

GEORGIA  
ENVIRONMENTAL SENSITIVITY  
INDEX METADATA

June 1997

*Prepared By:*

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Hazardous Materials Response and Assessment Division  
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FILE DESCRIBES: Digital data for 1997 Georgia Environmental Sensitivity Index. Data were compiled and digitized at Research Planning, Inc., Columbia, South Carolina.

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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), Office of Ocean Resources Conservation and Assessment, Seattle, Washington 98115; and Research Planning, Inc. (RPI), 1121 Park Street, Post Office Box 328, Columbia, South Carolina 29202

**1.1.2. PUBLICATION DATE:**

199706

**1.1.4. TITLE:**

Sensitivity of Coastal Environments and Wildlife to Spilled Oil: Georgia

**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:**

Georgia

**1.1.8. PUBLICATION INFORMATION**

**1.1.8.1. PUBLICATION PLACE:**

Seattle, Washington

**1.1.8.2. PUBLISHER:**

NOAA, Office of Ocean Resources Conservation and Assessment

**1.1.9. OTHER CITATION DETAILS:**

Prepared by Research Planning, Inc., Columbia, South Carolina for the Hazardous Materials Response and Assessment Division, National Oceanic and Atmospheric Administration, Seattle, Washington

**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 shoreline of Georgia. ESI data characterize estuarine 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 of Georgia were originally mapped during overflights conducted in the fall of 1984. They were updated onto 1:24,000 U.S. Geological Survey (USGS) topographic maps by an experienced coastal geologist in January 1997 using recent vertical aerial photographs from 1993-1996 at various scales. Portions of the coast were flown in February 1997 to verify the photo-interpretation. The biological and human-use resources data were compiled by regional biologists in 1996 and 1997.

**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:**

-81.750

**1.5.1.2. EAST BOUNDING COORDINATE:**

-79.102

**1.5.1.3. NORTH BOUNDING COORDINATE:**

32.250

**1.5.1.4. SOUTH BOUNDING COORDINATE:**

30.625

**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:**

Georgia

**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 this data.

Acknowledgment of NOAA, RPI, and other 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 NOAA's Coastal Services Center in Charleston, South Carolina and NOAA's Hazardous Materials Response and Assessment Division (HMRAD) in Seattle, Washington. The U.S. Coast Guard provided

aircraft support during the shoreline habitat mapping. The Georgia Department of Transportation and the USGS provided the aerial photography used during the shoreline and habitat mapping. Brad Benggio of NOAA HMRAD assisted greatly with project coordination and guidance.

The biological and human-use data included on the maps were provided by a variety of state and federal agencies, universities, and private individuals. Catherine Main with the Coastal Services Center, in collaboration with the Georgia Department of Natural Resources collected most of the biological and human-use data from resource experts, and assisted with compiling this data onto the maps. NOAA's Strategic Environmental Assessment (SEA) Division in Silver Spring, Maryland provided salinity zone contours and the fish and shellfish distribution data.

At RPI, Scott Zengel was the project manager. Shoreline mapping was conducted by Todd M. Montello. The biological and human-use data were compiled onto basemaps and edited by Scott Zengel, Christopher Locke, and Kara Hastings. Kara Hastings was the GIS coordinator. Kara Hastings, Christopher Locke, Mark White, and William Holton entered the data and produced the final maps under the supervision of Joanne Halls. Systems administration was coordinated by William Holton. Graphics were provided by Joe Holmes. Dot Zaino prepared the final text.

### 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 workstations (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:

birds.e00	biores.e00	breed.e00
esi.e00	fish.e00	habitats.e00
hydro.e00	index.e00	invert.e00
mgt.e00	m_mammal.e00	nests.e00
offshore.e00	pnts_lut.e00	poly_lut.e00
reptiles.e00	salinity.e00	seasonal.e00
soc_data.e00	soc_lut.e00	socecon.e00
sources.e00	species.e00	status.e00

The entire data set is approximately 50 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 coverage. 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 then 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 review the entire series of maps, check all data, and make 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 data is written to tape and metadata is written.

