DELAWARE, NEW JERSEY, PENNSYLVANIA ENVIRONMENTAL SENSITIVITY INDEX METADATA

November 2000

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FILE DESCRIBES: Digital data for 1996 Delaware, New Jersey, Pennsylvania Environmental Sensitivity Index.

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COMMENTS: Information was developed using the U.S. Federal Geographic Data Committee's Content Standards for Digital Geospatial Metadata, June 8, 1994. The numbering scheme matches the Metadata Standard in order to facilitate referencing definitions of the elements. The items in **bold** are required elements and the others are optional elements. The Spatial Data Transfer Standard (SDTS), ver. 03/92, was referenced to properly identify the geographic entities.

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1.0. IDENTIFICATION INFORMATION

1.1. CITATION

1.1.1. ORIGINATOR:

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

1.1.2. PUBLICATION DATE:

200011

1.1.4. TITLE:

Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Delaware, New Jersey, Pennsylvania

1.1.5. EDITION:

First

1.1.6. GEOSPATIAL DATA PRESENTATION FORM:

Atlas

1.1.7. SERIES INFORMATION

1.1.7.1. SERIES NAME:

None

1.1.7.2. ISSUE IDENTIFICATION:

Delaware, New Jersey, Pennsylvania

1.1.8. PUBLICATION INFORMATION

1.1.8.1. PUBLICATION PLACE:

Seattle, Washington

1.1.8.2. PUBLISHER:

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

1.1.9. 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 and the States of Delaware, New Jersey, and Pennsylvania

1.1.11. LARGER WORK CITATION:

None

1.2. DESCRIPTION

1.2.1. ABSTRACT:

This data set comprises the Environmental Sensitivity Index (ESI) maps for the shorelines of Delaware, Delaware Bay, Delaware River, and New Jersey. ESI data characterize 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

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

1.3.1. TIME PERIOD INFORMATION

1.3.1.3. RANGE OF DATES/TIMES:

The intertidal habitats were mapped during overflights conducted 10-17 April 1995. The biological and human-use resources data were compiled by regional biologists in 1995. The dates for these data vary and are documented in Section 2.5.1

1.4. STATUS

1.4.1. PROGRESS:

Complete

1.4.2. MAINTENANCE AND UPDATE FREQUENCY:

None planned

1.5. SPATIAL DOMAIN

1.5.1. BOUNDING COORDINATES

1.5.1.1. WEST BOUNDING COORDINATE:

-75.75°

1.5.1.2. EAST BOUNDING COORDINATE:

-74°

1.5.1.3. NORTH BOUNDING COORDINATE:

40.25°

1.5.1.4. SOUTH BOUNDING COORDINATE:

38.375°

1.6 KEYWORDS

1.6.1. THEME

1.6.1.1. THEME KEYWORD THESAURUS:

None

1.6.1.2. THEME KEYWORD:

Sensitivity maps; ESI; coastal resources; oil spill planning; and coastal zone management

1.6.2. PLACE

1.6.2.1. THESAURUS:

None

1.6.2.2. PLACE KEYWORD:

Maryland / Delaware border to Mid-Barnegat Bay; including the Delaware River up to Trenton, New Jersey

1.7. ACCESS CONSTRAINTS:

None

1.8. USE CONSTRAINTS:

DO NOT USE ESI MAPS FOR NAVIGATIONAL PURPOSES.
Besides the above warning, there are no use constraints on these data. Acknowledgment of the publishers and contributing sources listed in 1.11. would be appreciated in products derived from these data

1.11. 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 and the States of Delaware, New Jersey, and Pennsylvania

1.13. NATIVE DATA SET ENVIRONMENT:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO® (version 7.0.3) and ORACLE® RDBMS (version 6.0.36.1.1). The hardware configuration is Hewlett Packard work-stations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.09.01). The following files are included in the data set:

bio_lut.e00	biofile.e00	biores.e00
birds.e00	breed.e00	breed_dt.e00
esi.e00	fish.e00	habitats.e00
hab_pt.e00	hydro.e00	index.e00
invert.e00	mgt.e00	m_mammal.e00
nests.e00	reptile.e00	seasonal.e00
soc_dat.e00	soc_lut.e00	socecon.e00
sources.e00	species.e00	status.e00
t_mammal.e00		

The entire data set is approximately 77 megabytes.

2.0. DATA QUALITY INFORMATION

2.1. ATTRIBUTE ACCURACY

2.1.1. ATTRIBUTE ACCURACY REPORT:

The attribute accuracy is estimated to be "good" given the years of ESI experience, the data input methodology, the quality control review sessions, and the digital logical consistency checks.

2.2. LOGICAL CONSISTENCY REPORT:

The digitization of shoreline types, biological resources, and human-use resources is a complex and highly quality-controlled process. Existing digital shoreline and wetlands data are integrated into a study-wide basemap. In order to facilitate digitizing, the entire study area is split into individual quadrangles using the INDEX data layer. The first layer of information digitized is the ESI shoreline classification. The ESI habitat ranking is compiled onto 1:24,000 USGS topographic quadrangles by a geomorphologist. The hardcopy maps are then digitized and checked, using both on-screen and hardcopy reviews. The edited maps are updated, checked once again for completeness and topological and logical consistency. Any errors in the shoreline classification are updated prior to digitization of the biological and human-use layers. All layers use the shoreline as the geographic reference so that there are no slivers in the geographic coordinates.

The hardcopy biological information is compiled onto 1:24,000 USGS topographic quadrangles by a biological expert using data from regional specialists in the form of maps, tables, charts, written descriptions of wildlife distributions, and personal interviews. Concurrently, digital data sources are imported, projected, checked for quality control, and integrated into the data structure. The hardcopy data are digitized, checked using both digital and on-screen procedures, integrated with existing data, plotted, and sent out for review by the regional specialists. The edited maps are updated, checked once again, and the final product plotted (at approximately 1:50,000 scale). A team of specialists reviews the entire series of maps, checks all data, and makes final edits. The data are then merged to form the study-wide layers. The data merging includes a final quality control check where labels, chains, and polygons are checked for attribute accuracy.

To finalize the data checking process, each coverage is checked using a standardized form by two GIS personnel (a technician and the GIS manager), and each attribute database is checked using several programs that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and ORACLE® to ARC/INFO® consistencies. A final review is made by the GIS manager, where the data are written to tape and the metadata are written.

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

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 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. Section 3.0, outlining Spatial Data Organization, refers to the source files in ARC export format only.

2.3. COMPLETENESS REPORT:

Shoreline Habitat Mapping:

The shoreline habitats of Delaware, New Jersey, and Pennsylvania were characterized as to their sensitivity to oil spills using a shoreline classification

system which has been used by NOAA for all ESI maps nationwide. Prediction of the behavior and persistence of oil on intertidal habitats is based on an understanding of the dynamics of the coastal environments, not just the substrate type and grain size. The vulnerability of a particular habitat is an integration of the following factors:

1) Shoreline type (substrate, grain size, tidal elevation, origin)
2) Exposure to wave and tidal energy
3) Biological productivity and sensitivity
4) Ease of cleanup

All of these factors are used to determine the relative sensitivity of intertidal habitats. Key to the sensitivity ranking is an understanding of the relationships between: physical processes, substrate, shoreline type, product type, fate and effect, and sediment transport patterns. 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.

These concepts have been used in the development of the ESI, which ranks shoreline environments as to their relative sensitivity to oil spills, potential biological injury, and ease of cleanup. 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.

Sensitive Biological Resources:

Regional biologists compiled the biological data. These data denote the key biological resources that are most likely at risk in the event of an oil spill. Seven major categories, or ELEMENTS, of biological resources were considered during data compilation: birds, fish, invertebrates, habitats, marine mammals, reptiles / amphibians, and terrestrial mammals.

There are six attribute tables, or data tables, BIORES, SEASONAL, SPECIES, SOURCES, STATUS, and BREED, that are used to store the complex biological data (Fig. 1). Each biological coverage (BIRDS, FISH, M_MAMMALS, INVERT, REPTILES, and T_MAMMAL) is linked to the Biological Resources

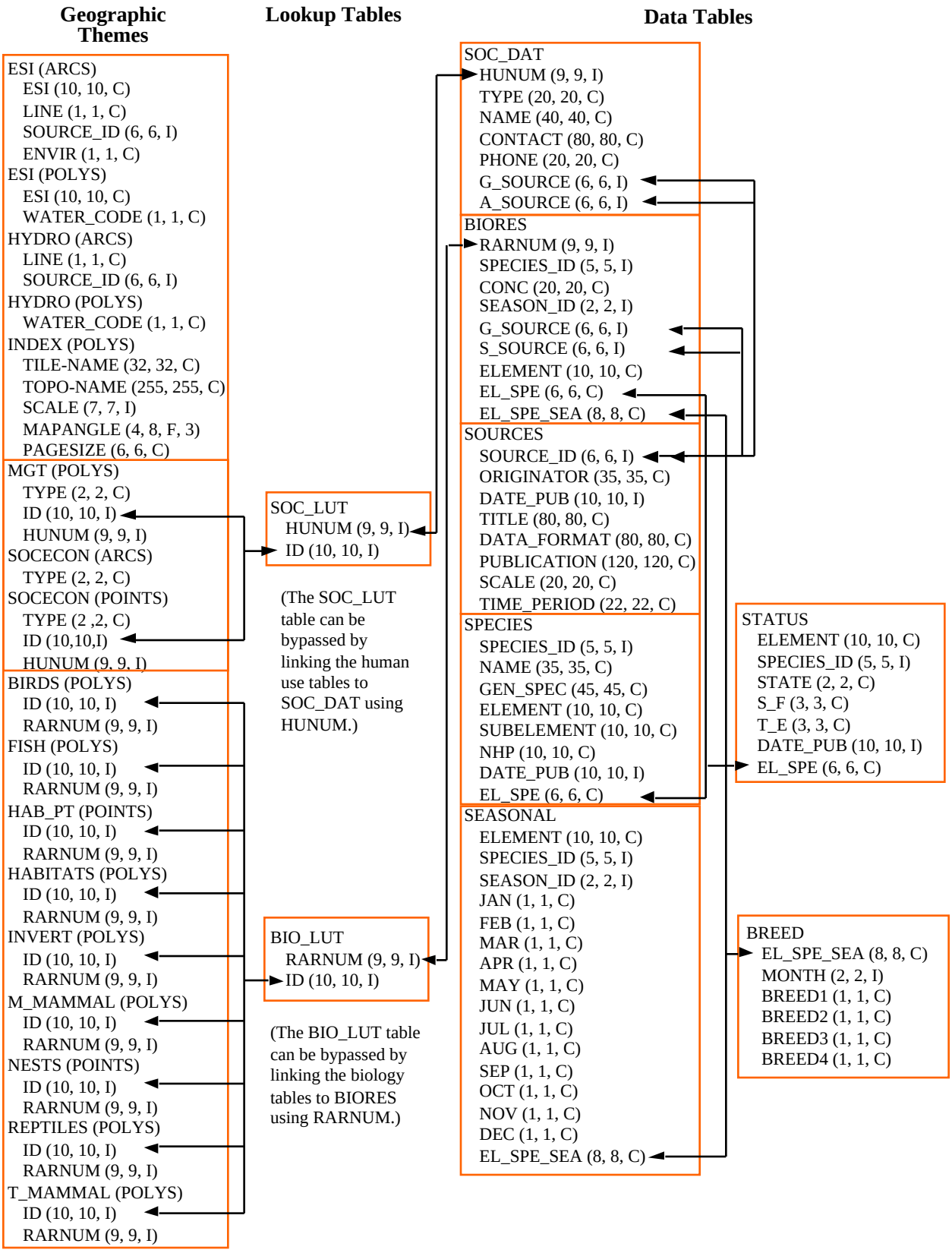

FIGURE 1. Relationship between biology data layers and attribute files.

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 this atlas, this is 12), an element 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.]

The items in BIORES include: RARNUM, SPECIES_ID, CONC, SEASON_ID, G_SOURCE, S_SOURCE, ELEMENT, EL_SPE, and EL_SPE_SEA. SPECIES_ID is the numeric identifier of each species and is unique within each ELEMENT. CONC is the concentration of the species and can be LOW, MEDIUM, HIGH, SPARSE, RARE, OCCASIONAL, or COMMON for all coverages except NESTS, which may have a value for the number of birds, nests, or pairs, and BIRDS, which may have a number range for the number of individuals present. SEASON_ID contains a numeric identifier for the unique monthly presence and life history characteristics of each species at a given location. There can be one seasonality record per species, or the same species can have different monthly presence or breeding activities at different sites. When this occurs, a new record with a different SEASON_ID is referenced.

G_SOURCE contains the SOURCE_ID for geographic information and S_SOURCE contains the SOURCE_ID for seasonality information. Both items link to the SOURCES data table. EL_SPE is a concatenation of ELEMENT and SPECIES_ID and links to other data tables (primarily the SPECIES table) and EL_SPE-SEA is a concatenation of ELEMENT, SPECIES_ID, and SEASON_ID and links to the SEASONAL and BREED data tables.

The SPECIES data table contains the SPECIES_ID (described above), common name (NAME), scientific name (GEN_SPEC), date the list of Natural Heritage Program (NHP) ranks was published (DATE_PUB), biological element (ELEMENT), biological subelement (SUBELEMENT), and the NHP global conservation status rank. The item SUBELEMENT refers to the grouping of the species. The SUBELEMENTS, by ELEMENT, included in this atlas are:

ELEMENT	SUBELEMENT
BIRD	diving
	gull_tern
	raptor
	shorebird
	wading
	waterfowl
FISH	anadromous
	special
INVERT	cephalopod
	clam
	crab
	gastropod
	lobster
	oyster
HABITAT	sav (submerged aquatic vegetation)
	shrub
MARINE MAMMAL	dolphin
	seal
	whale
REPTILE	turtle
TERRESTRIAL MAMMAL	mustelid
	rodent

The STATUS data table contains records for each species that is threatened or endangered on state or federal lists. The items include: ELEMENT, SPECIES_ID, STATE (two-letter state abbreviations), S_F (state or federal status), T_E (threatened or endangered status), DATE_PUB (the date the atlas was published when the given state and federal listings were in effect), and EL_SPE.

The SEASONAL data table indicates the presence of a particular species in a particular location by month (JAN-DEC). The BIORES table is linked to the SEASONAL table using the item EL_SPE_SEA (a concatenation of the first letter of the ELEMENT, SPECIES_ID, and SEASON_ID).

