1.0 Identification Information

1.1 Citation

1.1.1 Originator

Bureau of Safety and Environmental Enforcement (BSEE), U.S. Department of the Interior, Gulf of Mexico Region: New Orleans, Louisiana and National: Washington, D.C

1.1.2 Publication Date

202302

1.1.4 Title

BSEE Gulf of Mexico Offshore ESI: M\_MAMMAL (Marine Mammal Polygons)

1.1.5 Edition

First

1.1.6 Geospatial Data Presentation Form

vector digital data

1.1.7 Series Information

1.1.7.1 Series Name

None

1.1.7.2 Issue Identification

BSEE Gulf of Mexico

1.1.8 Publication Information

1.1.8.1 Publication Place

Gulf of Mexico Region: New Orleans, Louisiana and National: Washington, D.C

1.1.8.2 Publisher

Bureau of Safety and Environmental Enforcement (BSEE), U.S. Department of the Interior

1.1.9 Other Citation Details

Prepared by Research Planning, Inc., Columbia, South Carolina for the Bureau of Safety and Environmental Enforcement (BSEE), U.S. Department of the Interior, Gulf of Mexico Region: New Orleans, Louisiana and National: Washington, D.C

1.2 Description

1.2.1 Abstract

This data set contains sensitive biological resource data for cetaceans for the BSEE Gulf of Mexico Offshore ESI. Vector polygons in this data set represent marine mammal distribution and concentration areas. Species specific abundance, seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer.

This data set comprises a portion of the ESI data for BSEE Gulf of Mexico. ESI data characterize the marine and coastal environments and wildlife by their sensitivity to spilled oil.

1.2.2 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.

1.3 Time Period of Content

1.3.3 Range of Dates/Times

1.3.3.1 Beginning Date

2022

1.3.3.3 Ending Date

2023

1.3.1 Currentness Reference

The data were compiled during 2022-2023. The currentness dates for this data range from 2022 to 2023 and are documented in the Lineage section.

1.4 Status

1.4.1 Progress

Complete

1.4.2 Maintenance and Update Frequency

None Scheduled

1.5 Spatial Domain

1.5.1 Bounding Coordinates

1.5.1.1 West Bounding Coordinate

-97.20515

1.5.1.2 East Bounding Coordinate

-81.14322

1.5.1.3 North Bounding Coordinate

30.46479

1.5.1.4 South Bounding Coordinate

24.33035

1.6 Keywords

1.6.1 Theme

1.6.1.1 Theme Keyword Thesaurus

ISO 19115 Topic Category

1.6.1.2 Theme Keyword

biota

1.6.1.2 Theme Keyword

environment

1.6.1 Theme

1.6.1.1 Theme Keyword Thesaurus

None

1.6.1.2 Theme Keyword

Environmental Monitoring

1.6.1.2 Theme Keyword

ESI

1.6.1.2 Theme Keyword

Sensitivity maps

1.6.1.2 Theme Keyword

Coastal resources

1.6.1.2 Theme Keyword

Oil spill planning

1.6.1.2 Theme Keyword

Coastal Zone Management

1.6.1.2 Theme Keyword

Wildlife

1.6.1.2 Theme Keyword

Marine Mammal

1.6.2 Place

1.6.2.1 Place Keyword Thesaurus

None

1.6.2.2 Place Keyword

BSEE Gulf of Mexico

1.7 Access Constraints

None

1.8 Use Constraints

DO NOT USE MAPS FOR NAVIGATIONAL PURPOSES.

Management boundaries are not to be considered legal boundaries. Edges may have been altered for cartographic processes. 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.

Besides the above warnings, there are no use constraints on these data.

Acknowledgment of the originators, publishers, contributors, and sources listed would be appreciated in products derived from these data.

1.10 Browse Graphic

1.10.1 Browse Graphic File Name

datafig.jpg

1.10.2 Browse Graphic File Description

Depicts the relationships between spatial data layers and attribute data tables for the BSEE Gulf of Mexico ESI data.

1.10.3 Browse Graphic File Type

JPEG

1.11 Data Set Credit

This project was funded by the Bureau of Safety and Environmental Enforcement (BSEE), U.S. Department of the Interior. We want to acknowledge the great support by Bryan Rogers and John Caplis (BSEE), Gabrielle McGrath (RPS), NOAA Scientific Support Coordinators Dr. Paige Doelling, Adam Davis, and Brandi Todd, Brent Koza (TGLO), Timyn Rice (FWRI), and Michael Sams (USCG 8th District), all who assisted greatly in all aspects of the project’s completion.

The biological data included on the maps were provided by numerous individuals and agencies. The individuals and agencies are listed in detail throughout the introductory pages of the ESI atlas. Staff at these organizations contributed a vast amount of information to this effort, including first-hand expertise, publications, maps, and digital data.