### 2.3. **COMPLETENESS REPORT:**

#### Shoreline Habitat Mapping:

The intertidal habitats of Georgia were originally mapped during overflights conducted in the fall of 1984. They were updated onto 1:24,000 USGS topographic maps by an experienced coastal geologist in January 1997 using recent vertical aerial photographs from 1993-96 at various scales. Where appropriate, multiple habitats were delineated for each shoreline segment. Portions of the coast were flown in February 1997 to verify the photo-interpretation. The aerial surveys were carried out using a fixed-wing aircraft, flying at elevations of 500-1000 feet and slow air speed. 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, boat wake, tidal action, 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 contributed the biological data. These data denote the key biological resources that are most likely at risk in the event of an oil spill. Six major categories, or ELEMENTS, of biological resources were considered during data compilation: birds, fish, habitats, invertebrates, marine mammals, and reptiles.

The ELEMENTs generally correspond to the coverage or geographic data layer names. There are also six attribute, or data tables, BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS, that are used to store the complex biological data (Fig. 1). Each biological polygon coverage (BIRDS, FISH, HABITATS, INVERT, M\_MAMMAL, OFFSHORE, and REPTILES) is linked to the Biological Resources table (BIORES) using the lookup table POLY\_LUT. The bird nesting sites (NESTS) are linked to the BIORES table using the lookup table PNTS\_LUT. The items in BIORES are: 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 descriptive (LOW, MEDIUM, HIGH, etc.) or an actual count of the number of individuals or nests associated with a polygon or point. 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

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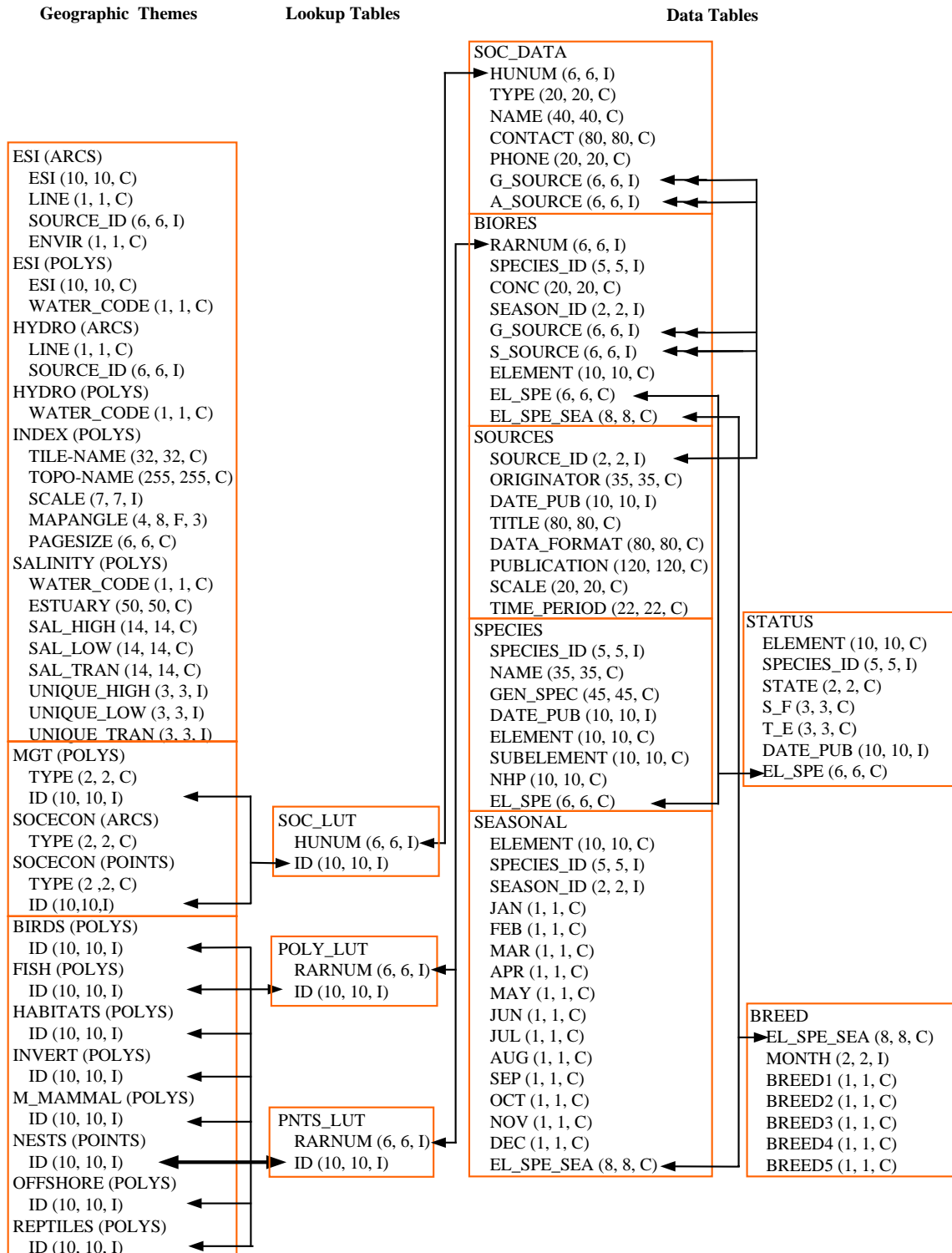