The BREED data table contains the life stage or life history data for each unique combination of ELEMENT, SPECIES_ID, and SEASON_ID (or EL_SPE_SEA). It contains up to 12 records corresponding to each month of

the year that a species is present in that location. The categories of the items BREED1 through BREED4 for each element are:

ELEMENT	BREED 1	BREED 2	BREED 3	BREED 4
BIRD	nesting	laying	hatching	fledging
FISH	spawning	outmigration	larvae/ juvenile	
INVERT	spawning	larvae/ juvenile	mating	
M_MAMMAL	mating	calving	pupping	molting
REPTILE	nesting	hatching	internesting	

NOTE: There are no BREED variables for HABITATS or T_MAMMALS.

The SOURCES data table contains metadata for each biological and human-use source listed in the ESI atlas. The items in SOURCES are: SOURCE_ID, ORIGINATOR (author), DATE_PUB (date of publication), TITLE (title of the data set), DATA_FORMAT (digital type, hardcopy maps, etc.), PUBLICATION (additional citation), SCALE (source scale denominator), and TIME_PERIOD (beginning and ending dates of original data collection). The SOURCES data table is linked to all biological and human-use data at the feature-level.

Due to the complexity of the relational database model, the biological data items are post processed into a flat file format. This file is entitled BIOFILE and it may be used in place of the relational files 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, RARNUM, G_SOURCE, S_SOURCE and BREED. All of these items are the same as their counterparts in the individual files described above, except the BREED1–BREED4 items. BREED is a newly generated variable used to link to the BREED_DT file, a modified, more compact version of the aforementioned BREED file. BREED1–BREED4 give a text summary of when each life stage occurs within that polygon. The life stages referred to are the same as those listed in the previous table. The link to the BIOFILE may be made through BIO_LUT using ID to link to RARNUM, or it may be linked directly to the RARNUM in each of the biology cover's attribute files. As mentioned, BREED_DT is an auxiliary support file 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 file is SOURCES. This is the same as the SOURCES 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 files.

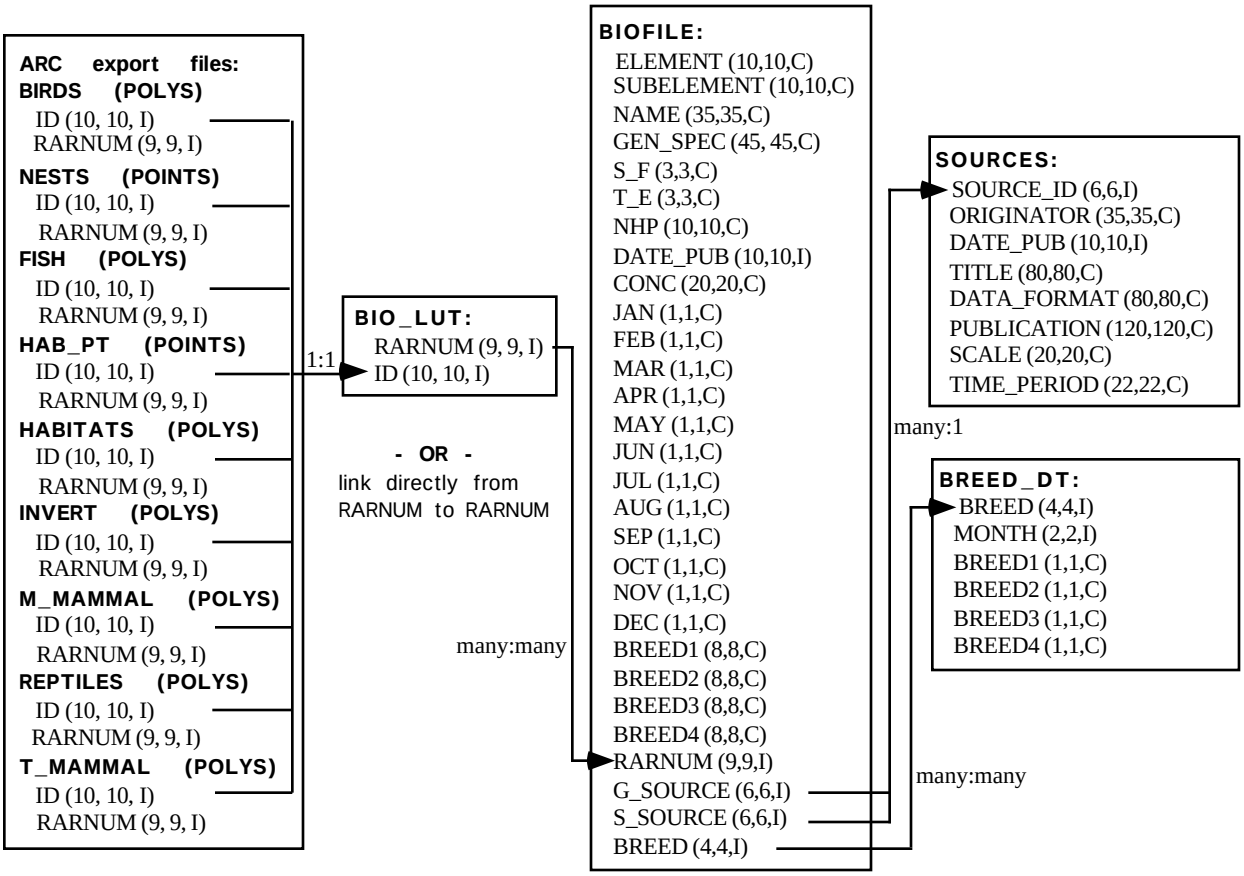

FIGURE 2. Relationship of the BIOFILE to the biological covers and the supplementary BREED_DT and SOURCES data tables.

Human-Use Resources:

Several human-use, or socioeconomic, features are included in ESI atlases. Entity points and complete chains (arcs) are digitized into the data layer SOCECON and managed area polygonal data are stored in the MGT data layer. Both data sets are linked to the data table SOC_DAT using the SOC_LUT

lookup table and the items HUNUM and ID. HUNUM is a unique reference number concatenated with the atlas number (12). ID is a concatenation of atlas number (12), element number (SOCECON = 10 and MGT = 11), and unique record number.

All features are attributed using the item TYPE and identify the type of feature:

Entity Points	
Feature	**TYPE**
Access	A2
Airport	A
Archaeological Site	AS
Boat Ramp	BR
Coast Guard	CG
Ferry	F
Historical Site	HS
Marina	M
Recreational Fishing	RF
Water Intake	WI
Complete Chains	
Feature	**TYPE**
State Border	SB

Polygons	
Feature	**TYPE**
State Park	P
Wildlife Refuge	WR

The table SOC_DAT contains the human-use number (HUNUM), feature type (TYPE), name of the facility (NAME), contact person (CONTACT), telephone number (PHONE), geographic source (G_SOURCE), and attribute source (A_SOURCE).

2.4. POSITIONAL ACCURACY

2.4.1. HORIZONTAL POSITIONAL ACCURACY

2.4.1.1. HORIZONTAL POSITIONAL ACCURACY REPORT:

The ESI data uses USGS 1:24,000 topographic quadrangles as the base map. It is estimated that the ESI has a minimum mapping unit of 50 feet. The biological data sets are developed primarily using regional experts who estimate concentration areas. Unlike shorelines, which maintain relative spatial stability through time, the biological data by nature migrate across the landscape. Therefore, the 1:24,000 USGS quadrangles and 1:40,000 and 1:80,000 NOAA

navigational charts are used as a base map in gathering the data but the data have "fuzzy" boundaries which must be understood when utilizing this information.

2.5. LINEAGE

2.5.1. SOURCE INFORMATION:

Coverage or theme name: BIRDS

2.5.1.1. SOURCE CITATION

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denomi-nator	2.5.1.4 Source Time Period
Russell, Keith	1995	Personal knowledge	Hardcopy maps	Dept. of Ornithology, PHI Academy of Natural Sciences	24000	1995
Santner, et. al.	1992	Annotated List of the Birds of Pennsylvania	Book	Pennsylvania Biological Survey, Contrib. No. 4	N/A	1992
Gelvin-Innvaer, Lisa	1995	Personal knowledge	Hardcopy maps	Delaware Division of Fish and Wildlife	80000 40000	1995
Whittendale, Tom	1995	Personal knowledge	Hardcopy maps	Delaware Division of Fish and Wildlife	80000 40000	1995
Smith, Frank	1995	Bombay Hook National Wildlife Refuge Survey	Hardcopy maps	Bombay Hook National Wildlife Refuge	80000 40000	1995
Breden, Tom	1995	New Jersey Scorecard Sites	Digital maps	New Jersey Division of Parks and Forestry	24000	1995
Castelli, Paul	1995	Midwinter Waterfowl Survey	Digital Map	New Jersey Division of Fish, Game, and Wildlife	100000	1973-1995

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denomi-nator	2.5.1.4 Source Time Period
Harrison, Colin	1978	A Field Guide to the Nests, Eggs, and Nestlings of North American Birds	Book	Collins, New York, 416 pp.	N/A	N/A
Bellrose, Frank	1980	Ducks, Geese, and Swans of North America	Book	Wildlife Management Institute, Washington, DC, 540 pp.	N/A	N/A

2.5.1. SOURCE INFORMATION:

Coverage or theme name: ESI

2.5.1.1. SOURCE CITATION

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denomi-nator	2.5.1.4 Source Time Period
Marine Spill Response Corporation	N/A	ESI Shoreline	Digital complex chains	N/A	24000	1994
Research Planning, Inc.	N/A	ESI Shoreline	Digital complex chains	N/A	24000	1994
Research Planning, Inc.	N/A	ESI Shoreline	Hardcopy maps from overflight	N/A	24000	1995
New Jersey Department of Environmental Protection	N/A	ESI Shoreline	Digital complex chains	N/A	24000	1994

2.5.1. SOURCE INFORMATION:

Coverage or theme name: FISH

2.5.1.1. SOURCE CITATION

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denominator	2.5.1.4 Source Time Period
Kaufmann, Michael	1995	Personal knowledge	Hardcopy map	Pennsylvania Fish and Boat Commission	24000	1995
Byrne, Don	1995	Generalized Information on Fish and Shellfish Distributions	Hardcopy maps	New Jersey Bureau of Marine Fisheries, Nacote Creek Research Center	24000	1970-1995
New Jersey Division of Fish, Game, and Shellfish	1978	Studies of the Mullica River-Great Bay Area	Report	Misc. Report No. 26M, Final Report for Project 3-78-R-Land 2	N/A	1969-1970
Stone et al.	1994	Distribution and Abundance of Fishes and Marine Invertebrates in Mid Atlantic Estuaries	Book	ELMR Rept. No. 12, NOAA/NOS Strategic Assessment Division	N/A	Unknown
New Jersey Division of Fish, Game, and Shellfish	1979	The Studies of the Back Bay Systems in the Atlantic Ocean	Report	New Jersey Bureau of Marine Fisheries, Nacote Creek Research Center, Report No. 47M	N/A	1977

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denomi-nator	2.5.1.4 Source Time Period
Kennish, Michael and Richard Lutz	1984	Lecture Notes on Coastal and Estuarine Studies, Ecology of Barnegat Bay, New Jersey	Report	Springer-Verlag, New York	N/A	Unknown
Michels, Stew	1995	Personal knowledge	Hardcopy maps	Delaware Division of Fish and Wildlife	80000 40000	1995
Breese, Greg	1995	Delaware Bay Estuary Project	Digital maps	U.S. Fish and Wildlife Service	100000 24000	1995
Long, Douglas and William Figley	1982	Studies of the Great Egg Harbor River and Bay	Report, hardcopy map	NJDEPE, Div. of Fish, Game, and Shell-fisheries, Tech. Series 82-1, Marine Fisheries Adm. CNY00	166667	Unknown
McClain, Jr., J.F.		Upper Barnegat Estuarine System	Report	New Jersey Bureau of Marine Fisheries, Nacote Creek Research Center	N/A	1971-1972

2.5.1. SOURCE INFORMATION:

Coverage or theme name: HABITATS

2.5.1.1. SOURCE CITATION

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denominator	2.5.1.4 Source Time Period
Breden, Tom	1995	New Jersey Scorecard Sites	Digital maps	New Jersey Division of Parks and Forestry	24000	1995
Halavik, Tom	1994	New Jersey Shellfish and Eelgrass	Digital maps	U.S. Fish and Wildlife Service, SNE/NYB Coastal Ecosystem Program	17000 to 160000	1985-1989

2.5.1. SOURCE INFORMATION:

Coverage or theme name: HAB_PT

2.5.1.1. SOURCE CITATION

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denominator	2.5.1.4 Source Time Period
Broaddaus, Lynn	1996	Natural Heritage Database	Data tables	Delaware Division of Fish and Wildlife	N/A	1995

2.5.1. SOURCE INFORMATION:

Coverage or theme name: HYDRO

2.5.1.1. SOURCE CITATION

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denominator	2.5.1.4 Source Time Period
Marine Spill Response Corporation	N/A	ESI Shoreline	Digital complex chains	N/A	24000	1994

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denominator	2.5.1.4 Source Time Period
Research Planning, Inc.	N/A	ESI Shoreline	Digital complex chains	N/A	24000	1994
Research Planning, Inc.	N/A	ESI Shoreline	Hardcopy maps from overflight	N/A	24000	1995
New Jersey Department of Environmental Protection	N/A	ESI Shoreline	Digital complex chains	N/A	24000	1994

2.5.1. SOURCE INFORMATION:

Coverage or theme name: INDEX

2.5.1.1. SOURCE CITATION

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denominator	2.5.1.4 Source Time Period
Research Planning, Inc.	1995	Index for Delaware, New Jersey, and Pennsylvania ESI maps	Digital complex chains	Bill Holton, GIS Analyst	24000	1995

2.5.1. SOURCE INFORMATION:

Coverage or theme name: INVERT (formerly SHELLFSH)

2.5.1.1. SOURCE CITATION

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denominator	2.5.1.4 Source Time Period
Byrne, Don	1995	Generalized Information on Fish and Shellfish Distributions	Hardcopy maps	New Jersey Bureau of Marine Fisheries, Nacote Creek Research Center	24000	1970-1995