At Research Planning, Inc. in Columbia, South Carolina, numerous scientific, GIS, and graphic staff were involved with different phases of the project. Mark White, GIS Director, and Christine Boring, Biology Dept. Manager, were co-Project Managers. The biological data were collected and compiled onto base maps by Lauren Szathmary, Christine Boring, and Jennifer Weaver. Lee Diveley, Katy Beckham, Mark White, and Jeff Dahlin processed and produced the GIS data and metadata. Katy Beckham, Jacqueline Michel, Christine Boring, and Laura Szathmary prepared the species profiles. Wendy Early produced the final documents.

1.13 Native Data Set Environment

The software packages used to develop the atlas are Environmental Systems Research Institute's ArcGIS for Desktop(R), ArcPro(R), and SQL SERVER(R). The hardware configuration is PC's with Microsoft Windows Operating System.

The following Geodatabase Feature Classes are included in the data set: aoi, benthic, benthicpt, birds, fish, herp, invert, and m\_mammal. Associated relational and desktop data tables are bio\_lut, biocomb, biores, breed, seasonal, sources, species, and status.

2.0 Data Quality Information

2.1 Attribute Accuracy

2.1.1 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, 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.

2.2 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, and SQL SERVER(R) to ArcGIS(R) consistencies. A final review is made by the ESI manager, where the data are written to CD-ROM and the metadata are written. In the process of checking for topological and database consistencies, new ID's and RARNUM's or HUNUM's are also generated, while retaining the original RARNUM or HUNUM stored as MAPRAR and MAPHUN, respectively. 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.

2.3 Completeness Report

These data represent a synthesis of expert knowledge, available documents, survey and model data, and digital data on marine mammal distribution and concentration areas. These data do not necessarily represent all marine mammal occurrences in BSEE Gulf of Mexico. The following species are included in this data set: (Species\_ID, Common Name, Scientific Name [n/a if not applicable]): 17, Bottlenose dolphin, Tursiops truncatus; 21, Atlantic spotted dolphin, Stenella frontalis; 46, Risso's dolphin, Grampus griseus; 48, Sperm whale, Physeter macrocephalus; 49, Pantropical spotted dolphin, Stenella attenuata; 50, Spinner dolphin, Stenella longirostris; 100, Striped dolphin, Stenella coeruleoalba; 112, Clymene dolphin, Stenella clymene; 114, Kogia spp., Kogia spp.; 115, Rice's Whale, Balaenoptera ricei; 1006, Pilot whales, Globicephala spp.; 1007, Beaked whales, n/a; 1008, Blackfish, n/a.

2.4 Positional Accuracy

2.4.1 Horizontal Positional Accuracy

2.4.1.1 Horizontal Positional Accuracy Report

Spatial components for biological data layers can come from expert interviews, hardcopy, or digital sources. Some of the spatial components of the biological data layers may have been developed using regional experts who estimate concentration areas. It is difficult to estimate the positional accuracy of such data, except to state that they are compiled on hardcopy base maps with a scale of 1:1,000,000. Some of the spatial components of the biological data sets are developed from pre-existing digital or hardcopy sources and reflect the positional accuracy of these original data. 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. 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.

2.5 Lineage

Source\_Information

Source\_Citation:

Originator: BUREAU OF OCEAN ENERGY MANAGEMENT, NOAA SOUTHEAST FISHERIES SCIENCE CENTER, US FISH AND WILDLIFE SERVICE, US GEOLOGICAL SURVEY

Publication\_Date: 2022

Title: GULF OF MEXICO MARINE ASSESSMENT PROGRAM FOR PROTECTED SPECIES (GOMMAPPS) MARINE MAMMAL AND SEA TURTLE SPATIAL DENSITY MODEL OUTPUTS

Geospatial\_Data\_Presentation\_Form: VECTOR DIGITAL DATA

Online\_Linkage: https://www.ncei.noaa.gov/access/metadata/landing-page/bin/iso?id=gov.noaa.nodc:0256800

Type\_of\_Source\_Media: ONLINE

Source\_Time\_Period\_of\_Content:

Time\_Period\_Information:

Single\_Date/Time:

Calendar\_Date: 2022

Source\_Currentness\_Reference: DATE OF ACCESS

Source\_Citation\_Abbreviation: NONE

Source\_Contribution: M\_MAMMAL INFORMATION

Source\_Information

Source\_Citation:

Originator: NICK FARMER, LANCE GARRISON, LIZ STRATTON (NOAA)

Publication\_Date: 2023

Title: MARINE MAMMALS, SEA TURTLES, AND FISH OF THE GULF OF MEXICO

Geospatial\_Data\_Presentation\_Form: EXPERT KNOWLEDGE

Other\_Citation\_Details: UNPUBLISHED

Type\_of\_Source\_Media: PERSONAL COMMUNICATION

Source\_Time\_Period\_of\_Content:

Time\_Period\_Information:

Single\_Date/Time:

Calendar\_Date: 2023

Source\_Currentness\_Reference: DATE OF COMMUNICATION

Source\_Citation\_Abbreviation: NONE

Source\_Contribution: M\_MAMMAL INFORMATION

Source\_Information

Source\_Citation:

Originator: NOAA FISHERIES (NICK FARMER ET AL.)