FIGURE 1. Relationship between biology coverages and attribute files.

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:

ELEMENT	SUBELEMENT
BIRD	diving
	gull_tern
	raptor
	shorebird
	wading
	waterfowl
FISH	anadromous
	special
MARINE MAMMAL	manatee
	whale
HABITAT	hardbottom
	rare plant
INVERTEBRATE	bivalve
	crab
	gastropod
	shrimp
REPTILE	turtle

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, and EL\_SPE.

The SEASONAL data table stores the monthly presence of each species where each species is defined as three-character monthly abbreviations. The BIORES table is linked to the SEASONAL table using either the combination of SPECIES\_ID, ELEMENT, and SEASON\_ID items, or the item EL\_SPE\_SEA, which contains the concatenation of these items.

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), and up to 12 records (corresponding to each month of the year) can have different

attributes and therefore separate records. The categories for each element of the items BREED1 through BREED5 are:

ELEMENT	BREED 1	BREED 2	BREED 3	BREED 4	BREED 5
BIRD	nesting	laying	hatching	fledging	
FISH	spawning	outmigration	larvae	juvenile	adults
INVERT	spawning	larvae	mating	juvenile	adults
M_MAMMAL	mating	calving	pupping	molting	
REPTILE	nesting	hatching	internesting		

NOTE: There are no BREED variables for HABITATS.

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.

Human-Use Resources:

Several human-use, or socio-economic, features are included in ESI atlases. Entity points and complete chains (arcs) are digitized into the coverage SOCECON and managed area polygonal data are stored in the MGT coverage. Both data sets are linked to the data table SOC\_DATA using the SOC\_LUT lookup table and the items HUNUM and ID. ID is a concatenation of atlas number (35), element number (SOCECON = 10 and MGT = 11), and unique record number.

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

Entity Points		Polygons	
Feature	SOCECON	Feature	SOCECON
Access	A2	Marine Sanctuary	MS
Airport	A	National Park	NP
Aquaculture	AQ	State Park	P
Beach	B	Wildlife Refuge	WR
Boat Ramp	BR		
Coast Guard	CG		
Commercial Fishing	CF		
Diving	D		
Hazardous Waste Site	HW		
Historical Site	HS		
Marina	M		
Recreational Fishing	RF		
Water Intake	WI		
<b>Complete Chains</b>			
Feature	SOCECON		
Bridge	R		
State Border	SB		

The table SOC\_DATA contains the human-use number (HUNUM), feature type (SOC\_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 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 Denominator	2.5.1.4 Source Time Period
Harris, M. Georgia Department of Natural Resources	N/A	Bird Concentration Areas for Coastal Georgia	Expert knowledge	N/A	N/A	1996
Forester, D. and B. Monroe Georgia Department of Natural Resources	N/A	Waterfowl Concentrations and Other Resources for Altamaha WMA	Expert knowledge	N/A	N/A	1996
Winn, B. Georgia Department of Natural Resources	N/A	Bird Concentrations, Bird Seasonalities, and Sea Turtle Areas for Coastal Georgia	Expert knowledge	N/A	N/A	1996
Mason, G. Georgia Department of Natural Resources	N/A	Sensitive Bird Locations for Coastal Georgia	Expert knowledge	N/A	N/A	1996
Calver, S. U.S. Army Corps of Engineers	N/A	Bird Concentrations Associated with Dredged Material Disposal Sites	Hardcopy maps and expert knowledge	N/A	Varies	1996
McIntyre, K. Little St. Simons Island	N/A	Natural Resources for Little St. Simons Island, GA	Hardcopy maps	N/A	Unknown	1996

