition.

*Custom\_Order\_Process:*

Contact NOAA for distribution options (see Distributor). ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI\_View

product are also included on the distribution CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats.

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 200111

*Metadata\_Review\_Date:* 200111

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

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*Metadata\_Standard\_Name:* Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

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# Relationships between spatial data layers and attribute data tables