Publication\_Date: 2022

Title: PROTECTED SPECIES DATA LAYERS FOR THE U.S. GULF OF MEXICO

Geospatial\_Data\_Presentation\_Form: VECTOR DIGITAL DATA

Type\_of\_Source\_Media: EMAIL

Source\_Time\_Period\_of\_Content:

Time\_Period\_Information:

Range\_of\_Dates/Times:

Beginning\_Date: 2022

Ending\_Date: 2022

Source\_Currentness\_Reference: DATE OF ACCESS

Source\_Citation\_Abbreviation: NONE

Source\_Contribution: M\_MAMMAL INFORMATION

2.5.2 Process Step

2.5.2.1 Process Description

Two main sources of data were used to depict marine mammal distribution and seasonality for this data layer: 1) personal interviews with resource experts from NOAA and 2) published and unpublished reports and datasets. Marine mammals mapped in the atlas include cetaceans that are ESA-listed, MMPA-listed, or MMPA Strategic Stock. Species mapped include: Rice’s whale (FE), sperm whale (FE), Atlantic spotted dolphin, beaked whales (Ziphius spp. And Mesoplodon spp.), blackfish (false killer whale, pygmy killer whale, and melon-headed whale), Clymene dolphin, common bottlenose dolphin, Kogia whales (dwarf and pygmy sperm whales), pantropical spotted dolphin, pilot whale, Risso’s dolphin, spinner dolphin, and striped dolphin. Cetacean data were provided by NOAA Fisheries Species Conservation Branch. Source data consisted of a hexagonal grid indicating high and low use areas for each species, derived from Gulf of Mexico Marine Assessment Program for Protected Species (GOMMAPPS) spatial density model outputs.

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

2.5.2.3 Process Date

202302

2.5.2.6 Process Contact

2.5.2.6.2 Contact Organization Primary

2.5.2.6.1.2 Contact Organization

Bureau of Safety and Environmental Enforcement (BSEE), U.S. Department of the Interior

2.5.2.6.1.1 Contact Person

Bureau of Safety and Environmental Enforcement (BSEE), U.S. Department of the Interior Gulf of Mexico OCS Region Program Manager

2.5.2.6.4 Contact Address

2.5.2.6.4.1 Address Type

Physical address

2.5.2.6.4.2 Address

1201 Elmwood Park Blvd

2.5.2.6.4.3 City

New Orleans

2.5.2.6.4.4 State or Province

Louisiana

2.5.2.6.4.5 Postal Code

70123-2394

2.5.2.6.5 Contact Voice Telephone

(504) 736-0557

2.5.2.6.8 CONTACT ELECTRONIC MAIL ADDRESS

[eugene.oberry@bsee.gov](mailto:eugene.oberry@bsee.gov)

3.0 Spatial Data Organization Information

3.2 Direct Spatial Reference Method

Vector

3.3 Point and Vector Object Information

3.3.1 SDTS Terms Description

3.3.1.1 SDTS Point and Vector Object Type

GT-polygon composed of chains

3.3.1.2 Point and Vector Object Count

26

Spatial\_Reference\_Information:

Horizontal\_Coordinate\_System\_Definition:

Geographic:

Latitude\_Resolution: 0.000000001

Longitude\_Resolution: 0.000000001

Geographic\_Coordinate\_Units: Decimal degrees

Geodetic\_Model:

Horizontal\_Datum\_Name: North American Datum of 1983

Ellipsoid\_Name: Geodetic Reference System 80

Semi-major\_Axis: 6378137.000000

Denominator\_of\_Flattening\_Ratio: 298.257222

5.0 ENTITY AND ATTRIBUTE INFORMATION

Overview\_Description:

Entity\_and\_Attribute\_Overview:

In addition to the geographic data layers, six relational attribute or data tables, BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS, are used to store the complex biological data in the ESI data structure. The geographic data layer containing biological resource information (in this case, M\_MAMMAL) is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO\_LUT, or it can be linked directly using RARNUM. The ID is a unique combination of the atlas number (for the BSEE Gulf of Mexico atlas, the number is 86), 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 BIOCOMB, 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, RARNUM, MAPRAR, SEASON\_ID, NAME, GEN\_SPEC, S, F, STATE, S\_DATE, F\_DATE, CONC, MAPPING QUALIFIER, G\_SOURCE, S\_SOURCE, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC, NESTING, MIGRATING, MOLTING, HATCHING, SPAWNING, EGGS, LARVAE, JUVENILES, ADULTS, MATING, CALVING, PUPPING, and INTERNESTING. All these items are the same as their counterparts in the individual data tables described below, except the BREED1-BREED5 and BREED items. 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 BIOCOMB may be made through the BIO\_LUT, using ID to link to RARNUM, or BIOCOMB may be linked directly to the RARNUM in each of the geographic layer's attribute data tables.