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
Glock, C. U.S. Fish and Wildlife Service	N/A	Resources for Blackbeard Island	Expert knowledge	N/A	N/A	1996
Bjork, J. National Park Service	N/A	Biological and Human-use Features for Cumberland Island National Seashore	Expert knowledge	N/A	N/A	1997
Bowers, J. and D. Edwards Georgia Department of Natural Resources	N/A	Additional Bird Resources for Altamaha WMA	Expert knowledge	N/A	N/A	1997
Robinette, J. U.S. Fish and Wildlife Service	N/A	Various Bird and Other Resources for Coastal Georgia	Expert knowledge	N/A	N/A	1996
Strange, T. South Carolina Department of Natural Resources	N/A	Waterfowl Habitat for Savannah National Wildlife Refuge	Expert knowledge	N/A	N/A	1995

**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 Denominator	2.5.1.4 Source Time Period
Research Planning, Inc.	N/A	Overflight/ Photointerpreted maps	Hardcopy maps	N/A	24000	1996
Kelie Cochran	Varies	National Wetlands Inventory	Complex polygons	Georgia Department of Natural Resources, Coastal Resources Division	24000	Varies
Jill Petersen	9,1996	ESI Shoreline Classification (MSRC)	Complex polygons and complete chains	NOAA HAZMAT	24000	1985

**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
Woodward, S. Georgia Department of Natural Resources	N/A	Special Concentration Areas for Red Drum, Spotted Seatrout, Tarpon, and Sheepshead	Expert knowledge	N/A	N/A	1996
Guadagnoli, D. Georgia Department of Natural Resources	N/A	Special Concentration Areas for Shortnose and Atlantic Sturgeon	Expert knowledge	N/A	N/A	1996

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
Nicholson, N. Georgia Department of Natural Resources	N/A	Inshore Artificial Reefs and Associated Special Concentration Areas for Fish	Expert knowledge	N/A	N/A	1996
Flournoy, P. Georgia Department of Natural Resources	N/A	Special Concentration Areas for Shortnose and Atlantic Surgeon	Expert knowledge	N/A	N/A	1996
Score, D. Gray's Reef National Marine Sanctuary	N/A	Reef Fish Point Surveys for Gray's Reef National Marine Sanctuary	Digital tables	N/A	N/A	1996
Parker, R.	1994	Video Transect Estimates of Reef Fish Abundance	Digital tables	Fishery Bulletin 92, pp. 787-799	N/A	1994
Score, D. Gray's Reef National Marine Sanctuary	N/A	Sand Bottom Fish for Gray's Reef National Marine Sanctuary	Expert knowledge	N/A	N/A	1996
NOAA SEA Division and Georgia Department of Natural Resources	1996	Estuarine Living Marine Resources Database, and Offshore Fish Distribution by Depth Zone	Digital polygons	Database Contacts: Mark Monaco and Tracy Gill	Varies	1996

**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
McIntyre, K. Little St. Simons Island	N/A	Natural Resources for Little St. Simons Island, GA	Hardcopy maps	N/A	Unknown	1996
Danforth, W.	N/A	Gray's Reef National Marine Sanctuary Side-Scan Sonar Survey	Hardcopy maps	N/A	Unknown	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
Research Planning, Inc.	N/A	Overflight/ Photointerpreted maps	Hardcopy maps	N/A	24000	1996
Kelie Cochran	Varies	National Wetlands Inventory	Complex polygons	Georgia Department of Natural Resources, Coastal Resources Division	24000	Varies
Jill Petersen	9,1996	ESI Shoreline Classification (MSRC)	Complex polygons and complete chains	NOAA HAZMAT	24000	1985
Drury, K.M. Savannah E&P Co.	N/A	Kraft Power Plant Water Intake	Expert knowledge	N/A	N/A	1996

**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.	1997	Map index	Complex polygons	NOAA	24000	1997

**2.5.1. SOURCE INFORMATION:**

Coverage or theme name: INVERT

**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
Stevens, S. Georgia Department of Natural Resources	N/A	Shellfish Beds, Shellfish Harvest Sites, Beaches and Access for Coastal Georgia	Expert knowledge and hardcopy maps	N/A	Unknown	1996
NOAA SEA Division and Georgia Department of Natural Resources	1996	Estuarine Living Marine Resources Database, and Offshore Fish Distribution by Depth Zone	Digital polygons	Database Contacts: Mark Monaco and Tracy Gill	Varies	1996