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denomi-nator	2.5.1.4 Source Time Period
Stone et.al	1994	Distribution and Abundance of Fishes and Marine Invertebrates in Mid Atlantic Estuaries	Book	ELMR Rept. No. 12, NOAA/NOS Strategic Assessment Division	N/A	Unknown
New Jersey Division of Fish, Game, and Shellfish	1978	Studies of the Mullica River-Great Bay Area	Report	Misc. Report No. 26M, Final Report for Project 3-78-R-Land 2	N/A	1969-1970
New Jersey Division of Fish, Game, and Shellfish	1979	The Studies of the Back Bay Systems in the Atlantic Ocean	Report	New Jersey Bureau of Marine Fisheries, Nacote Creek Research Center, Report No. 47M	N/A	1977
Kennish, Michael and Richard Lutz	1984	Lecture Notes on Coastal and Estuarine Studies, Ecology of Barnegat Bay, New Jersey	Report	Springer-Verlag, New York	N/A	Unknown
Long, Douglas and William Figley	1982	Studies of the Great Egg Harbor River and Bay	Report, hardcopy map	NJDEPE, Div. of Fish, Game and Shell-fisheries Tech. Series 82-1, Marine Fisheries Adm. CNY00	166667	Unknown
McClain, Jr., J.F.		Upper Barnegat Estuarine System	Report	New Jersey Bureau of Marine Fisheries, Nacote Creek Research Center	N/A	1971-1972

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denominator	2.5.1.4 Source Time Period
Tinnsman, Jeff	1995	Personal knowledge	Hardcopy maps	Delaware Division of Fish and Wildlife	80000 40000	1995
Breese, Greg	1995	Delaware Bay Estuary Project	Digital maps	U.S. Fish and Wildlife Service	100000 24000	1995
Halavik, Tom	1994	New Jersey Shellfish and Eelgrass	Digital maps	U.S. Fish and Wildlife Service, SNE/NYB Coastal Ecosystem Program	17000 to 160000	1985-1989

2.5.1. SOURCE INFORMATION:

Coverage or theme name: MGT

2.5.1.1. SOURCE CITATION

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denominator	2.5.1.4 Source Time Period
Thorton, Larry	1993	New Jersey Open Spaces Database	Digital maps	New Jersey Department of Environmental Protection and Energy, ORIM	24000	1972-1992
Breese, Greg	1995	Delaware Protected Lands	Digital map	U.S. Fish and Wildlife Service, Delaware Bay Estuary Program	24000	1994

2.5.1. SOURCE INFORMATION:

Coverage or theme name: M_MAMMAL

2.5.1.1. SOURCE CITATION

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denominator	2.5.1.4 Source Time Period
Logothetis, Elaine	1995	Personal knowledge	Hardcopy maps	Delaware Division of Fish and Wildlife	80000 40000	1995

2.5.1. SOURCE INFORMATION:

Coverage or theme name: NESTS

2.5.1.1. SOURCE CITATION

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denominator	2.5.1.4 Source Time Period
Gelvin-Innvaer, Lisa	1995	Personal knowledge	Hardcopy maps	Delaware Division of Fish and Wildlife	80000 40000	1995
Halavik, Tom	1990	Coastal Waterbird Colonies	Digital Tables	U.S. Fish and Wildlife Service, SNE/NYB Coastal Ecosystem Project	N/A	1989
Jenkins, Dave	1995	New Jersey Colonial Waterbirds	Digital maps	New Jersey Division of Fish, Game, and Wildlife	24000	1985-1989
Harrison, Colin	1978	A Field Guide to the Nests, Eggs, and Nestlings of North American Birds	Book	Collins, New York, 416 pp.	N/A	N/A

2.5.1. SOURCE INFORMATION:

Coverage or theme name: REPTILES

2.5.1.1. SOURCE CITATION

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denomi-nator	2.5.1.4 Source Time Period
Logothetis, Elaine	1995	Personal knowledge	Hardcopy maps	Delaware Division of Fish and Wildlife	80000 40000	1995
Gelvin-Innvaer, Lisa	1995	Personal knowledge	Hardcopy maps	Delaware Division of Fish and Wildlife	80000 40000	1995

2.5.1. SOURCE INFORMATION:

Coverage or theme name: SOCECON

2.5.1.1. SOURCE CITATION

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denomi-nator	2.5.1.4 Source Time Period
Michels, Stew	1995	Personal knowledge	Hardcopy maps	Delaware Division of Fish and Wildlife	80000 40000	1995
Thorton, Larry	1993	New Jersey Open Spaces Database	Digital maps	New Jersey Department of Environmental Protection and Energy, ORIM	24000	1972-1992
Clark, Cherie	1995	Delaware Coastal Site Inventory	Hardcopy map	Delaware Division of Parks and Recreation	24000	1995
Hummel, Tony	1995	Delaware Water Intakes and Public Boat Ramps	Hardcopy tables	Delaware Division of Air and Waste Management	N/A	1995

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denominator	2.5.1.4 Source Time Period
Pollack, Barry	1995	Pennsylvania Water Intakes, Boat Ramps, and Marinas	Hardcopy maps	Pennsylvania Fish and Boat Commission	24000	1995
Anderson, Ben	1996	Delaware Artificial Reefs	Hardcopy table	Delaware Department of Natural Resources and Environmental Control	N/A	1995
Carr, Kurt	1995	Pennsylvania Archeological Site Survey	Hardcopy maps	Pennsylvania Bureau for Historic Preservation	24000	1995
Gull, Jonathan	1995	New Jersey Archeological and Historical Sites	Hardcopy maps	New Jersey Office of Historic Protection	24000	1930-1995
U.S. Geological Survey	1995	USGS 7.5 minute topographic quadrangle series	Hardcopy maps	U.S. Geological Service, Reston, Va.	24000	1956-1993

2.5.1. SOURCE INFORMATION:

Coverage or theme name: T_MAMMAL

2.5.1.1. SOURCE CITATION

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denominator	2.5.1.4 Source Time Period
Whittendale, Tom	1995	Personal knowledge	Hardcopy maps	Delaware Division of Fish and Wildlife	80000 40000	1995

2.5.1.1.1 Originator	2.5.1.1.2 Publication Date	2.5.1.1.4 Title	2.5.1.1.6 Geospatial Data Presentation Form	2.5.1.1.8 Publication Information	2.5.1.2 Source Scale Denomi-nator	2.5.1.4 Source Time Period
Smith, Frank	1995	Bombay Hook National Wildlife Refuge Survey	Hardcopy maps	Bombay Hook National Wildlife Refuge	80000 40000	1995

2.5.2. PROCESS STEP

2.5.2.1. PROCESS DESCRIPTION:

The digitization of ESI, biological resources, and human-use resources is a complex and highly quality controlled process. In order to facilitate digitizing, the entire study area was split into individual quadrangles using a map index coverage. The first layer of information digitized was the ESI. A digital shoreline was obtained from MSRC and the New Jersey Department of Environmental Protection. Any errors in the shoreline classification were updated prior to digitization of the biological and human-use layers. All data use the shoreline as the geographic reference so that there are no slivers in the geographic layers. The biological information was compiled onto 1:24,000 USGS topographic quadrangles, 1:40,000 NOAA Navigational Charts, or 1:80,000 NOAA Navigational Charts by an in-house biological expert using the data from regional specialists in the form of verbal discussions, maps, tables, charts, and written descriptions of wildlife distributions. The data were digitized, checked using both digital and on-screen procedures, plotted, and sent out for review by the regional specialists. The edited maps were updated on the computer, checked once again, and plotted at final map scale. A team of specialists reviewed the entire series of maps, checked all data, and made final edits. The data were merged to form the study-wide layers that are described in this document. The data merging included a final quality control check where topological consistency,

rules for geography, and database to geography were checked and reported to the GIS manager.

2.5.2.3. PROCESS DATE:
199608

2.5.2.6. PROCESS CONTACT

2.5.2.6.1. CONTACT PERSON PRIMARY

2.5.2.6.1.1. CONTACT PERSON:
Jill Petersen

2.5.2.6.1.2. CONTACT ORGANIZATION:
NOAA, Office of Response and Restoration

2.5.2.6.3. CONTACT POSITION:
GIS 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:
7600 Sand Point Way N.E.

2.5.2.6.4.3. CITY:
Seattle

2.5.2.6.4.4. STATE OR PROVINCE:
WA

2.5.2.6.4.5. POSTAL CODE:
98115-6349

2.5.2.6.5. CONTACT VOICE TELEPHONE:
(206) 526-6944

2.5.2.6.7. CONTACT FACSIMILE TELEPHONE:
(206) 526-6329

2.5.2.6.8. CONTACT ELECTRONIC MAIL ADDRESS:
jill_petersen@hazmat.noaa.gov.us

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, and

3.3.1.2. POINT AND VECTOR OBJECT COUNT:

Theme	Universe Polygon	GT-Polygons	Area Points	Complete Chains	Line Segments	Label Points	Entity Points	Nodes
BIRDS	1	316	316	916	146,186			660
ESI	1	2,114	2,114	10,013	353,041			9,631
FISH	1	1,098	1,098	1,808	278,617			1,638
HAB_PT							15	
HABITATS	1	166	166	278	20,274			233
HYDRO	1	2,075	2,075	6,128	340,421	0		5,924
INDEX	1	64	64	178	178			115
INVERT	1	1,676	1,676	2,716	318,558			2,341
MGT	1	463	463	520	63,602			501
M_MAMMAL	1	61	61	240	68,047			231
NESTS							201	
REPTILES	1	49	49	156	43,838			155
SOCECON				4	846		1,391	6
T_MAMMAL	1	12	12	82	23,868			78

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4.0. SPATIAL REFERENCE INFORMATION

4.1. HORIZONTAL COORDINATE SYSTEM DEFINITION

4.1.1. GEOGRAPHIC

4.1.1.1. LATITUDE RESOLUTION:

0.00005

4.1.1.2. LONGITUDE RESOLUTION:

0.00005

4.1.1.3 GEOGRAPHIC COORDINATE UNITS

Decimal Degrees

4.1.4. GEODETIC MODEL

4.1.4.1. HORIZONTAL DATUM NAME:

North American Datum of 1927

4.1.4.2. ELLIPSOID NAME:

Clarke, 1866

4.1.4.3. SEMI-MAJOR AXIS:

6,378,206.4

4.1.4.4. DENOMINATOR OF FLATTENING RATIO:

294.98

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5.0. ENTITY AND ATTRIBUTE INFORMATION

5.1. DETAILED DESCRIPTION: BIO_LUT

Lookup table to link biology coverages to the BIORES data table.

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
Attributes	RARNUM	integer
	ID	integer

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:
RARNUM

5.1.2.2. ATTRIBUTE DEFINITION:
An identifier that links the BIO_LUT table to the BIORES table

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
ID

5.1.2.2. ATTRIBUTE DEFINITION:
An identifier that links the biology coverages to the BIO_LUT table

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

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5.1. DETAILED DESCRIPTION: BIOFILE

The data table BIOFILE is a flat file format that provides all of the biology attributes contained in the relational data tables when used in conjunction with the supplementary tables BREED_DT and SOURCES.

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
Attributes	ELEMENT	character
	SUBELEMENT	character
	NAME	character
	GEN_SPEC	character
	S_F	character
	T_E	character
	NHP	character
	DATE_PUB	integer
	CONC	character
	JAN	character
	FEB	character
	MAR	character
	APR	character
	MAY	character
	JUN	character
	JUL	character
	AUG	character
	SEP	character
	OCT	character
	NOV	character
	DEC	character
	BREED1	character
	BREED2	character
	BREED3	character
	BREED4	character
	RARNUM	integer
	G_SOURCE	integer
	S_SOURCE	integer
	BREED	integer

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ELEMENT

5.1.2.2. ATTRIBUTE DEFINITION:

Major categories of biological data

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
BIRD	Birds
FISH	Fish
HABITAT	Habitats and Rare Plants
INVERT	Invertebrates
M_MAMMAL	Marine Mammals
REPTILE	Reptiles and Amphibians
T_MAMMAL	Terrestrial Mammals

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

SUBELEMENT

5.1.2.2. ATTRIBUTE DEFINITION:

Species subgroup

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

anadromous
cephalopod
clam
crab
diving
dolphin
gastropod
gull_tern

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

lobster
mustelid
oyster
raptor
rodent
sav (submerged aquatic vegetation)
seal
shorebird
shrub
special
turtle
wading
waterfowl
whale

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

NAME

5.1.2.2. ATTRIBUTE DEFINITION:

Species common name

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Alewife
American coot
American cupscale
American oyster (eastern)
American oystercatcher
American shad
American wigeon
Atlantic croaker
Atlantic herring
Atlantic menhaden

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Atlantic sturgeon
Atlantic white-sided dolphin
Awl-leaved rush
Bald eagle
Bald eagle
Bartons St. Johns-wort
Bay anchovy
Black drum
Black duck
Black seabass
Black skimmer
Black tern
Black-based quillwort
Black-crowned night heron
Black-fruited spikerush
Blue crab
Blueback herring
Bluefish
Blue-winged teal
Bog asphodel
Bottlenose dolphin
Boykins lobelia
Brant
Brittons spikerush
Brown pelican
Brydes whale
Bufflehead
Bur-marigold
Canada goose
Canvasback
Cattle egret
Channel catfish
Channeled whelk
Clustered beaked rush
Coast flatsedge
Common dolphin
Common eider
Common goldeneye
Common merganser

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Common moorhen
Common tern
Cut-leaved water-milfoil
Cypress-swamp sedge
Diamondback terrapin
Double-crested cormorant
Dwarf sperm whale
Eelgrass
Featherfoil
Fin whale
Fin whale
Floating pennywort
Fog fruit
Forsters tern
Gadwall
Glade spurge
Glossy ibis
Goldeneye
Grass-like beaked rush
Gray seal
Great black-backed gull
Great blue heron
Great cormorant
Great egret
Greater scaup
Greater yellowlegs
Green sea turtle
Green-backed heron
Green-winged teal
Gull-billed tern
Gulls
Harbor porpoise
Harbor seal
Harp seal
Herring gull
Hooded merganser
Hooded seal
Horseshoe crab
Humpback whale