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 BIOCOMB data table, and this data table is NOT described in detail below.

Entity\_and\_Attribute\_Detail\_Citation:

A complete description of entity types, attributes, and attribute values for ESI atlases can be found in the NOAA ESI Guidelines <https://response.restoration.noaa.gov/sites/default/files/ESI_Guidelines.pdf>

5.1 DETAILED DESCRIPTION

5.1.1 ENTITY TYPE

5.1.1.1 ENTITY TYPE LABEL

M\_MAMMAL

5.1.1.2 ENTITY TYPE DEFINITION

The M\_MAMMAL table contains attribute information for the vector polygons in this data set representing marine mammal distribution and concentration areas. Note that all attribute information is stored in a series of relational files, described below. See the Browse\_Graphic section for a link to the entity-relationship diagram, which describes the relationships between attribute tables in the ESI data structure.

5.1.1.3 ENTITY TYPE DEFINITION SOURCE

NOAA ESI Guidelines

5.1.2 ATTRIBUTE

5.1.2.1 ATTRIBUTE LABEL

ID

5.1.2.2 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 (86), element number (4), and record number.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE

NOAA ESI Guidelines

5.1.2.4 ATTRIBUTE DOMAIN VALUES

5.1.2.4.2 RANGE DOMAIN

5.1.2.4.2.1 RANGE DOMAIN MINIMUM

860100001

5.1.2.4.2.2 RANGE DOMAIN MAXIMUM

863817874

5.1.2 ATTRIBUTE

5.1.2.1 ATTRIBUTE LABEL

RARNUM

5.1.2.2 ATTRIBUTE DEFINITION

An identifier that links directly to the BIORES table or the flat format BIOCOMB table.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE

NOAA ESI Guidelines

5.1.2.4 ATTRIBUTE DOMAIN VALUES

5.1.2.4.2 RANGE DOMAIN

5.1.2.4.2.1 RANGE DOMAIN MINIMUM

8600001

5.1.2.4.2.2 RANGE DOMAIN MAXIMUM

8600256

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: NOAA ESI Guidelines

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 BIOCOMB data table.

Attribute\_Definition\_Source: NOAA

Attribute\_Domain\_Values:

Range\_Domain:

Range\_Domain\_Minimum: 8600001

Range\_Domain\_Maximum: 8600256

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 (86), element number (4), and record number.

Attribute\_Definition\_Source: NOAA

Attribute\_Domain\_Values:

Range\_Domain:

Range\_Domain\_Minimum: 860100001

Range\_Domain\_Maximum: 863817874

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: NOAA ESI Guidelines

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 BIOCOMB data table.

Attribute\_Definition\_Source: NOAA

Attribute\_Domain\_Values:

Range\_Domain:

Range\_Domain\_Minimum: 8600001

Range\_Domain\_Maximum: 8600256

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: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Range\_Domain:

Range\_Domain\_Minimum: 1

Range\_Domain\_Maximum: N

Attribute:

Attribute\_Label: CONC

Attribute\_Definition: The field CONC refers to "concentration," abundance, or density values. The field contains terms indicating areas of high or low use. High use areas as determined by model outputs were included in the atlas with the concentration ‘High use area’ and low use areas were included in the ESI data with the concentration ‘Low use area’. All species followed this scheme except for Rice’s whale, for which there was not enough data to designate high and low use areas. Rice’s whale is therefore mapped with a concentration of ‘Present’ throughout its range.

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

5.1.2.4.4 Unrepresentable Domain

Acceptable values change from atlas to atlas.

Attribute:

Attribute\_Label: MAPPING\_QUALIFIER

Attribute\_Definition: An indication of why this feature was mapped in the ESI.