**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
U.S. Fish and Wildlife Service	N/A	Boundary Maps for NWRs in Coastal Georgia	Hardcopy maps	USFWS, Division of Realty, Atlanta, GA	Varies	1980-1995
National Park Service	1971	Fort Pulaski Master Plan	Hardcopy map	N/A	Varies	1968-1971
Sapelo Island NERR	1996	Sapelo Island NERR Management Plan	Hardcopy maps	N/A	Varies	1996
Georgia Department of Natural Resources, Game and Fish Division	N/A	Wildlife Management Area Maps and Boundaries	Hardcopy maps	N/A	Varies	Varies
Bohne, R. Gray's Reef National Marine Sanctuary	N/A	Human-use and Recreational Features for Gray's Reef  National Marine Sanctuary	Expert knowledge	N/A	N/A	1996

**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
Zoodsma, B. Georgia Department of Natural Resources	N/A	Manatee Locations for Coastal Georgia	Expert knowledge	N/A	N/A	1996
National Marine Fisheries Service	1994	Designated Critical Habitat for the Northern Right Whale	Hardcopy report and map	Federal Register 59 (106):28793-28808	N/A	1994
Brown, J. National Marine Fisheries Service	N/A	Offshore Distribution of Whales and Sea Turtles	Expert knowledge	N/A	N/A	1996

**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
McIntyre, K. Little St. Simons Island	N/A	Natural Resources for Little St. Simons Island, GA	Hardcopy maps	N/A	Unknown	1996
Mason, G. Georgia Department of Natural Resources	N/A	Sensitive Bird Locations for Coastal Georgia	Expert knowledge	N/A	N/A	1996
Robinette, J. U.S. Fish and Wildlife Service	N/A	Various Bird and Other Resources for Coastal Georgia	Expert knowledge	N/A	N/A	1996

GEORGIA METADATA

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
Georgia Department of Natural Resources, Coastal Resources Division	N/A	Least Tern Nesting Database	Hardcopy tables	N/A	N/A	1996
Bryan, A.L.	1994	Wood Stork Roost Sites in the Coastal Zone of Georgia and South Carolina in 1994	Hardcopy report and maps	Savannah River Ecology Laboratory, Aiken, SC	24000	1994
Georgia Department of Natural Resources, Coastal Resources Division	N/A	Georgia Bald Eagle Nest Locations	Hardcopy tables	Database Contact: Mike Harris	N/A	1995-1996
Georgia Department of Natural Resources, Coastal Resources Division	N/A	Wood Stork and Wading Bird Colony Surveys, 1995	Hardcopy tables	N/A	N/A	1995
Georgia Department of Natural Resources, Coastal Resources Division	N/A	Wood Stork and Wading Bird Colony Surveys, 1994	Hardcopy tables	N/A	N/A	1994

**2.5.1. SOURCE INFORMATION:**

Coverage or theme name: OFFSHORE

**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
NOAA SEA Division and Georgia Department of Natural Resources	1996	Estuarine Living Marine Resources Database, and Offshore Fish Distribution by Depth Zone	Digital polygons	Database Contacts: Mark Monaco and Tracy Gill	Varies	1996

**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 Denominator	2.5.1.4 Source Time Period
Winn, B. Gray's Reef National Marine Sanctuary	N/A	Bird Concentrations, Bird Seasonalities, and Sea Turtle Areas for Coastal Georgia	Expert knowledge	N/A	N/A	1996

**2.5.1. SOURCE INFORMATION:**

Coverage or theme name: SALINITY

**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
NOAA SEA Division and Georgia Department of Natural Resources	1996	Estuarine Living Marine Resources Database, and Offshore Fish Distribution by Depth Zone	Digital polygons	Database Contacts: Mark Monaco and Tracy Gill	Varies	1996

**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 Denominator	2.5.1.4 Source Time Period
Cave, K. National Park Service	N/A	Human-use Resources for Fort Pulaski National Monument	Expert knowledge	N/A	N/A	1996
Whitted, J. University of Georgia	N/A	Guides to Coastal Fishing in Georgia (by County)	Hardcopy maps	University of Georgia, Marine Extension Service	Unknown	1980-1982
Georgia Department of Natural Resources	1996	Angler's Guide to Maps Georgia Saltwater Fishing Access Sites	Hardcopy maps	Georgia Department of Natural Resources, Coastal Resources Division, Brunswick, GA	Unknown	1996