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Humpback whale
Kemps ridley sea turtle
Kemps ridley sea turtle
King rail
Knieskerns beaked rush
Knobbed whelk
Koehns tooth-cup
Lace-lip ladies-tresses
Largemouth bass
Larger buttonweed
Laughing gull
Least bittern
Least sandpiper
Least tern
Lesser bladderwort
Lesser scaup
Lesser yellowlegs
Little blue heron
Loggerhead sea turtle
Loggerhead sea turtle
Long-finned pilot whale
Longs bulrush
Mallard
Merganser
Mink
Minke whale
Minute duckweed
Mudweed
Muskrat
Mute swan
New Jersey rush
Northern harrier
Northern kingfish
Northern lobster
Northern pintail
Northern quahog (hard clam)
Northern raccoon
Northern right whale
Northern right whale

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Northern shoveler
Oldsquaw
Osprey
Peregrine falcon
Peregrine falcon
Pied-billed grebe
Pine Barren boneset
Piping plover
Piping plover
Porgy (scup)
Pumpkin Ash
Puttyroot
Pygmy sperm whale
Rare-flowering beaked rush
Red goosefoot
Redhead
Ring-billed gull
Ring-necked duck
Rissos dolphin
River otter
Robin-run-away
Roseate tern
Rough cottongrass
Rough flatsedge
Rough-toothed dolphin
Ruddy duck
Salt marsh bulrush
Scaup
Scoter
Seabeach amaranth
Sea-beach milkwort
Seaside alder
Seaside crowfoot
Sea-side evening primrose
Seatrout (weakfish)
Sei whale
Sei whale
Semipalmated sandpiper
Shorebirds

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Shortfin pilot whale
Short-fruited rush
Shortnose sturgeon
Shortnose sturgeon
Shortnose sturgeon
Slender water-milfoil
Small yellow pond lily
Small-headed beaked rush
Snow goose
Snowy egret
Snowy orchid
Solitary sandpiper
Sora rail
Sperm whale
Spot
Spotted sandpiper
Squid
Squirrel (red) hake (ling)
Stenellid dolphin
Stinking fleabane
Stout smartweed
Striped bass
Summer flounder
Surf scoter
Swamp-pink
Tautog
Terns
Thread-leaved beaked rush
Tricolored heron
Twisted spikerush
Virginia joint-vetch
Virginia rail
Virginia thistle
Wading birds
Walters St. Johns-wort
Water oak
Waterfowl
Whistling swan (tundra swan)
White perch

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

White-winged scoter
Whorled nut rush
Winter flounder
Wood duck
Wrinkled jointgrass
Yellow perch
Yellow-crowned night heron

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

GEN_SPEC

5.1.2.2. ATTRIBUTE DEFINITION:

Species scientific name

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Acipenser brevirostrum
Acipenser brevirostrum
Acipenser brevirostrum
Acipenser oxyrhynchus
Actitis macularia
Aeschynomene virginica
Aix sponsa
Alnus maritima
Alosa aestivalis
Alosa pseudoharengus
Alosa sapidissima
Amaranthus pumilus
Ammannia latifolia
Anas acuta
Anas americana
Anas clypeata
Anas crecca

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Anas discors
Anas platyrhynchos
Anas rubripes
Anas strepera
Anchoa mitchilli
Aplectrum hyemale
Ardea herodias
Aythya affinis
Aythya americana
Aythya collaris
Aythya marila
Aythya spp.
Aythya valisineria
Balaenoptera acutorostrata
Balaenoptera borealis
Balaenoptera borealis
Balaenoptera edeni
Balaenoptera physalus
Balaenoptera physalus
Bidens bidentoides
Branta bernicla
Branta canadensis
Brevoortia tyrannus
Bubulcus ibis
Bucephala albeola
Bucephala clangula
Bucephala spp.
Busycon canaliculatum
Busycon carica
Butorides striatus
Calidris minutilla
Calidris pusilla
Callinectes sapidus
Caretta caretta
Caretta caretta
Carex joorii
Casmerodius albus
Centropristis striata
Charadrius melodus

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Charadrius melodus
Chelonia mydas
Chen caerulescens
Chenopodium rubrum
Chlidonias niger
Circus cyaneus
Cirsium virginianum
Clangula hyemalis
Clupea harengus harengus
Coelorachis rugosa
Crassostrea virginica
Cynoscion regalis
Cyperus polystachyos
Cyperus retrofractus
Cystophora cristata
Dalibarda repens
Delphinus delphis
Diodia virginiana
Egretta caerulea
Egretta thula
Egretta tricolor
Eleocharis brittonii
Eleocharis melanocarpa
Eleocharis tortilis
Eriophorum tenellum
Eubalaena glacialis
Eubalaena glacialis
Eupatorium resinosum
Euphorbia purpurea
Falco peregrinus
Falco peregrinus
Fraxinus profunda
Fulica americana
Gallinula chloropus
Glaux maritima
Globicephala macrorhynchus
Globicephala melaena
Grampus griseus
Haematopus palliatus

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Haliaeetus leucocephalus
Haliaeetus leucocephalus
Halichoerus grypus
Helonias bullata
Homarus americanus
Hottonia inflata
Hydrocotyle ranunculoides
Hypericum adpressum
Ictalurus punctatus
Isoetes melanopoda
Ixobrychus exilis
Juncus brachycarpus
Juncus caesariensis
Juncus coriaceus
Kogia breviceps
Kogia simus
Lagenorhynchus acutus
Larus argentatus
Larus atricilla
Larus delawarensis
Larus marinus
Leiostomus xanthurus
Lemna perpusilla
Lepidochelys kempii
Lepidochelys kempii
Limosella subulata
Limulus polyphemus
Lobelia boykinii
Loligo peali
Lophodytes cucullatus
Lutra canadensis
Lygnus olor
Malaclemys terrapin
Megaptera novaeangliae
Megaptera novaeangliae
Melanitta deglandi
Melanitta perspicillata
Melanitta spp.
Menticirrhus saxatilis

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Mercenaria mercenaria
Mergus merganser
Mergus spp.
Micropogonias undulatus
Micropterus salmoides
Morone americana
Morone saxatilis
Mustela vison
Myriophyllum pinnatum
Myriophyllum tenellum
Narthecium americanum
Nuphar microphyllum
Nyctanassa violacea
Nycticorax nycticorax
Oenothera humifusa
Olor columbianus
Ondatra zibethicus
Oxyura jamaicensis
Pagophilus groenlandicus
Pandion haliaetus
Paralichthys dentatus
Pelecanus occidentalis
Perca flavescens
Phalacrocorax auritus
Phalacrocorax carbo
Phoca vitulina
Phocoena phocoena
Phyla lanceolata
Physeter catodon
Platanthera nivea
Plegadis falcinellus
Pluchea foetida
Podilymbus podiceps
Pogonias cromis
Polygonum densiflorum
Pomatomus saltatrix
Porzana carolina
Procyon lotor
Pseudopleuronectes americanus

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Quercus nigra
Rallus elegans
Rallus limicola
Ranunculus cymbalaria
Rhynchospora filifolia
Rhynchospora globularis
Rhynchospora glomerata
Rhynchospora knieskernii
Rhynchospora microcephala
Rhynchospora rariflora
Rynchops niger
Sacciolepis striata
Scirpus longii
Scirpus robustus
Scleria verticillata
Somateria mollissima
Spiranthes laciniata
Stenella sp.
Steno bredanensis
Stenotomus chrysops
Sterna antillarum
Sterna dougallii
Sterna fosteri
Sterna hirundo
Sterna nilotica
Tautoga onitis
Triadenum walteri
Tringa flavipes
Tringa melanaleuca
Tringa solitaria
Tursiops truncatus
Urophycis chuss
Utricularia minor
Zostera marina

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
S_F

5.1.2.2. ATTRIBUTE DEFINITION:
State and Federal status

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
S	State listed
S/F	State and Federally listed

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
USFWS, New Jersey Office of Natural Lands Management, and the Pennsylvania Natural Diversity Inventory

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
T_E

5.1.2.2. ATTRIBUTE DEFINITION:
Threatened and endangered status

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
E	Endangered
E/E	Endangered on State and Federal lists
E/T	Endangered on State lists; Threatened on Federal lists
T	Threatened
T/T	Threatened on State and Federal lists

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
USFWS, New Jersey Office of Natural Lands Management, and the Pennsylvania Natural Diversity Inventory

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
NHP

5.1.2.2. ATTRIBUTE DEFINITION:
This field is blank because no NHP information was gathered when this atlas was published. The field is included here to maintain consistency with the latest ESI data structure.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
	Not supplied with this atlas

5.1.2.1. ATTRIBUTE LABEL:
DATE_PUB

5.1.2.2. ATTRIBUTE DEFINITION:
This field is blank because no NHP information was gathered when this atlas was published. The field is included here to maintain consistency with the latest ESI data structure.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
	Not supplied with this atlas

5.1.2.1. ATTRIBUTE LABEL:
CONC

5.1.2.2. ATTRIBUTE DEFINITION:
Relative concentration or actual count of a species at a specific location. For most biological elements (exceptions follow),

values include LOW, MEDIUM, or HIGH or a numeric value representing the number of individuals. The CONC field is blank if no data are available. Concentration exceptions include the following: (1) For the HABITATS data layer, CONC can be BLANK or SPARSE. (2) For the HAB_PT data layer, CONC is MED. (3) For the M_MAMMAL data layer, CONC can be RARE, OCCASIONAL, and COMMON. (4) For the NESTS data layer, CONC contains either LOW, MED, HIGH, or the numbers of birds, nests, or pairs. Nests and pairs are identified in the item. Blank concentration means it was not surveyed in 1995. (5) For the data layer REPTILES, CONC can be RARE, OCCASIONAL, or COMMON.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
JAN

5.1.2.2. ATTRIBUTE DEFINITION:
Present in January

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
X	Present
	(blank) Not Present

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
FEB

5.1.2.2. ATTRIBUTE DEFINITION:
Present in February

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
X	Present
	(blank) Not Present

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
MAR

5.1.2.2. ATTRIBUTE DEFINITION:
Present in March

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
X	Present
	(blank) Not Present

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
APR

5.1.2.2. ATTRIBUTE DEFINITION:
Present in April

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
X	Present
	(blank) Not Present

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

MAY

5.1.2.2. ATTRIBUTE DEFINITION:

Present in May

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
X	Present
	(blank) Not Present

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

JUN

5.1.2.2. ATTRIBUTE DEFINITION:

Present in June

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
X	Present
	(blank) Not Present

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
JUL

5.1.2.2. ATTRIBUTE DEFINITION:
Present in July

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
X	Present
	(blank) Not Present

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
AUG

5.1.2.2. ATTRIBUTE DEFINITION:
Present in August

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
X	Present
	(blank) Not Present

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
SEP

5.1.2.2. ATTRIBUTE DEFINITION:
Present in September

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
X	Present
	(blank) Not Present

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
OCT

5.1.2.2. ATTRIBUTE DEFINITION:
Present in October

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
X	Present
	(blank) Not Present

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
NOV

5.1.2.2. ATTRIBUTE DEFINITION:
Present in November

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
X	Present
	(blank) Not Present

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
DEC

5.1.2.2. ATTRIBUTE DEFINITION:
Present in December

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
X	Present
	(blank) Not Present

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

BREED1

5.1.2.2. ATTRIBUTE DEFINITION:

Species' breeding or life stage textual summary where:
if ELEMENT = BIRD then BREED1 = nesting;
if ELEMENT = FISH then BREED1 = spawning;
if ELEMENT = INVERT then BREED1 = spawning;
if ELEMENT = M_MAMMAL then BREED1 = mating;
if ELEMENT = REPTILE then BREED1 = nesting

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
XXX-XXX	3 character abbreviation of start and end month of breed1 activities
-	Not Occurring
N/A	No breed1 activities for this element

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

BREED2

5.1.2.2. ATTRIBUTE DEFINITION:

Species' breeding or life stage textual summary where:
if ELEMENT = BIRD then BREED2 = laying;
if ELEMENT = FISH then BREED2 = outmigration;
if ELEMENT = INVERT then BREED2 = larvae/juvenile;
if ELEMENT = M_MAMMAL then BREED2 = calving;
if ELEMENT = REPTILE then BREED2 = hatching

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
XXX-XXX	3 character abbreviation of start and end month of breed2 activities
-	Not Occurring
N/A	No breed2 activities for this element

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

BREED3

5.1.2.2. ATTRIBUTE DEFINITION:

Species' breeding or life stage textual summary where:
if ELEMENT = BIRD then BREED3 = hatching;
if ELEMENT = FISH then BREED3 = larvae/juvenile;
if ELEMENT = INVERT then BREED3 = mating;
if ELEMENT = M_MAMMAL then BREED3 = pupping;
if ELEMENT = REPTILE then BREED3 = internesting

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
XXX-XXX	3 character abbreviation of start and end month of breed3 activities
-	Not Occurring
N/A	No breed3 activities for this element

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

BREED4

5.1.2.2. ATTRIBUTE DEFINITION:

Species' breeding or life stage textual summary where:
if ELEMENT = BIRD then BREED4 = fledging;
if ELEMENT = M_MAMMAL then BREED4 = molting

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
XXX-XXX	3 character abbreviation of start and end month of breed4 activities
-	Not Occurring
N/A	No breed4 activities for this element

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:
RARNUM

5.1.2.2. ATTRIBUTE DEFINITION:
An identifier that links directly back to the biological data layers or to the BIO_LUT lookup table

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
G_SOURCE

5.1.2.2. ATTRIBUTE DEFINITION:
Geographic source identifier that links to the flat file's supplementary data table SOURCES

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
S_SOURCE

5.1.2.2. ATTRIBUTE DEFINITION:
Seasonality source identifier that links to the flat file's supplementary data table SOURCES

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
BREED

5.1.2.2. ATTRIBUTE DEFINITION:
Breed identifier that links to the flat file's supplementary data table BREED_DT that allows searches of breeding activities by month.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

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5.1. DETAILED DESCRIPTION: BIORES

The data table BIORES contains the attributes necessary for linking to several spatial data layers and other data tables.