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: CALVING

Enumerated\_Domain\_Value\_Definition: Calving

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: COLONY

Enumerated\_Domain\_Value\_Definition: Colony

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: CONCENTRATION AREA

Enumerated\_Domain\_Value\_Definition: Concentration Area

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: DENNING

Enumerated\_Domain\_Value\_Definition: Denning

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: GENERAL DISTRIBUTION

Enumerated\_Domain\_Value\_Definition: General Distribution

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: HARVEST AREA

Enumerated\_Domain\_Value\_Definition: Harvest Area

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: HAUL OUT

Enumerated\_Domain\_Value\_Definition: Haul Out

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: HAZARD

Enumerated\_Domain\_Value\_Definition: Hazard

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: HIGH ECOLOGICAL VALUE

Enumerated\_Domain\_Value\_Definition: High Ecological Value

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: MIGRATION

Enumerated\_Domain\_Value\_Definition: Migration

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: NESTING

Enumerated\_Domain\_Value\_Definition: Nesting

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: NURSERY AREA

Enumerated\_Domain\_Value\_Definition: Nursery Area

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: PUPPING

Enumerated\_Domain\_Value\_Definition: Pupping

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: RAFTING

Enumerated\_Domain\_Value\_Definition: Rafting

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: ROOSTING

Enumerated\_Domain\_Value\_Definition: Roosting

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: SPAWNING AREA

Enumerated\_Domain\_Value\_Definition: Spawning Area

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: THERMAL REFUGE

Enumerated\_Domain\_Value\_Definition: Thermal Refuge

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: VULNERABLE OCCURRENCE

Enumerated\_Domain\_Value\_Definition: Vulnerable Occurrence

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: WINTERING

Enumerated\_Domain\_Value\_Definition: Wintering

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

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: NOAA ESI Guidelines

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: NOAA ESI Guidelines

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: NOAA ESI Guidelines

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: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: BENTHIC

Enumerated\_Domain\_Value\_Definition: Benthic

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: BIRD

Enumerated\_Domain\_Value\_Definition: Birds

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: FISH

Enumerated\_Domain\_Value\_Definition: Fish

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: HABITAT

Enumerated\_Domain\_Value\_Definition: Habitats and plants

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: HERP

Enumerated\_Domain\_Value\_Definition: Reptiles and Amphibians

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: INVERT

Enumerated\_Domain\_Value\_Definition: Invertebrates

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: M\_MAMMAL

Enumerated\_Domain\_Value\_Definition: Marine Mammals

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: T\_MAMMAL

Enumerated\_Domain\_Value\_Definition: Terrestrial Mammals

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

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: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: E#####

Enumerated\_Domain\_Value\_Definition: Where E is the first character of ELEMENT (or ‘X’ in the case of BENTHIC and ‘R’ in the case of HERP) and the next five characters are SPECIES\_ID (e.g. ELEMENT = 'BIRD' and SPECIES\_ID = 1; EL\_SPE = 'B00001').

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

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: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: E#######

Enumerated\_Domain\_Value\_Definition: Where E is the first character of ELEMENT (or ‘X’ in the case of BENTHIC and ‘R’ in the case of HERP), the next five characters are SPECIES\_ID, and the last two characters are SEASON\_ID (e.g. ELEMENT = 'BIRD', SPECIES\_ID = 1 and SEASON\_ID = 1; EL\_SPE\_SEA = 'B0000101').

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

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: NOAA ESI Guidelines

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: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Range\_Domain:

Range\_Domain\_Minimum: 1

Range\_Domain\_Maximum: N

Attribute:

Attribute\_Label: NAME

Attribute\_Definition: Species common name for the entire ESI data set.

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

5.1.2.4.4 Unrepresentable Domain

Acceptable values change from atlas to atlas.

Attribute:

Attribute\_Label: GEN\_SPEC

Attribute\_Definition: Species scientific name for the entire ESI data set.

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

5.1.2.4.4 Unrepresentable Domain

Acceptable values change from atlas to atlas.

Attribute:

Attribute\_Label: ELEMENT

Attribute\_Definition: Major categories of biological data.

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: BENTHIC

Enumerated\_Domain\_Value\_Definition: Benthic

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: BIRD

Enumerated\_Domain\_Value\_Definition: Birds

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: FISH

Enumerated\_Domain\_Value\_Definition: Fish

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: HABITAT

Enumerated\_Domain\_Value\_Definition: Habitats and plants

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: HERP

Enumerated\_Domain\_Value\_Definition: Reptiles and Amphibians

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: INVERT

Enumerated\_Domain\_Value\_Definition: Invertebrates

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: M\_MAMMAL

Enumerated\_Domain\_Value\_Definition: Marine Mammals

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: T\_MAMMAL

Enumerated\_Domain\_Value\_Definition: Terrestrial Mammals

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute:

Attribute\_Label: SUBELEMENT

Attribute\_Definition: Element subgroup delineating a logical grouping of species

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

5.1.2.4.4 Unrepresentable Domain

Acceptable values change from atlas to atlas.