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
Caldwell, N.	N/A	Additional Water Intake for the Savannah River	Expert knowledge	N/A	N/A	1997
Walker, R. Skidaway Institute	N/A	Locations and Contacts for Coastal Aquaculture Sites	Expert knowledge	N/A	N/A	1996
Rogers, L. Georgia Department of Natural Resources	N/A	Industrial Water Intake Locations for Coastal Georgia	Expert knowledge	N/A	N/A	1996
Drury, K.M. Savannah E&P Co.	N/A	Kraft Power Plant Water Intake	Expert knowledge	N/A	N/A	1996
McIntyre, K. Little St. Simons Island	N/A	Natural Resources for Little St. Simons Island, GA	Hardcopy maps	N/A	Unknown	1996
National Park Service	1971	Fort Pulaski Master Plan	Hardcopy map	N/A	Varies	1968-1971
Georgia Department of Natural Resources	1995	Georgia Offshore Fishing Guide	Hardcopy map	Georgia DNR, Coastal Resources Division, Brunswick, GA	1 in = .5 n m	1995
Sullivan, B.	N/A	Sapelo Island Resources	Expert knowledge	N/A	N/A	1996
Sapelo Island NERR	1996	Sapelo Island NERR Management Plan	Hardcopy maps	N/A	Varies	1996
Glock, C. U.S. Fish and Wildlife Service	N/A	Resources for Blackbeard Island	Expert knowledge	N/A	N/A	1996

GEORGIA METADATA

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
Andrew, G. Georgia Department of Natural Resources	N/A	Coastal Hazardous Waste Sites	Hardcopy maps	N/A	24000	1996
Harris, D.	N/A	CSS Nashville Shipwreck Location	Expert knowledge	N/A	N/A	1996
Georgia Department of Natural Resources, Historic Preservation Division	N/A	Historic Sites Database	Digital point data (ASCII)	Database Contact: Diane Wilson	Unknown	1996
Research Planning, Inc.	N/A	Overflight/ Photointerpreted Maps	Hardcopy maps	N/A	24000	1996
Bohne, R. Gray's Reef National Marine Sanctuary	N/A	Human-Use and Recreational Features for Gray's Reef National Marine Sanctuary	Expert knowledge	N/A	N/A	1996
Main, C. NOAA Coastal Service Center	N/A	Locations of Various Human-use Features for the Georgia Coast	Expert knowledge	N/A	N/A	1997
Bjork, J. National Park Service	N/A	Biological and Human-use Features for Cumberland Island National Seashore	Expert knowledge	N/A	N/A	1997

## 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 the map index coverage. The first layer of information digitized was the shoreline with ESI classification. This layer was created using the Marine Spill Response Corporation (MSRC) ESI shoreline attributes, the U.S. Fish and Wildlife Services' National Wetlands Inventory (NWI) data, and original data interpreted by RPI geologists from aerial photographs and overflight observations. The NWI codes were reclassified to ESI polygon codes (Table 1) and any wetlands falling in water were deleted. The digital shoreline was attributed with the MSRC data, updated with field work, checked for completeness, topological and logical consistency, and edited for any errors using the original overflight maps. 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 by NOAA personnel and an in-house RPI expert using the data from regional specialists in the form of verbal discussions, maps, tables, charts, and written descriptions of wildlife distributions. Concurrently, all digital data was imported, merged into the spatial data structure, and checked for completeness. The hardcopy data were digitized, merged with existing digital data, checked using both digital and on-screen procedures, plotted, checked by the biological expert, edited to remove any errors, and plotted for review by the regional specialists. The reviewed 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

**TABLE 1.** NWI to ESI conversion.

<b>ESI</b>	<b>NWI DEFINITION</b>	<b>NWI CODE</b>
10A	Estuarine, intertidal, emergent wetland	E2EM
10B	Riverine, tidal, emergent wetland	R1EM
	Riverine, lower perennial, emergent wetland	R2EM
	Lacustrine, littoral, emergent wetland	L2EM
	Palustrine, emergent wetland	PEM
10C	Estuarine, intertidal, forested wetland	E2FO
	Palustrine, forested wetland	PFO
10D	Estuarine, intertidal, scrub-shrub	E2SS
	Palustrine, scrub-shrub	PSS

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 validated for all relationships.