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
Attributes	RARNUM	integer
	SPECIES_ID	integer
	CONC	character
	SEASON_ID	integer
	G_SOURCE	integer
	S_SOURCE	integer
	ELEMENT	character
	EL_SPE	character
	EL_SPE_SEA	character

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

RARNUM

5.1.2.2. ATTRIBUTE DEFINITION:

An identifier that links to the BIO_LUT table and directly back to the biology coverages.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:
SPECIES_ID

5.1.2.2. ATTRIBUTE DEFINITION:
Numeric identifier for each species that is unique within each element and refers to a nationwide ESI species list maintained by NOAA

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
CONC

5.1.2.2. ATTRIBUTE DEFINITION:
Relative concentration or actual count of a species at a specific location. For most biological elements (exceptions follow), values include LOW, MEDIUM, or HIGH or a numeric value representing the number of individuals. The CONC field is blank if no data are available. Concentration exceptions include the following: (1) For the HABITATS data layer, CONC can be BLANK or SPARSE. (2) For the HAB_PT data layer, CONC is MED. (3) For the M_MAMMAL data layer, CONC can be RARE, OCCASIONAL, and COMMON. (4) For the NESTS data layer, CONC contains either LOW, MED, HIGH, or the numbers of birds, nests, or pairs. Nests and pairs are identified in the item. Blank concentration means it was not surveyed in 1995.

(5) For the data layer REPTILES, CONC can be RARE, OCCASIONAL, or COMMON.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
SEASON_ID

5.1.2.2. ATTRIBUTE DEFINITION:
A link from the BIORES table to the SEASONAL table

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
G_SOURCE

5.1.2.2. ATTRIBUTE DEFINITION:
Geographic source identifier that links to the SOURCES data table

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
S_SOURCE

5.1.2.2. ATTRIBUTE DEFINITION:
Seasonality source identifier that links to the SOURCES data table

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
ELEMENT

5.1.2.2. ATTRIBUTE DEFINITION:
Major categories of biological data

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
BIRD	Birds
FISH	Fish
HABITAT	Habitats and Rare Plants
INVERT	Invertebrates
M_MAMMAL	Marine Mammals
REPTILE	Reptiles and Amphibians
T_MAMMAL	Terrestrial Mammals

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
EL_SPE

5.1.2.2. ATTRIBUTE DEFINITION:
Concatenation of the first character of the ELEMENT and the SPECIES_ID that provides a link to the SPECIES table.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
EL_SPE_SEA

5.1.2.2. ATTRIBUTE DEFINITION:
Concatenation of the first character of the ELEMENT, the SPECIES_ID, and the SEASON_ID that provides a link to the SEASONAL table.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1. DETAILED DESCRIPTION: BIRDS

The data layer BIRDS contains the polygons with bird species. The following BIRDS species are found in the Delaware, New Jersey, Pennsylvania ESI data set:

SPECIES ID	NAME
8	Double-crested cormorant
11	Whistling swan (tundra swan)
12	Canada goose
13	Brant
15	Snow goose
16	Mallard
17	Northern pintail
18	Green-winged teal
20	Northern shoveler
21	Canvasback
22	Greater scaup
23	Lesser scaup
24	Common goldeneye
26	Bufflehead
27	Oldsquaw
29	White-winged scoter
30	Surf scoter
32	Common merganser
34	American coot
38	Herring gull
40	Ring-billed gull
45	Common tern
54	Great blue heron
56	Spotted sandpiper
58	Greater yellowlegs
59	Lesser yellowlegs
62	Least sandpiper
76	Bald eagle
77	Osprey
86	Least tern
87	Little blue heron
88	Great egret
89	Snowy egret
90	Black-crowned night heron
91	Glossy ibis
92	Great black-backed gull
93	Cattle egret
94	Tricolored heron

SPECIES ID	NAME
95	Roseate tern
97	Green-backed heron
98	Laughing gull
103	Common eider
107	Peregrine falcon
118	Brown pelican
120	Yellow-crowned night heron
124	Redhead
133	Black skimmer
134	Gull-billed tern
138	Forster's tern
148	Ruddy duck
152	American oystercatcher
153	Piping plover
156	Semipalmated sandpiper
162	Gadwall
169	American wigeon
178	Least bittern
179	Pied-billed grebe
180	Ring-necked duck
181	Northern harrier
184	King rail
186	Black duck
187	Virginia rail
188	Sora rail
190	Blue-winged teal
191	Wood duck
192	Common moorhen
193	Black tern
198	Hooded merganser
214	Solitary sandpiper
217	Mute swan
275	Great cormorant
299	Scaup
300	Goldeneye
301	Merganser
302	Scoter
1,001	Gulls
1,002	Shorebirds
1,003	Waterfowl
1,004	Wading birds
1,008	Terns

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
GT-Polygons	ID	integer
	RARNUM	integer

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ID

5.1.2.2. ATTRIBUTE DEFINITION:

A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas number (12), element number (1), and record number. ID values of 9999 are holes in polygons and do not contain information.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

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 BIOFILE table

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1. DETAILED DESCRIPTION: BREED

The data table BREED identifies the life stages and abundances, by month, for each species. (There are no breeding activities for the HABITAT or T_MAMMAL elements.)

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
Attributes	EL_SPE_SEA	character
	MONTH	integer
	BREED1	character
	BREED2	character
	BREED3	character
	BREED4	character

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

EL_SPE_SEA

5.1.2.2. ATTRIBUTE DEFINITION:

Concatenation of the first character of the ELEMENT, the SPECIES_ID, and the SEASON_ID. Links to BIORES and SEASONAL data tables. If a species has any different monthly presence or breeding activity, a new seasonality record is used to accommodate the variable nature of the species across the study area

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

MONTH

5.1.2.2. ATTRIBUTE DEFINITION:

Two-digit integer corresponding to the calendar month. Can have up to 12 records to account for each month of the year

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1	January
2	February
3	March
4	April
5	May
6	June
7	July
8	August
9	September
10	October
11	November
12	December

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

BREED1

5.1.2.2. ATTRIBUTE DEFINITION:

Species' breeding or life stage information where:
if EL_SPE_SEA contains "B" then BREED1 = nesting;
if EL_SPE_SEA contains "F" then BREED1 = spawning;
if EL_SPE_SEA contains "I" then BREED1 = spawning;
if EL_SPE_SEA contains "M" then BREED1 = mating;
if EL_SPE_SEA contains "R" then BREED1 = nesting

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
N	Not occurring
Y	Occurring

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

BREED2

5.1.2.2. ATTRIBUTE DEFINITION:

Species' breeding or life stage information where:
if EL_SPE_SEA contains "B" then BREED2 = laying;
if EL_SPE_SEA contains "F" then BREED2 = outmigration;
if EL_SPE_SEA contains "I" then BREED2 = larvae/juvenile;
if EL_SPE_SEA contains "M" then BREED2 = calving;
if EL_SPE_SEA contains "R" then BREED2 = hatching

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
N	Not occurring
Y	Occurring

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

BREED3

5.1.2.2. ATTRIBUTE DEFINITION:

Species' breeding or life stage information where:
if EL_SPE_SEA contains "B" then BREED3 = hatching;
if EL_SPE_SEA contains "F" then BREED3 = larvae/juvenile;
if EL_SPE_SEA contains "I" then BREED3 = mating;
if EL_SPE_SEA contains "M" then BREED3 = pupping;
if EL_SPE_SEA contains "R" then BREED3 = internesting

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
N	Not occurring
Y	Occurring

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

BREED4

5.1.2.2. ATTRIBUTE DEFINITION:

Species' breeding or life stage information where:
if EL_SPE_SEA contains "B" then BREED4 = fledging;
if EL_SPE_SEA contains "M" then BREED4 = molting

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
N	Not occurring
Y	Occurring

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1. DETAILED DESCRIPTION: BREED_DT

The data table BREED _DT is a supplement to the flat format BIOFILE that allows searches to be conducted for life stage activities by month. This is a condensed version of the BREED table where multiple species of the same element may link to the same BREED_DT records. (There are no breeding activities for the HABITAT or T_MAMMAL elements.)

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
Attributes	BREED	integer
	MONTH	integer
	BREED1	character
	BREED2	character
	BREED3	character
	BREED4	character

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

BREED

5.1.2.2. ATTRIBUTE DEFINITION:

An integer value that links from the BIOFILE to the BREED_DT table

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

MONTH

5.1.2.2. ATTRIBUTE DEFINITION:

Two-digit integer corresponding to the calendar month. Each month is listed whether any special life activity is occurring or not.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1	January
2	February
3	March
4	April
5	May
6	June
7	July
8	August
9	September
10	October
11	November
12	December

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

BREED1

5.1.2.2. ATTRIBUTE DEFINITION:

Species' breeding or life stage information where:
if EL_SPE_SEA contains "B" then BREED1 = nesting;
if EL_SPE_SEA contains "F" then BREED1 = spawning;
if EL_SPE_SEA contains "I" then BREED1 = spawning;
if EL_SPE_SEA contains "M" then BREED1 = mating;
if EL_SPE_SEA contains "R" then BREED1 = nesting

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
N	Not occurring
Y	Occurring
-	No Breed1 activity for this element

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

BREED2

5.1.2.2. ATTRIBUTE DEFINITION:

Species' breeding or life stage information where:
if EL_SPE_SEA contains "B" then BREED2 = laying;
if EL_SPE_SEA contains "F" then BREED2 = outmigration;
if EL_SPE_SEA contains "I" then BREED2 = larvae/juvenile;
if EL_SPE_SEA contains "M" then BREED2 = calving;
if EL_SPE_SEA contains "R" then BREED2 = hatching

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
N	Not occurring
Y	Occurring
-	No Breed2 activity for this element

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

BREED3

5.1.2.2. ATTRIBUTE DEFINITION:

Species' breeding or life stage information where:
if EL_SPE_SEA contains "B" then BREED3 = hatching;
if EL_SPE_SEA contains "F" then BREED3 = larvae/juvenile;
if EL_SPE_SEA contains "I" then BREED3 = mating;
if EL_SPE_SEA contains "M" then BREED3 = pupping;
if EL_SPE_SEA contains "R" then BREED3 = internesting

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
N	Not occurring
Y	Occurring
-	No Breed3 activity for this element

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

BREED4

5.1.2.2. ATTRIBUTE DEFINITION:

Species' breeding or life stage information where:
if EL_SPE_SEA contains "B" then BREED4 = fledging;
if EL_SPE_SEA contains "M" then BREED4 = molting

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
N	Not occurring
Y	Occurring
-	No Breed4 activity for this element

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

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5.1. DETAILED DESCRIPTION: ESI

The coverage ESI contains arc (Complete Chains) and polygonal (GT-Polygons) features for the ESI shoreline classification and is based on *Guidelines for Developing Digital Environmental Sensitivity Index Atlases and Databases* (Michel, J. and J. Dahlin, 1993, Hazardous Materials Response and Assessment Division, NOAA). The ESI classification was performed in April 1995.

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
Complete Chain	ESI	character
	LINE	character
	SOURCE_ID	integer
	ENVIR	character
GT-Polygons	ESI	character
	WATER_CODE	character

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ESI

5.1.2.2. ATTRIBUTE DEFINITION:

The item ESI contains values according to the ESI ranking of the shorelines and polygons. The ESI rankings progress from low to high susceptibility to oil spills. The Delaware, New Jersey, and Pennsylvania shoreline types are listed below. In many cases, the shorelines are also ranked with multiple codes, such as 10/7. The first number is the most landward shoreline type, salt marsh, with exposed tidal flats being the shoreline type closest to the water.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1B	Exposed Seawalls and Other Solid Structures Made of Concrete, Wood, or Metal

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1B/4	Exposed Seawalls and Other Solid Structures Made of Concrete, Wood, or Metal/Medium- to Coarse-grained Sand Beaches
1B/5	Exposed Seawalls and Other Solid Structures Made of Concrete, Wood, or Metal/Mixed Sand and Gravel Beaches
1B/6A	Exposed Seawalls and Other Solid Structures Made of Concrete, Wood, or Metal/Gravel Beaches
1B/6B	Exposed Seawalls and Other Solid Structures Made of Concrete, Wood, or Metal/Riprap Structures
1B/10A	Exposed Seawalls and Other Solid Structures Made of Concrete, Wood, or Metal/Salt and Brackish-water Marshes
2A	Eroding Bluffs
2B	Wave-cut Clay Platforms
3	Fine-grained Sand Beaches
4	Medium- to Coarse-grained Sand Beaches
4/10A	Medium- to Coarse-grained Sand Beaches/Salt and Brackish-water Marshes
5	Mixed Sand and Gravel Beaches
5/10A	Mixed Sand and Gravel Beaches/Salt and Brackish-water Marshes
6A	Gravel Beaches
6B	Riprap Structures
6B/3	Riprap Structures/Fine-grained Sand Beaches
6B/4	Riprap Structures/Medium- to Coarse-grained Sand Beaches
6B/5	Riprap Structures/Mixed Sand and Gravel Beaches
6B/6A	Riprap Structures/Gravel Beaches
6B/8A	Riprap Structures/Riverine Banks with Grasses or Trees and Levees
6B/10A	Riprap Structures/Salt and Brackish-water Marshes
7	Exposed Tidal Flats
8A	Vegetated, Steeply Sloping Riverine Bluffs
8A/4	Vegetated, Steeply Sloping Riverine Bluffs/Medium- to Coarse-grained Sand Beaches
8A/5	Vegetated, Steeply Sloping Riverine Bluffs/Mixed Sand and Gravel Beaches

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
8A / 6A	Vegetated, Steeply Sloping Riverine Bluffs / Gravel Beaches
8A / 6B	Vegetated, Steeply Sloping Riverine Bluffs / Riprap Structures
8A / 10A	Vegetated, Steeply Sloping Riverine Bluffs / Salt and Brackish-water Marshes
8B	Sheltered Seawalls and Other Solid Structures Made of Concrete, Wood, or Metal
9	Sheltered Tidal Flats
10A	Salt and Brackish-water Marshes
10A / 3	Salt and Brackish-water Marshes / Fine-grained Sand Beaches
10A / 4	Salt and Brackish-water Marshes / Medium- to Coarse-grained Sand Beaches
10A / 5	Salt and Brackish-water Marshes / Mixed Sand and Gravel Beaches
10A / 6A	Salt and Brackish-water Marshes / Gravel Beaches
10A / 6B	Salt and Brackish-water Marshes / Riprap Structures
10A / 9	Salt and Brackish-water Marshes / Sheltered Tidal Flats
U	Unranked

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

ordinal

5.1.2.1. ATTRIBUTE LABEL:

LINE

5.1.2.2. ATTRIBUTE DEFINITION:

Type of geographic feature

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
B	Breakwater
F	Flat
H	Hydrography or stream features
P	Pier
S	Shoreline