Attribute:

Attribute\_Label: GRANK

Attribute\_Definition: Global Rank of the species as defined by NatureServe

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Codeset\_Domain:

Codeset\_Name: NatureServe Global Conservation Status Ranks

Codeset\_Source: NatureServe

Attribute:

Attribute\_Label: GRANKDATE

Attribute\_Definition: Date the GRANK was assessed

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: YYYYMM

Enumerated\_Domain\_Value\_Definition: YYYY for year and optionally MM for month

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: 0

Enumerated\_Domain\_Value\_Definition: Date unspecified

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

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: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: E#####

Enumerated\_Domain\_Value\_Definition: Where E is the first character of ELEMENT (or ‘X’ in the case of BENTHIC and ‘R’ in the case of HERP) and the next five characters are SPECIES\_ID (e.g. ELEMENT = 'BIRD' and SPECIES\_ID = 1; EL\_SPE = 'B00001').

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

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: NOAA ESI Guidelines

Attribute:

Attribute\_Label: ELEMENT

Attribute\_Definition: Major categories of biological data.

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: BENTHIC

Enumerated\_Domain\_Value\_Definition: Benthic

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: BIRD

Enumerated\_Domain\_Value\_Definition: Birds

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: FISH

Enumerated\_Domain\_Value\_Definition: Fish

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: HABITAT

Enumerated\_Domain\_Value\_Definition: Habitats and plants

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: HERP

Enumerated\_Domain\_Value\_Definition: Reptiles and Amphibians

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: INVERT

Enumerated\_Domain\_Value\_Definition: Invertebrates

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: M\_MAMMAL

Enumerated\_Domain\_Value\_Definition: Marine Mammals

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: T\_MAMMAL

Enumerated\_Domain\_Value\_Definition: Terrestrial Mammals

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

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: NOAA ESI Guidelines

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: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Range\_Domain:

Range\_Domain\_Minimum: 1

Range\_Domain\_Maximum: N

Attribute:

Attribute\_Label: JAN

Attribute\_Definition: January

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: X

Enumerated\_Domain\_Value\_Definition: Present in January

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute:

Attribute\_Label: FEB

Attribute\_Definition: February

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: X

Enumerated\_Domain\_Value\_Definition: Present in February

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute:

Attribute\_Label: MAR

Attribute\_Definition: March

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: X

Enumerated\_Domain\_Value\_Definition: Present in March

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute:

Attribute\_Label: APR

Attribute\_Definition: April

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: X

Enumerated\_Domain\_Value\_Definition: Present in April

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute:

Attribute\_Label: MAY

Attribute\_Definition: May

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: X

Enumerated\_Domain\_Value\_Definition: Present in May

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute:

Attribute\_Label: JUN

Attribute\_Definition: June

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: X

Enumerated\_Domain\_Value\_Definition: Present in June

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute:

Attribute\_Label: JUL

Attribute\_Definition: July

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: X

Enumerated\_Domain\_Value\_Definition: Present in July

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute:

Attribute\_Label: AUG

Attribute\_Definition: August

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: X

Enumerated\_Domain\_Value\_Definition: Present in August

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute:

Attribute\_Label: SEP

Attribute\_Definition: September

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: X

Enumerated\_Domain\_Value\_Definition: Present in September

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute:

Attribute\_Label: OCT

Attribute\_Definition: October

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: X

Enumerated\_Domain\_Value\_Definition: Present in October

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute:

Attribute\_Label: NOV

Attribute\_Definition: November

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: X

Enumerated\_Domain\_Value\_Definition: Present in November

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute:

Attribute\_Label: DEC

Attribute\_Definition: December

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: X

Enumerated\_Domain\_Value\_Definition: Present in December

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

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: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: E#######

Enumerated\_Domain\_Value\_Definition: Where E is the first character of ELEMENT (or ‘X’ in the case of BENTHIC and ‘R’ in the case of HERP), the next five characters are SPECIES\_ID, and the last two characters are SEASON\_ID (e.g. ELEMENT = 'BIRD', SPECIES\_ID = 1 and SEASON\_ID = 1; EL\_SPE\_SEA = 'B0000101').

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

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: NOAA ESI Guidelines

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: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: E#######

Enumerated\_Domain\_Value\_Definition: Where E is the first character of ELEMENT (or ‘X’ in the case of BENTHIC and ‘R’ in the case of HERP), the next five characters are SPECIES\_ID, and the last two characters are SEASON\_ID (e.g. ELEMENT = 'BIRD', SPECIES\_ID = 1 and SEASON\_ID = 1; EL\_SPE\_SEA = 'B0000101').

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute:

Attribute\_Label: MON

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: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Range\_Domain:

Range\_Domain\_Minimum: 1

Range\_Domain\_Maximum: 12

Attribute:

Attribute\_Label: BREED1

Attribute\_Definition: Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED1 = nesting; if ELEMENT is "FISH" then BREED1 = spawning; if ELEMENT is "INVERT" then BREED1 = spawning; if ELEMENT is "HERP" then BREED1 = nesting; if ELEMENT is "M\_MAMMAL" then BREED1 = mating. This attribute is not used for BENTHIC, HABITAT, or T\_MAMMAL.