**2.5.2.3. PROCESS DATE:**

199702-199706

**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 HMRAD

**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.  
Bin C15700

**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

**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

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**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	304	304	385	60,616			364
ESI	1	12,947	12,947	25,701	1,041,411			23,466
FISH	1	757	757	1,665	248,947			1,381
HABITATS	1	12	12	24	6,291			24
HYDRO	1	1,915	1,915	5,522	381,222	174		24,860
INDEX	1	38	38	107	107			71
INVERT	1	700	700	1,519	245,986			1,282
MGT	1	62	62	98	24,867			95
M_MAMMAL	1	134	134	239	53,342			239
NESTS							159	
OFFSHORE	1	7	7	39	11,418			35
REPTILES	1	42	42	71	18,679			65
SALINITY	1	803	803	1,671	251,350			1,393
SOCECON				63	1,633		676	495

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**4.0. SPATIAL REFERENCE INFORMATION**

**4.1. HORIZONTAL COORDINATE SYSTEM DEFINITION**

**4.1.2. PLANAR**

**4.1.2.1. MAP PROJECTION**

**4.1.2.1.1. MAP PROJECTION NAME:**

UTM

**4.1.2.1.2. MAP PROJECTION PARAMETERS:**

**4.1.2.1.2.1. ZONE:**

17

**4.1.2.1.2.2. UNITS:**

Meters

**4.1.4. GEODETIC MODEL**

**4.1.4.1. HORIZONTAL DATUM NAME:**

North American Datum of 1927

**4.1.4.2. ELLIPSOID NAME:**

Clark 1866

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**5.0. ENTITY AND ATTRIBUTE INFORMATION**

**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:
<u>Attributes</u>	
	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 POLY\_LUT and/or PNTS\_LUT lookup 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:**

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 at RPI and NOAA

**5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:**

1-N

**5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:**

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 or actual count of a species concentration at a specific location. Field is blank if no data is available

**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:**

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:**

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:**

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1-N

Unique number

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**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 FISH HABITAT INVERT M_MAMMAL REPTILE	Birds Fish Habitats Invertebrates Marine Mammals Reptiles and Amphibians

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 SPECIES\_ID

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:  
EL\_SPE\_SEA

5.1.2.2. ATTRIBUTE DEFINITION:  
Concatenation of the first character of the ELEMENT, SPECIES\_ID, and SEASON\_ID

**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. DETAILED DESCRIPTION: BIRDS**

The data layer BIRDS contains the polygons with bird species. Although a separate NESTS coverage exists for bird point data, nesting sites depicted as polygonal features are found in the BIRDS data layer. Birds are divided into several species subgroups based on taxonomy, morphology, behavior, and oil spill vulnerability and sensitivity. BIRD species were included either because of their likelihood of impact by an oil spill, or their special protection status as threatened or endangered.

Waterfowl, diving birds (e.g., pelicans, cormorants, etc.), and pelagic birds (e.g., gannets and shearwaters) are usually at greatest risk during oil spills, because they spend nearly all of their time on the water surface, and/or because they become partially or entirely immersed while feeding. Waterfowl can also be contaminated through contact with oiled wetland vegetation. Wading birds are usually at slightly lesser risk, primarily because they become oiled mainly on the legs and bill while wading for prey. Wading bird feathers and upper body parts can be more extensively contaminated, however, by contact with oiled vegetation. Shorebirds usually avoid oil, but may be impacted by loss of feeding areas or intertidal prey, particularly during important migration periods. Gulls may be at risk because they are often attracted to and will prey on sick or injured prey. This behavior may result in oiling of feathers and the ingestion of oil. Terns are additionally at risk when they dive for prey. Raptors may also prey on oiled or injured species and thus may be contaminated themselves or ingest oil. Osprey may additionally be oiled while diving for fish. Passerine birds are typically not at great risk during spills; however, response activities can disturb nesting or damage coastal habitat for these species. Passerine birds of concern during spills include threatened or endangered species, especially if they nest near the shoreline or in wetland habitats such as marshes.

**5.1.1. ENTITY TYPES:**

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:
<u>GT-Polygons</u>	ID 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 POLY\_LUT table. ID is a concatenation of atlas number (35), element number (1), and record number. ID values of zero are holes in polygons and do not contain information.