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

SOURCE_ID

5.1.2.2. ATTRIBUTE DEFINITION:

Data source for the ESI

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
0	Digital MSRC Shoreline
1	Ground Truth / Field Edit
4	Digitize from Scanned Topo
6	Digital New Jersey Shoreline

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

ENVIR

5.1.2.2. ATTRIBUTE DEFINITION:

Regional environment

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
E	Estuarine

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

WATER_CODE

5.1.2.2. ATTRIBUTE DEFINITION:

Specifies a polygon as either water or land

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
L	Land
W	Water

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

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5.1. DETAILED DESCRIPTION: FISH

The data layer FISH contains the polygons with fish species. The following FISH species are found in the Delaware, New Jersey, Pennsylvania ESI data set:

SPECIES ID	NAME
65	Bluefish
85	Alewife
86	Blueback herring
87	American shad
88	Winter flounder
97	Tautog
101	Shortnose sturgeon
102	Atlantic sturgeon
104	Striped bass
108	Summer flounder
110	Black seabass
113	Bay anchovy
115	Atlantic menhaden
121	Spot
122	Black drum
123	Atlantic croaker
138	Seatrout (weakfish)
145	White perch
146	Atlantic herring
150	Porgy (scup)
152	Yellow perch
153	Northern kingfish
155	Squirrel (red) hake (ling)
179	Largemouth bass
201	Channel catfish

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
GT-Polygons	ID	integer
	RARNUM	integer

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ID

5.1.2.2. ATTRIBUTE DEFINITION:
A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas number (12), element number (2), and record number. ID values of 9999 are holes in polygons and do not contain information.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
NOAA

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

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 BIOFILE table

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1. DETAILED DESCRIPTION: HABITATS

The data layer HABITATS contains the polygons with plant species. The following HABITATS species are found in the Delaware, New Jersey, Pennsylvania ESI data set:

SPECIES ID	NAME
33	Seaside crowfoot
108	Salt marsh bulrush
117	Water oak
145	Beach amaranth
150	Bur-marigold
151	Seaside alder
152	American cupscale
153	Awl-leaved rush
154	Barton's St. John's-wort
155	Black-based quillwort
156	Black-fruited spikerush
157	Bog asphodel
158	Boykin's lobelia
160	Britton's spikerush
161	Clustered beaked rush
162	Coast flatsedge
163	Cut-leaved water-milfoil
164	Cypress-swamp sedge
165	Featherfoil
166	Floating pennywort
167	Fog fruit
168	Glade spurge
169	Grass-like beaked rush
170	Knieskern's beaked rush
171	Koehn's tooth-cup
172	Lace-lip ladies'-tresses
173	Larger buttonweed
174	Lesser bladderwort
175	Long's bulrush
176	Minute duckweed
177	Mudweed
178	New Jersey rush
179	Pine Barren boneset
180	Pumpkin Ash
181	Puttyroot
182	Rare-flowering beaked rush
183	Red goosefoot
184	Robin-run-away
185	Rough cottongrass

SPECIES ID	NAME
186	Rough flatsedge
188	Sea-beach milkwort
189	Sea-side evening primrose
190	Virginia joint-vetch
191	Short-fruited rush
192	Slender water-milfoil
193	Small yellow pond lily
194	Small-headed beaked rush
195	Snowy orchid
196	Stinking fleabane
197	Stout smartweed
198	Swamp-pink
199	Thread-leaved beaked rush
200	Twisted spikerush
201	Virginia thistle
202	Walter's St. John's-wort
203	Whorled nut rush
204	Wrinkled jointgrass

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
GT-Polygons	ID	integer
	RARNUM	integer

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ID

5.1.2.2. ATTRIBUTE DEFINITION:

A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas number (12), element number (3), and record number. ID values of 9999 are holes in polygons and do not contain information.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

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 BIOFILE table

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

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5.1. DETAILED DESCRIPTION: HAB_PT

The data layer HAB_PT contains the points with plant species. The following HAB_PT species are found in the Delaware, New Jersey, Pennsylvania ESI data set:

SPECIES ID	NAME
150	Bur-marigold
151	Seaside alder

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
GT-Polygons	ID	integer
	RARNUM	integer

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ID

5.1.2.2. ATTRIBUTE DEFINITION:

A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas number (12), element number (3+30, to indicate point data 33), and record number.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

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 BIOFILE table

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1. DETAILED DESCRIPTION: HYDRO

The coverage HYDRO contains polygonal water and land features as well as linear features for rivers / streams that are tidally influenced.

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
GT-Polygons	WATER_CODE	character
Complete Chains	LINE	character
	SOURCE_ID	integer

The LINE, SOURCE_ID, and WATER_CODE attributes are the same as in the ESI coverage. This coverage 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.

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

WATER_CODE

5.1.2.2. ATTRIBUTE DEFINITION:

Specifies a polygon as either water or land

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
L	Land
W	Water

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

LINE

5.1.2.2. ATTRIBUTE DEFINITION:

Type of geographic feature

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
B	Breakwater
F	Flat
H	Hydrography or stream features
I	Index
P	Pier
S	Shoreline

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

SOURCE_ID

5.1.2.2. ATTRIBUTE DEFINITION:

Data source for the HYDRO

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
0	Digital MSRC Shoreline
1	Ground Truth / Field Edit
4	Digitize from Scanned Topo
6	Digital New Jersey Shoreline

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1. DETAILED DESCRIPTION: INDEX

The coverage INDEX contains the map polygon boundaries for each quad / map in the atlas.

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
GT-Polygons	TILE-NAME	character
	TOPO-NAME	character
	SCALE	integer
	MAPANGLE	floating point
	PAGESIZE	character

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

TILE-NAME

5.1.2.2. 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 the maps in a coherent manner. The values for each polygon are unique and range from 1 through 64.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

TOPO-NAME

5.1.2.2. ATTRIBUTE DEFINITION:

USGS 1:24,000 topographic map name. Some polygons straddle two or more maps and all map names are included in this attribute. The date (latest / revised) of the USGS maps are also included in this field.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

ASSAWOMAN BAY, MD (1992)
ATLANTIC CITY, NJ (1972)

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

AVALON, NJ (1972)
BARNEGAT LIGHT, NJ (1989)
BEACH HAVEN, NJ (1972)
BEN DAVIS POINT, NJ (1972)
BENNETTS PIER, DE (1993)
BETHANY BEACH, DE (1991)
BEVERLY, PA (1973)
BOMBAY HOOK, DE (1977)
BRIDGEPORT, NJ (1994)
BRIDGETON, NJ (1973)
BRIGANTINE INLET, NJ (1972)
BRISTOL, PA (1981)
CAMDEN, NJ (1994)
CANTON, NJ (1977)
CAPE HENLOPEN, DE (1984)
CAPE MAY, NJ (1972)
CEDARVILLE, NJ (1977)
DELAWARE CITY, DE (1993)
DIVIDING CREEK, NJ (1986)
FAIRMOUNT, DE (1991)
FORKED RIVER, NJ (1989)
FORTESCUE, NJ (1972)
FRANKFORD, DE (1991)
FRANKFORD, PA (1983)
FREDERICA, DE (1993)
HEISLERVILLE, NJ (1977)
LANSDOWN, PA (1994)
LEWES, DE (1991)
LITTLE CREEK, DE (1993)
LONG BEACH NE, NJ (1972)
MARCUS HOOK, PA (1993)
MARMORA, NJ (1972)
MILLSBORO, DE (1992)
MILLVILLE, NJ (1986)
MILTON, DE (1992); MISPILLION RIVER, DE (1993)
NEW GRETNA, NJ (1977)
NEWARK EAST, DE (1993)
OCEAN CITY, NJ (1972)
OCEANVILLE, NJ (1972)

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

PENNS GROVE, NJ (1993)
PHILADELPHIA, PA (1973)
PORT ELIZABETH, NJ (1977)
PORT NIRRIS, NJ (1972)
REHOBOTH BEACH, DE (1991)
RIO GRANDE, NJ (1972)
SEA ISLE CITY, NJ (1972)
SEASIDE PARK, NJ (1989)
SHILOH, NJ (1993)
SHIP BOTTOM, NJ (1972)
SMYRNA, DE (1993)
STONE HARBOR, NJ (1972)
TAYLOR'S BRIDGE, DE (1993)
TOMS RIVER, NJ (1989)
TRENTON EAST, NJ (1981)
TRENTON WEST, NJ (1981)
TUCKERTON, NJ (1972)
WATER; DELAWARE BAY
WEST CREEK, NJ (1972)
WILDWOOD, NJ (1972)
WILMINGTON SOUTH, DE (1993)
WOODBURY, NJ (1990)

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
SCALE

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

48,000
58,000

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

MAPANGLE

5.1.2.2. ATTRIBUTE DEFINITION:

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

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

-0.603
-0.601
-0.599
-0.524
-0.522
-0.520
-0.518
-0.439
-0.438
-0.437
-0.358
-0.357
-0.277
-0.202
-0.200
-0.199
-0.121
-0.119
-0.117
-0.050
-0.040
0.000
0.039

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

0.040
0.116
0.117
0.118
0.120
0.121
0.195
0.196
0.197
0.199
0.200
0.201
0.276
0.277
0.278
0.280
0.281
0.357
0.358
0.361
0.439

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

PAGESIZE

5.1.2.2. ATTRIBUTE DEFINITION:

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

11,17

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1. DETAILED DESCRIPTION: INVERT (formerly SHELLFSH)

The data layer INVERT contains the polygons with invertebrate species. The following INVERT species are found in the Delaware, New Jersey, Pennsylvania ESI data set:

SPECIES ID	NAME
42	Northern quahog (hard clam)
43	American oyster (eastern)
44	Horseshoe crab
45	Northern lobster
46	Channeled whelk
47	Knobbed whelk
49	Blue crab
73	Squid

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
GT-Polygons	ID	integer
	RARNUM	integer

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ID

5.1.2.2. ATTRIBUTE DEFINITION:

A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas number (12), element number (7), and record number. ID values of 9999 are holes in polygons and do not contain information.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

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 BIOFILE table

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1. DETAILED DESCRIPTION: MGT

The coverage MGT contains the managed lands polygons for human-use data.

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
GT-Polygons	TYPE	character
	ID	integer
	HUNUM	integer

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

TYPE

5.1.2.2. ATTRIBUTE DEFINITION:

Identifies polygons with a socioeconomic, or human-use, feature. This attribute allows direct access to the type of feature instead of linking to the more detailed SOC_DAT table.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
P	State Park
WR	Wildlife Refuge
	(blank) A hole in the enclosing boundary

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:
ID

5.1.2.2. ATTRIBUTE DEFINITION:
A unique identifier that links to the SOC_LUT table. ID is a concatenation of atlas number (12), element number (11), and record number

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
NOAA

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
HUNUM

5.1.2.2. ATTRIBUTE DEFINITION:
An identifier that links directly to the SOC_DAT table.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1. DETAILED DESCRIPTION: M_MAMMAL

The data layer M_MAMMAL contains the polygons with marine mammal species. The following M_MAMMAL species are found in the Delaware, New Jersey, Pennsylvania ESI atlas:

SPECIES ID	NAME
2	Harbor seal
6	Harbor porpoise
11	Fin whale
12	Minke whale
13	Humpback whale
14	Gray seal
17	Bottlenose dolphin
18	Pygmy sperm whale
19	Shortfin pilot whale
27	Sei whale
46	Risso's dolphin
48	Sperm whale
60	Common dolphin
61	Stenellid dolphin
81	Northern right whale
82	Dwarf sperm whale
83	Long-finned pilot whale
84	Hooded seal
85	Harp seal
86	Atlantic white-sided dolphin
87	Rough-toothed dolphin
88	Bryde's whale

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
GT-Polygons	ID	integer
	RARNUM	integer

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ID

5.1.2.2. ATTRIBUTE DEFINITION:

A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas number (12), element number (4), and

record number. ID values of 9999 are holes in polygons and do not contain information.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
NOAA

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

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 BIOFILE table

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1. DETAILED DESCRIPTION: NESTS

The data layer NESTS contains entity points representing nesting sites. The following NESTS species are found in the Delaware, New Jersey, Pennsylvania ESI data set:

SPECIES ID	NAME
38	Herring gull
45	Common tern
54	Great blue heron
77	Osprey
86	Least tern
87	Little blue heron
88	Great egret
89	Snowy egret
90	Black-crowned night heron
91	Glossy ibis
92	Great black-backed gull
93	Cattle egret
94	Tricolored heron
97	Green-backed heron
98	Laughing gull
120	Yellow-crowned night heron
133	Black skimmer
138	Forster's tern
1,004	Wading birds

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
Entity Points	ID	integer
	RARNUM	integer

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ID

5.1.2.2. ATTRIBUTE DEFINITION:

A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas number (12), element number (5), and record number.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

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 BIOFILE table

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1. DETAILED DESCRIPTION: REPTILES

The data layer REPTILES contains the polygons with reptile species. The following REPTILES species are found in the Delaware, New Jersey, Pennsylvania ESI data set:

SPECIES ID	NAME
2	Green sea turtle
4	Kemp's ridley sea turtle
6	Atlantic loggerhead sea turtle
7	Diamondback terrapin

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
GT-Polygons	ID	integer
	RARNUM	integer

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ID

5.1.2.2. ATTRIBUTE DEFINITION:

A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas number (12), element number (6), and record number. ID values of 9999 are holes in polygons and do not contain information.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

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 BIOFILE table

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1. DETAILED DESCRIPTION: SEASONAL

The data table SEASONAL specifies the month when each species is present.