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: Y

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

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: N

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

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

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: NOAA ESI Guidelines

Attribute:

Attribute\_Label: BREED2

Attribute\_Definition: Life history stage or activity type, where: if ELEMENT is "BIRD" then BREED2 = migrating; if ELEMENT is "FISH" then BREED2 = eggs; if ELEMENT is "INVERT" then BREED2 = eggs; if ELEMENT is "HERP" then BREED2 = hatching; if ELEMENT is "M\_MAMMAL" then BREED2 = calving. This attribute is not used for BENTHIC, HABITAT, or T\_MAMMAL elements.

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: Y

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

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: N

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

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

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: NOAA ESI Guidelines

Attribute:

Attribute\_Label: BREED3

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

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: Y

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

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: N

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

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

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: NOAA ESI Guidelines

Attribute:

Attribute\_Label: BREED4

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

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: Y

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

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: N

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

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

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: NOAA ESI Guidelines

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

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: Y

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

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: N

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

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

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: NOAA ESI Guidelines

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: STATUS

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

Entity\_Type\_Definition\_Source: NOAA ESI Guidelines

Attribute:

Attribute\_Label: ELEMENT

Attribute\_Definition: Major categories of biological data.

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: BENTHIC

Enumerated\_Domain\_Value\_Definition: Benthic

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: BIRD

Enumerated\_Domain\_Value\_Definition: Birds

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: FISH

Enumerated\_Domain\_Value\_Definition: Fish

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: HABITAT

Enumerated\_Domain\_Value\_Definition: Habitats and plants

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: HERP

Enumerated\_Domain\_Value\_Definition: Reptiles and Amphibians

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: INVERT

Enumerated\_Domain\_Value\_Definition: Invertebrates

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: M\_MAMMAL

Enumerated\_Domain\_Value\_Definition: Marine Mammals

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: T\_MAMMAL

Enumerated\_Domain\_Value\_Definition: Terrestrial Mammals

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

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: NOAA ESI Guidelines

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: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Unrepresentable Domain

Acceptable values change from atlas to atlas.

Attribute:

Attribute\_Label: S

Attribute\_Definition: State threatened or endangered status.

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: E

Enumerated\_Domain\_Value\_Definition: Endangered on state list

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: T

Enumerated\_Domain\_Value\_Definition: Threatened on state list

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: C

Enumerated\_Domain\_Value\_Definition: Species of Special Concern

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: S

Enumerated\_Domain\_Value\_Definition: Threatened or endangered due to similarity of appearance

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: X

Enumerated\_Domain\_Value\_Definition: Experimental essential population

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute:

Attribute\_Label: F

Attribute\_Definition: Federal threatened or endangered status.

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: E

Enumerated\_Domain\_Value\_Definition: Endangered on federal list

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: T

Enumerated\_Domain\_Value\_Definition: Threatened on federal list

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: C

Enumerated\_Domain\_Value\_Definition: Species of Special Concern

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: S

Enumerated\_Domain\_Value\_Definition: Threatened or endangered due to similarity of appearance

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: X

Enumerated\_Domain\_Value\_Definition: Experimental essential population

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute:

Attribute\_Label: S\_DATE

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

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: YYYYMM

Enumerated\_Domain\_Value\_Definition: YYYY for year and optionally MM for month

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute:

Attribute\_Label: F\_DATE

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

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: YYYYMM

Enumerated\_Domain\_Value\_Definition: YYYY for year and optionally MM for month

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

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: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: E#####

Enumerated\_Domain\_Value\_Definition: Where E is the first character of ELEMENT (or ‘X’ in the case of BENTHIC and ‘R’ in the case of HERP) and the next five characters are SPECIES\_ID (e.g. ELEMENT = 'BIRD' and SPECIES\_ID = 1; EL\_SPE = 'B00001').

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

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: NOAA ESI Guidelines

Attribute:

Attribute\_Label: SOURCE\_ID

Attribute\_Definition: Source identifier that links records in the SOURCES data table to the items G\_SOURCE and A\_SOURCE in the SOC\_DAT table; G\_SOURCE and S\_SOURCE in the BIORES table; and SOURCE\_ID and ESI\_Source in the ESI and HYDRO data layers.

Attribute\_Definition\_Source: NOAA ESI Guidelines

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: NOAA ESI Guidelines

Attribute\_Domain\_Values:

5.1.2.4.4 Unrepresentable Domain

Acceptable values change from atlas to atlas.

Attribute:

Attribute\_Label: DATE\_PUB

Attribute\_Definition: Date of source material, publication, or date of personal communication with expert source.