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
Attributes	ELEMENT	character
	SPECIES_ID	integer
	SEASON_ID	integer
	JAN	character
	FEB	character
	MAR	character
	APR	character
	MAY	character
	JUN	character
	JUL	character
	AUG	character
	SEP	character
	OCT	character
	NOV	character
	DEC	character
	EL_SPE_SEA	character

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ELEMENT

5.1.2.2. ATTRIBUTE DEFINITION:

Major categories of biological data

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
BIRD	Birds
FISH	Fish
HABITAT	Habitats and Rare Plants
INVERT	Invertebrates
M_MAMMAL	Marine Mammals
REPTILE	Reptiles and Amphibians
T_MAMMAL	Terrestrial Mammals

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
SPECIES_ID

5.1.2.2. ATTRIBUTE DEFINITION:
Numeric identifier for each species that is unique within each element and refers to a nationwide ESI species list maintained by NOAA

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
SEASON_ID

5.1.2.2. ATTRIBUTE DEFINITION:
Numeric identifier for the unique monthly presence and life history characteristics of each species at a given location. There can be one seasonality record per species, or the same species can have different monthly presence or breeding activities at different sites. When this occurs, a new record with a different SEASON_ID is referenced

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
JAN

5.1.2.2. ATTRIBUTE DEFINITION:
Present in January

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
X	Present
	(blank) Not Present

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
FEB

5.1.2.2. ATTRIBUTE DEFINITION:
Present in February

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
X	Present
	(blank) Not Present

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
MAR

5.1.2.2. ATTRIBUTE DEFINITION:
Present in March

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
X	Present
	(blank) Not Present

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
APR

5.1.2.2. ATTRIBUTE DEFINITION:
Present in April

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
X	Present
	(blank) Not Present

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
MAY

5.1.2.2. ATTRIBUTE DEFINITION:
Present in May

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
X	Present
	(blank) Not Present

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
JUN

5.1.2.2. ATTRIBUTE DEFINITION:
Present in June

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
X	Present
	(blank) Not Present

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
JUL

5.1.2.2. ATTRIBUTE DEFINITION:
Present in July

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
X	Present
	(blank) Not Present

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
AUG

5.1.2.2. ATTRIBUTE DEFINITION:
Present in August

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
X	Present
	(blank) Not Present

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
SEP

5.1.2.2. ATTRIBUTE DEFINITION:
Present in September

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
X	Present
	(blank) Not Present

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
OCT

5.1.2.2. ATTRIBUTE DEFINITION:
Present in October

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
X	Present
	(blank) Not Present

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
NOV

5.1.2.2. ATTRIBUTE DEFINITION:
Present in November

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
X	Present
	(blank) Not Present

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
DEC

5.1.2.2. ATTRIBUTE DEFINITION:
Present in December

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
X	Present
	(blank) Not Present

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
EL_SPE_SEA

5.1.2.2. ATTRIBUTE DEFINITION:
Concatenation of the first character of the ELEMENT, the SPECIES_ID, and the SEASON_ID that provides a link from the BIORES table to the BREED table

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

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5.1. DETAILED DESCRIPTION: SOC_DAT

The data table SOC_DAT contains the human-use attributes and links to the data layers MGT and SOCECON either directly, using HUNUM, or through the unique ID, using SOC_LUT.

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
Attributes	HUNUM	integer
	TYPE	character
	NAME	character
	CONTACT	character
	PHONE	character
	G_SOURCE	integer
	A_SOURCE	integer

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

HUNUM

5.1.2.2. ATTRIBUTE DEFINITION:

A unique identifier that links to the SOC_LUT lookup table or directly back to the MGT and SOCECON coverages

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique link

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

TYPE

5.1.2.2. ATTRIBUTE DEFINITION:

Identifies the feature type

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
ACCESS	Access
AIRPORT	Airport
ARCHAEOLOGICAL SITE	Archaeological Site
BOAT RAMP	Boat Ramp
COAST GUARD	Coast Guard
FERRY	Ferry
HISTORICAL SITE	Historical Site
MARINA	Marina
RECREATIONAL FISHING	Recreational Fishing
STATE PARK	State Park
WATER INTAKE	Water Intake
WILDLIFE REFUGE	Wildlife Refuge

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

NAME

5.1.2.2. ATTRIBUTE DEFINITION:

The feature name

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

ABSECON WILDLIFE MANAGEMENT AREA
ACCESS
AIRPORT
APPOQUINIMINK ST. WILDLIFE MGMT. AREA
ARCHAEOLOGICAL SITE
ARCHAEOLOGICAL SITE / HISTORICAL SITE

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

ASSAWOMEN BAY STATE WILDLIFE AREA
AUGUSTINE STATE WILDLIFE MGMT. AREA
BARNEGAT LIGHTHOUSE STATE PARK
BEAR SWAMP EAST NATURAL AREA
BELLEVUE STATE PARK
BERRYTOWN WILDLIFE MANAGEMENT AREA
BOAT RAMP
BOMBAY HOOK NATIONAL WILDLIFE REFUGE
BURTON-DERRICKSON STATE NATURE PRESERVE
CAPE HENLOPEN STATE PARK
CAPE MAY POINT NATURAL AREA IN ST. PARK
CAPE MAY WETLANDS NAT. WILDLIFE REFUGE
CARL FOSTER SHOREBIRD PRESERVE
CEDAR SWAMP STATE WILDLIFE AREA
CEDARVILLE POND WILDLIFE MGMT AREA
CHARLES FOSTER SHOREBIRD PRESERVE
CLARKS POND WILDLIFE MANAGEMENT AREA
COAST GUARD
CORSONS INLET STATE PARK
DELAWARE & RARITAN CANAL STATE PARK
DELAWARE SEASHORE STATE PARK
DENNIS CREEK WILDLIFE MANAGEMENT AREA
DIX WILDLIFE MANAGEMENT AREA
DOUBLE TROUBLE PRESERVE
DOUBLE TROUBLE STATE PARK
EDWARD G. BEVAN WILDLIFE MGMT AREA
EDWIN B. FORSYTHE NAT WILDLIFE REFUGE
EGG ISLAND WILDLIFE MANAGEMENT AREA
FENWICK ISLAND STATE PARK
FERRY
FORKED RIVER STATE GAME FARM
FORT DELAWARE STATE PARK
FORT MOTT STATE PARK
FORTESCUE WILDLIFE MGMT AREA
FOX POINT STATE PARK
FRYE PRESERVE
GAME BRANCH PRESERVE
GREAT BAY BOULEVARD WILDLIFE MGMT AREA
GREAT BAY NATURAL AREA
GREAT SOUND STATE PARK
HAWK ISLAND STATE PARK
HEISLERVILLE WILDLIFE MANAGEMENT AREA
HIGBEE WILDLIFE MANAGEMENT AREA
HISTORICAL SITE
HOLTS LANDING STATE PARK

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

INDUSTRIAL WATER SUPPLY
IRRIGATION SUPPLY
ISLAND BEACH STATE PARK
JARVIS SHOREBIRD PRESERVE
JOHN HEINZ NATIONAL WILDLIFE REFUGE
KILLCOHOOK COORDINATION AREA
KISLOW PRESERVE
LAZARUS PRESERVE
LESTER G. MACNAMARA WILDLIFE MGMT AREA
LITTLE CREEK STATE WILDLIFE AREA
LOGAN POND WILDLIFE MANAGEMENT AREA
MAD HORSE CREEK ST. WILDLIFE MGMT. AREA
MANAHAWKIN NATURAL AREA IN WMA
MANAHAWKIN WILDLIFE MANAGEMENT AREA
MARINA
MARMORA WILDLIFE MANAGEMENT AREA
MASKELLS MILL POND WILDLIFE MGMT AREA
MENANTICO POND WILDLIFE MANAGEMENT AREA
MILFORD NECK STATE WILDLIFE AREA
MILL CREEK MARSH PRESERVE
MYSTIC ISLAND PRESERVE
NANTUXENT WILDLIFE MANAGEMENT AREA
NEW SWEDEN WILDLIFE MANAGEMENT AREA
NORTH BRIGATINE NATURAL AREA
OSBOURNE TRACT WILDLIFE MGMT AREA
PEASLEE WILDLIFE MANAGEMENT AREA
PENNSBURY MANOR STATE PARK
PORK ISLAND WILDLIFE MANAGEMENT AREA
PORT REPUBLIC WILDLIFE MANAGEMENT AREA
PRIME HOOK NATIONAL WILDLIFE REFUGE
PUBLIC WATER SUPPLY
RANCOCAS STATE PARK
RECREATIONAL FISHING
RICHARD BUHLMAN PRESERVE
SEDGE ISLANDS WILDLIFE MANAGEMENT AREA
SHOREBIRD ENVIRONMENTAL CONCERN PRESERVE
SHOREBIRD ORR PRESERVE
SHOREBIRD PRESERVE
STAFFORD FORGE WILDLIFE MANAGEMENT AREA
SUPAWNA MEADOWS NATIONAL WILDLIFE REFUGE
SWAN BAY WILDLIFE MANAGEMENT AREA
TAYLOR PRESERVE
TED HARVEY STATE WILDLIFE AREA
TILTONS CREEK PRESERVE
TOLZ SHOREBIRD PRESERVE/EASEMENT

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

UNION LAKE WILDLIFE MANAGEMENT AREA
WASHINGTON CROSSING STATE PARK
WATER INTAKE
WOODLAND BEACH STATE WILDLIFE AREA

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

CONTACT

5.1.2.2. ATTRIBUTE DEFINITION:

Contact person

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

PHONE

5.1.2.2. ATTRIBUTE DEFINITION:

Telephone number

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

G_SOURCE

5.1.2.2. ATTRIBUTE DEFINITION:

Geographic source identifier that links to the SOURCES data table

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique link

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
A_SOURCE

5.1.2.2. ATTRIBUTE DEFINITION:
Attribute source identifier that links to the SOURCES data table

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique link

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1. DETAILED DESCRIPTION: SOC_LUT

Lookup table to link SOC_DAT to SOCECON and MGT data layers.

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
Attributes	HUNUM	integer
	ID	integer

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:
HUNUM

5.1.2.2. ATTRIBUTE DEFINITION:
A unique identifier that links SOCECON and MGT to the SOC_DAT data table

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
ID

5.1.2.2. ATTRIBUTE DEFINITION:
A unique identifier that links SOC_LUT to the SOCECON and MGT data layers

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

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5.1. DETAILED DESCRIPTION: SOCECON

The data layer SOCECON contains the entity points and complete chains for the human-use data.

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
Complete Chains	TYPE	character
Entity Points	TYPE	character
	ID	integer
	HUNUM	integer

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

TYPE

5.1.2.2. ATTRIBUTE DEFINITION:

Identifies a line or point with a socioeconomic, or human-use, feature. This attribute allows direct access to the type of feature instead of linking to the more detailed SOC_DAT table.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
A2	Access (Point)
A	Airport (Point)
AS	Archaeological Site (Point)
BR	Boat Ramp (Point)
CG	Coast Guard (Point)
F	Ferry (Point)
HS	Historical Site (Point)
M	Marina (Point)
RF	Recreational Fishing (Point)
SB	State Border (Chain)
WI	Water Intake (Point)

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
ID

5.1.2.2. ATTRIBUTE DEFINITION:
A unique identifier that links to the SOC_LUT table. ID is a concatenation of atlas number (12), element number (10), and record number.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
NOAA

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
HUNUM

5.1.2.2. ATTRIBUTE DEFINITION:
An identifier that links directly to the SOC_DAT table.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1. DETAILED DESCRIPTION: SOURCES

The data table SOURCES contains the primary sources used to create the ESI atlas.

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
Attributes	SOURCE_ID	integer
	ORIGINATOR	character
	DATE_PUB	integer
	TITLE	character
	DATA_FORMAT	character
	PUBLICATION	character
	SCALE	character
	TIME_PERIOD	character

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

SOURCE_ID

5.1.2.2. ATTRIBUTE DEFINITION:

Source identifier that links to G_SOURCE, S_SOURCE, and A_SOURCE found in the BIORES, BIOFILE and SOC_DAT tables.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:
ORIGINATOR

5.1.2.2. ATTRIBUTE DEFINITION:
Author of the data set

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
DATE_PUB

5.1.2.2. ATTRIBUTE DEFINITION:
Date of data collection or publication

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	The first two integers are the month and the last four are the year. If month is unknown, only the four-digit year is entered

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
TITLE

5.1.2.2. ATTRIBUTE DEFINITION:
Title of the source data set or document

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Originator who provided data, or RPI for personal interviews with resource experts

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:

DATA_FORMAT

5.1.2.2. ATTRIBUTE DEFINITION:

The format of the source data set

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Book
Book, Hardcopy Maps
Book, Report
Database
Digital Maps
Hardcopy Maps
Hardcopy Maps, Text
Hardcopy Tables

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

PUBLICATION

5.1.2.2. ATTRIBUTE DEFINITION:

Additional citation information

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

SCALE

5.1.2.2. ATTRIBUTE DEFINITION:

Source scale denominator

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

ordinal

5.1.2.1. ATTRIBUTE LABEL:
TIME_PERIOD

5.1.2.2. ATTRIBUTE DEFINITION:
Date(s) of data collection

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1. DETAILED DESCRIPTION: SPECIES

The data table SPECIES identifies all species used in the ESI atlas.

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
Attributes	SPECIES_ID	integer
	NAME	character
	GEN_SPEC	character
	ELEMENT	character
	SUBELEMENT	character
	NHP	character
	DATE_PUB	integer
	EL_SPE	character

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

SPECIES_ID

5.1.2.2. ATTRIBUTE DEFINITION:

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

NAME

5.1.2.2. ATTRIBUTE DEFINITION:

Species common name

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Alewife
American coot
American cupscale
American oyster (eastern)
American oystercatcher
American shad
American wigeon
Atlantic croaker
Atlantic herring
Atlantic menhaden
Atlantic sturgeon
Atlantic white-sided dolphin
Awl-leaved rush
Bald eagle
Bald eagle
Bartons St. Johns-wort
Bay anchovy
Black drum
Black duck
Black seabass
Black skimmer
Black tern
Black-based quillwort
Black-crowned night heron
Black-fruited spikerush
Blue crab
Blueback herring
Bluefish
Blue-winged teal
Bog asphodel
Bottlenose dolphin

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Boykins lobelia
Brant
Brittons spikerush
Brown pelican
Brydes whale
Bufflehead
Bur-marigold
Canada goose
Canvasback
Cattle egret
Channel catfish
Channeled whelk
Clustered beaked rush
Coast flatsedge
Common dolphin
Common eider
Common goldeneye
Common merganser
Common moorhen
Common tern
Cut-leaved water-milfoil
Cypress-swamp sedge
Diamondback terrapin
Double-crested cormorant
Dwarf sperm whale
Eelgrass
Featherfoil
Fin whale
Fin whale
Floating pennywort
Fog fruit
Forsters tern
Gadwall
Glade spurge
Glossy ibis
Goldeneye
Grass-like beaked rush
Gray seal
Great black-backed gull

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Great blue heron
Great cormorant
Great egret
Greater scaup
Greater yellowlegs
Green sea turtle
Green-backed heron
Green-winged teal
Gull-billed tern
Gulls
Harbor porpoise
Harbor seal
Harp seal
Herring gull
Hooded merganser
Hooded seal
Horseshoe crab
Humpback whale
Humpback whale
Kemps ridley sea turtle
Kemps ridley sea turtle
King rail
Knieskerns beaked rush
Knobbed whelk
Koehns tooth-cup
Lace-lip ladies-tresses
Largemouth bass
Larger buttonweed
Laughing gull
Least bittern
Least sandpiper
Least tern
Lesser bladderwort
Lesser scaup
Lesser yellowlegs
Little blue heron
Loggerhead sea turtle
Loggerhead sea turtle
Long-finned pilot whale

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Longs bulrush
Mallard
Merganser
Mink
Minke whale
Minute duckweed
Mudweed
Muskrat
Mute swan
New Jersey rush
Northern harrier
Northern kingfish
Northern lobster
Northern pintail
Northern quahog (hard clam)
Northern raccoon
Northern right whale
Northern right whale
Northern shoveler
Oldsquaw
Osprey
Peregrine falcon
Peregrine falcon
Pied-billed grebe
Pine Barren boneset
Piping plover
Piping plover
Porgy (scup)
Pumpkin Ash
Puttyroot
Pygmy sperm whale
Rare-flowering beaked rush
Red goosefoot
Redhead
Ring-billed gull
Ring-necked duck
Rissos dolphin
River otter
Robin-run-away

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Roseate tern
Rough cottongrass
Rough flatsedge
Rough-toothed dolphin
Ruddy duck
Salt marsh bulrush
Scaup
Scoter
Seabeach amaranth
Sea-beach milkwort
Seaside alder
Seaside crowfoot
Sea-side evening primrose
Seatrout (weakfish)
Sei whale
Sei whale
Semipalmated sandpiper
Shorebirds
Shortfin pilot whale
Short-fruited rush
Shortnose sturgeon
Shortnose sturgeon
Shortnose sturgeon
Slender water-milfoil
Small yellow pond lily
Small-headed beaked rush
Snow goose
Snowy egret
Snowy orchid
Solitary sandpiper
Sora rail
Sperm whale
Spot
Spotted sandpiper
Squid
Squirrel (red) hake (ling)
Stenellid dolphin
Stinking fleabane
Stout smartweed

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Striped bass
Summer flounder
Surf scoter
Swamp-pink
Tautog
Terns
Thread-leaved beaked rush
Tricolored heron
Twisted spikerush
Virginia joint-vetch
Virginia rail
Virginia thistle
Wading birds
Walters St. Johns-wort
Water oak
Waterfowl
Whistling swan (tundra swan)
White perch
White-winged scoter
Whorled nut rush
Winter flounder
Wood duck
Wrinkled jointgrass
Yellow perch
Yellow-crowned night heron

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

GEN_SPEC

5.1.2.2. ATTRIBUTE DEFINITION:

Species scientific name

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Acipenser brevirostrum
Acipenser brevirostrum
Acipenser brevirostrum
Acipenser oxyrhynchus
Actitis macularia
Aeschynomene virginica
Aix sponsa
Alnus maritima
Alosa aestivalis
Alosa pseudoharengus
Alosa sapidissima
Amaranthus pumilus
Ammannia latifolia
Anas acuta
Anas americana
Anas clypeata
Anas crecca
Anas discors
Anas platyrhynchos
Anas rubripes
Anas strepera
Anchoa mitchilli
Aplectrum hyemale
Ardea herodias
Aythya affinis
Aythya americana
Aythya collaris
Aythya marila
Aythya spp.
Aythya valisineria
Balaenoptera acutorostrata
Balaenoptera borealis
Balaenoptera borealis
Balaenoptera edeni
Balaenoptera physalus
Balaenoptera physalus
Bidens bidentoides
Branta bernicla
Branta canadensis

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Brevoortia tyrannus
Bubulcus ibis
Bucephala albeola
Bucephala clangula
Bucephala spp.
Busycon canaliculatum
Busycon carica
Butorides striatus
Calidris minutilla
Calidris pusilla
Callinectes sapidus
Caretta caretta
Caretta caretta
Carex joorii
Casmerodius albus
Centropristis striata
Charadrius melodus
Charadrius melodus
Chelonia mydas
Chen caerulescens
Chenopodium rubrum
Chlidonias niger
Circus cyaneus
Cirsium virginianum
Clangula hyemalis
Clupea harengus harengus
Coelorachis rugosa
Crassostrea virginica
Cynoscion regalis
Cyperus polystachyos
Cyperus retrofractus
Cystophora cristata
Dalibarda repens
Delphinus delphis
Diodia virginiana
Egretta caerulea
Egretta thula
Egretta tricolor
Eleocharis brittonii

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Eleocharis melanocarpa
Eleocharis tortilis
Eriophorum tenellum
Eubalaena glacialis
Eubalaena glacialis
Eupatorium resinosum
Euphorbia purpurea
Falco peregrinus
Falco peregrinus
Fraxinus profunda
Fulica americana
Gallinula chloropus
Glaux maritima
Globicephala macrorhynchus
Globicephala melaena
Grampus griseus
Haematopus palliatus
Haliaeetus leucocephalus
Haliaeetus leucocephalus
Halichoerus grypus
Helonias bullata
Homarus americanus
Hottonia inflata
Hydrocotyle ranunculoides
Hypericum adpressum
Ictalurus punctatus
Isoetes melanopoda
Ixobrychus exilis
Juncus brachycarpus
Juncus caesariensis
Juncus coriaceus
Kogia breviceps
Kogia simus
Lagenorhynchus acutus
Larus argentatus
Larus atricilla
Larus delawarensis
Larus marinus
Leiostomus xanthurus

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Lemna perpusilla
Lepidochelys kempii
Lepidochelys kempii
Limosella subulata
Limulus polyphemus
Lobelia boykinii
Loligo peali
Lophodytes cucullatus
Lutra canadensis
Lygnus olor
Malaclemys terrapin
Megaptera novaeangliae
Megaptera novaeangliae
Melanitta deglandi
Melanitta perspicillata
Melanitta spp.
Menticirrhus saxatilis
Mercenaria mercenaria
Mergus merganser
Mergus spp.
Micropogonias undulatus
Micropterus salmoides
Morone americana
Morone saxatilis
Mustela vison
Myriophyllum pinnatum
Myriophyllum tenellum
Narthecium americanum
Nuphar microphyllum
Nyctanassa violacea
Nycticorax nycticorax
Oenothera humifusa
Olor columbianus
Ondatra zibethicus
Oxyura jamaicensis
Pagophilus groenlandicus
Pandion haliaetus
Paralichthys dentatus
Pelecanus occidentalis

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Perca flavescens
Phalacrocorax auritus
Phalacrocorax carbo
Phoca vitulina
Phocoena phocoena
Phyla lanceolata
Physeter catodon
Platanthera nivea
Plegadis falcinellus
Pluchea foetida
Podilymbus podiceps
Pogonias cromis
Polygonum densiflorum
Pomatomus saltatrix
Porzana carolina
Procyon lotor
Pseudopleuronectes americanus
Quercus nigra
Rallus elegans
Rallus limicola
Ranunculus cymbalaria
Rhynchospora filifolia
Rhynchospora globularis
Rhynchospora glomerata
Rhynchospora knieskernii
Rhynchospora microcephala
Rhynchospora rariflora
Rynchops niger
Sacciolepis striata
Scirpus longii
Scirpus robustus
Scleria verticillata
Somateria mollissima
Spiranthes laciniata
Stenella sp.
Steno bredanensis
Stenotomus chrysops
Sterna antillarum
Sterna dougallii

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Sterna fosteri
Sterna hirundo
Sterna nilotica
Tautoga onitis
Triadenum walteri
Tringa flavipes
Tringa melanaleuca
Tringa solitaria
Tursiops truncatus
Urophycis chuss
Utricularia minor
Zostera marina

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

ELEMENT

5.1.2.2. ATTRIBUTE DEFINITION:

Biological element

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
BIRD	Birds
FISH	Fish
HABITAT	Habitats and Rare Plants
INVERT	Invertebrates
M_MAMMAL	Marine Mammals
REPTILE	Reptiles and Amphibians
T_MAMMAL	Terrestrial Mammals

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
SUBELEMENT

5.1.2.2. ATTRIBUTE DEFINITION:
Species subgroup

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

anadromous
cephalopod
clam
crab
diving
dolphin
gastropod
gull_tern
lobster
mustelid
oyster
raptor
rodent
sav (submerged aquatic vegetation)
seal
shorebird
shrub
special
turtle
wading
waterfowl
whale

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:

NHP

5.1.2.2. ATTRIBUTE DEFINITION:

This field is blank because no NHP information was gathered when this atlas was published. The field is included here to maintain consistency with the latest ESI data structure.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
	Not supplied with this atlas

5.1.2.1. ATTRIBUTE LABEL:

DATE_PUB

5.1.2.2. ATTRIBUTE DEFINITION:

This field is blank because no NHP information was gathered when this atlas was published. The field is included here to maintain consistency with the latest ESI data structure.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
	Not supplied with this atlas

5.1.2.1. ATTRIBUTE LABEL:

EL_SPE

5.1.2.2. ATTRIBUTE DEFINITION:

Concatenation of the first character of the ELEMENT and the SPECIES_ID, which provides the link from the BIORES table.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

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5.1. DETAILED DESCRIPTION: STATUS

The data table STATUS identifies the species that are listed as either threatened or endangered on state or federal lists.

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
Attributes	ELEMENT	character
	SPECIES_ID	integer
	STATE	character
	S_F	character
	T_E	character
	DATE_PUB	integer
	EL_SPE	character

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ELEMENT

5.1.2.2. ATTRIBUTE DEFINITION:

Major categories of biological data

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
BIRD	Birds
FISH	Fish
HABITAT	Habitats and Rare Plants
INVERT	Invertebrates
M_MAMMAL	Marine Mammals
REPTILE	Reptiles and Amphibians
T_MAMMAL	Terrestrial Mammals

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:
SPECIES_ID

5.1.2.2. ATTRIBUTE DEFINITION:
Numeric identifier for each species and is unique within each element and refers to a nationwide ESI species list maintained by NOAA

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
STATE

5.1.2.2. ATTRIBUTE DEFINITION:
Two-letter state abbreviation

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
DE	Delaware
NJ	New Jersey
PA	Pennsylvania

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:

S_F

5.1.2.2. ATTRIBUTE DEFINITION:

State and Federal status

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
S	State listed
S/F	State and Federally listed

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

USFWS, New Jersey Office of Natural Lands Management, and the Pennsylvania Natural Diversity Inventory

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

T_E

5.1.2.2. ATTRIBUTE DEFINITION:

Threatened and endangered status

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
E	Endangered
E/E	Endangered on State and Federal lists
E/T	Endangered on State lists; Threatened on Federal lists
T	Threatened
T/T	Threatened on State and Federal lists

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
USFWS, New Jersey Office of Natural Lands Management, and the Pennsylvania Natural Diversity Inventory

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
DATE_PUB

5.1.2.2. ATTRIBUTE DEFINITION:
This is the date the atlas was published when the given state and federal listings were in effect. In some of the earlier atlases, no date may be given because this was not a data item at the time of original publication.

5.1.2.1. ATTRIBUTE LABEL:
EL_SPE

5.1.2.2. ATTRIBUTE DEFINITION:
Concatenation of the first character of the ELEMENT and the SPECIES_ID, which provides the link from the BIORES and SPECIES tables.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1. DETAILED DESCRIPTION: T_MAMMAL

The data layer T_MAMMAL contains the polygons with terrestrial mammal species. The following T_MAMMAL species are found in the Delaware, New Jersey, Pennsylvania ESI data set:

SPECIES ID	NAME
8	River otter
37	Muskrat
38	Mink
44	Northern raccoon

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
GT-Polygons	ID	integer
	RARNUM	integer

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ID

5.1.2.2. ATTRIBUTE DEFINITION:

A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas number (12), element number (9), and record number. ID values of 9999 are holes in polygons and do not contain information.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

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 BIOFILE table

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
1-N	Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

6.0. DISTRIBUTION INFORMATION

6.1. DISTRIBUTOR

6.1.1. CONTACT PERSON PRIMARY

6.1.1.1. CONTACT PERSON:

John Kaperick

6.1.1.2. CONTACT ORGANIZATION:

NOAA, Office of Response and Restoration

6.1.4. CONTACT ADDRESS

6.1.4.1. ADDRESS TYPE:

Physical Address

6.1.4.2. ADDRESS:

7600 Sand Point Way N.E.

6.1.4.3. CITY:

Seattle

6.1.4.4. STATE OR PROVINCE:

WA

6.1.4.5. POSTAL CODE:

98115-6349

6.1.5. CONTACT VOICE TELEPHONE:

(206) 526-6944

6.1.7. CONTACT FACSIMILE TELEPHONE:

(206) 526-6329

6.2. RESOURCE DESCRIPTION:

ESI Atlas for Delaware, New Jersey, Pennsylvania

6.3. DISTRIBUTION LIABILITY:

Although this data has 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.

6.5. CUSTOM ORDER PROCESS

Contact NOAA for distribution options (see 6.1.1.).

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7.0. METADATA REFERENCE INFORMATION

7.1. METADATA DATE:
200011

7.2. METADATA REVIEW DATE:
200011

7.4. METADATA CONTACT

7.4.1. CONTACT PERSON PRIMARY

7.4.1.1. CONTACT PERSON:
Jill Petersen

7.4.1.2. CONTACT ORGANIZATION:
NOAA, Office of Response and Restoration

7.4.3. CONTACT POSITION:
GIS Manager

7.4.4. CONTACT ADDRESS

7.4.4.1. ADDRESS TYPE:
Physical Address

7.4.4.2. ADDRESS:
7600 Sand Point Way N.E.

7.4.4.3. CITY:
Seattle

7.4.4.4. STATE OR PROVINCE:
Washington

7.4.4.5. POSTAL CODE:
98115-6349

7.4.5. CONTACT VOICE TELEPHONE:
(206) 526-6944

7.4.7. CONTACT FACSIMILE TELEPHONE:
(206) 526-6329

7.4.8. CONTACT ELECTRONIC MAIL ADDRESS:
jill_petersen@hazmat.noaa.gov.us

7.5. METADATA STANDARD NAME:
Content Standards for Digital Geospatial Metadata

7.6. METADATA STANDARD VERSION:
19940608

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