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: YYYYMM

Enumerated\_Domain\_Value\_Definition: YYYY for year and optionally MM for month

Enumerated\_Domain\_Value\_Definition\_Source: NOAA ESI Guidelines

Attribute:

Attribute\_Label: TITLE

Attribute\_Definition: Title of source material or data.

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

5.1.2.4.4 Unrepresentable Domain

Acceptable values change from atlas to atlas.

Attribute:

Attribute\_Label: DATA\_FORMAT

Attribute\_Definition: The format of the source material.

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

5.1.2.4.4 Unrepresentable Domain

Acceptable values change from atlas to atlas.

Attribute:

Attribute\_Label: PUB\_PLACE

Attribute\_Definition: Publication place.

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

5.1.2.4.4 Unrepresentable Domain

Acceptable values change from atlas to atlas.

Attribute:

Attribute\_Label: PUBLISHER

Attribute\_Definition: Publisher.

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

5.1.2.4.4 Unrepresentable Domain

Acceptable values change from atlas to atlas.

Attribute:

Attribute\_Label: PUBLICATION

Attribute\_Definition: Additional citation information.

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

5.1.2.4.4 Unrepresentable Domain

Acceptable values change from atlas to atlas.

Attribute:

Attribute\_Label: ONLINE\_LINK

Attribute\_Definition: Online computer resource URL.

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

5.1.2.4.4 Unrepresentable Domain

Acceptable values change from atlas to atlas.

Attribute:

Attribute\_Label: SCALE

Attribute\_Definition: Description of the source scale.

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

5.1.2.4.4 Unrepresentable Domain

Acceptable values change from atlas to atlas.

Attribute:

Attribute\_Label: TIME\_PERIOD

Attribute\_Definition: Date(s) of data collection that the source material is based upon.

Attribute\_Definition\_Source: NOAA ESI Guidelines

Attribute\_Domain\_Values:

5.1.2.4.4 Unrepresentable Domain

Acceptable values change from atlas to atlas.

6.0 DISTRIBUTION INFORMATION

6.1 DISTRIBUTOR

6.1.1 CONTACT PERSON PRIMARY

6.1.1.1 CONTACT PERSON

Bureau of Safety and Environmental Enforcement (BSEE), U.S. Department of the Interior Gulf of Mexico OCS Region Program Manager

6.1.1.2 CONTACT ORGANIZATION

Bureau of Safety and Environmental Enforcement (BSEE), U.S. Department of the Interior

6.1.4 CONTACT ADDRESS

6.1.4.1 ADDRESS TYPE

Physical Address

6.1.4.2 ADDRESS

1201 Elmwood Park Blvd

6.1.4.3 CITY

New Orleans

6.1.4.4 STATE OR PROVINCE

Louisiana

6.1.4.5 POSTAL CODE

70123-2394

6.1.5 CONTACT VOICE TELEPHONE

(504) 736-0557

6.2 RESOURCE DESCRIPTION

Downloadable Data

6.3 DISTRIBUTION LIABILITY

Although these data have been processed successfully on a computer system at Research Planning, Inc., no warranty, expressed or implied, is made by BSEE, DOI regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. BSEE, DOI 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.

6.5 CUSTOM ORDER PROCESS

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

7.0 METADATA REFERENCE INFORMATION

7.1 METADATA DATE

202302

7.2 METADATA REVIEW DATE

202302

7.4 METADATA CONTACT

7.4.1 CONTACT PERSON PRIMARY

7.4.1.1 CONTACT PERSON

Bureau of Safety and Environmental Enforcement (BSEE), U.S. Department of the Interior Gulf of Mexico OCS Region Program Manager

7.4.1.2 CONTACT ORGANIZATION

Bureau of Safety and Environmental Enforcement (BSEE), U.S. Department of the Interior

7.4.3 CONTACT POSITION

Bureau of Safety and Environmental Enforcement (BSEE), U.S. Department of the Interior Gulf of Mexico OCS Region Program Manager

7.4.4 CONTACT ADDRESS

7.4.4.1 ADDRESS TYPE

Physical Address

7.4.4.2 ADDRESS

1201 Elmwood Park Blvd

7.4.4.3 CITY

New Orleans

7.4.4.4 STATE OR PROVINCE

Louisiana

7.4.4.5 POSTAL CODE

70123-2394

7.4.5 CONTACT VOICE TELEPHONE

(504) 736-0557

7.4.8 CONTACT ELECTRONIC MAIL ADDRESS

[eugene.oberry@bsee.gov](mailto:eugene.oberry@bsee.gov)

7.5 METADATA STANDARD NAME

Content Standards for Digital Geospatial Metadata

7.6 METADATA STANDARD VERSION

FGDC-STD-001-1998