The following BIRDS species are found in the Georgia ESI atlas:

<b>SPECIES ID</b>	<b>NAME</b>
8	Double-crested cormorant
16	Mallard
17	Northern pintail
18	Green-winged teal
20	Northern shoveler
21	Canvasback
22	Greater scaup
23	Lesser scaup
26	Bufflehead
34	American coot
38	Herring gull
40	Ring-billed gull
42	Bonaparte's gull
52	Wilson's phalarope
54	Great blue heron
55	Whimbrel
56	Spotted sandpiper
58	Greater yellowlegs
59	Lesser yellowlegs
60	Red knot
61	Pectoral sandpiper
62	Least sandpiper
63	Dunlin
66	Western sandpiper
67	Sanderling
69	Semipalmated plover
70	Killdeer
71	Black-bellied plover
73	Ruddy turnstone

<b>SPECIES ID</b>	<b>NAME</b>
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
93	Cattle egret
94	Tricolored heron
97	Green-backed heron
98	Laughing gull
107	Peregrine falcon
115	White ibis
118	Brown pelican
120	Yellow-crowned night heron
121	Anhinga
124	Redhead
132	Wood stork
133	Black skimmer
134	Gull-billed tern
135	Sandwich tern
136	Caspian tern
137	Royal tern
138	Forster's tern
141	American avocet
142	Black-necked stilt
148	Ruddy duck
152	American oystercatcher
153	Piping plover
154	Wilson's plover
155	Willet
156	Semipalmated sandpiper
162	Gadwall
169	American wigeon
179	Pied-billed grebe
180	Ring-necked duck
181	Northern harrier
182	American kestrel
186	Black duck
190	Blue-winged teal
191	Wood duck
192	Common moorhen
193	Black tern

<b>SPECIES ID</b>	<b>NAME</b>
196	Common snipe
198	Hooded merganser
210	Marbled godwit
211	Mottled duck
212	Purple gallinule
213	Stilt sandpiper
214	Solitary sandpiper
218	Red-shouldered hawk
219	Sharp-shinned hawk
220	Merlin
221	Coopers hawk
223	Upland sandpiper
230	Red-tailed hawk
238	White-rumped sandpiper
280	American swallow-tailed kite
284	Buff-breasted sandpiper
286	Dowitcher
290	Peep
293	Yellowlegs
1,001	Gulls
1,003	Waterfowl
1,004	Wading birds
1,008	Terns

**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: BREED**

The data table BREED identifies the life stages and abundances, by month, for each species.

**5.1.1. ENTITY TYPES:**

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:
<u>Attributes</u>	EL_SPE_SEA      character
	MONTH            integer
	BREED1          character
	BREED2          character
	BREED3          character
	BREED4          character
	BREED5          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, SPECIES\_ID, and 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.

5.1.2.4.1.1. 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:**

MONTH

**5.1.2.2. ATTRIBUTE DEFINITION:**

Two-digit calendar month where each species for a particular seasonality. 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 "R" then BREED1 = nesting;

if EL\_SPE\_SEA contains "M" then BREED1 = calving

There are no breeding activities for HABITAT or T\_MAMMAL elements. Only BIRDS, FISH, and INVERT have BREED1 occurring in this ESI atlas

**5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**

Research Planning, Inc.

<b>5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:</b>	<b>5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:</b>
2	Rare
3	Common
4	Abundant
5	Highly abundant
N	Not occurring
Y	Occurring

**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:**

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;  
 if EL\_SPE\_SEA contains "R" then BREED2 = hatching;  
 if EL\_SPE\_SEA contains "M" then BREED2 = pupping  
 Only INVERT has BREED2 activities occurring in this atlas

**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:
2	Rare
3	Common
4	Abundant
5	Highly abundant
N	Not occurring
Y	Occurring

**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:**

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;

if EL\_SPE\_SEA contains "I" then BREED3 = mating;

if EL\_SPE\_SEA contains "R" then BREED3 = internesting;

if EL\_SPE\_SEA contains "M" then BREED3 = molting

Only FISH and INVERT have BREED3 activities occurring in this atlas

**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:
2	Rare
3	Common
4	Abundant
5	Highly abundant
N	Not occurring
Y	Occurring

**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:**

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 "F" then BREED4 = juvenile;

if EL\_SPE\_SEA contains "I" then BREED4 = juvenile

Only FISH and INVERT have BREED4 activities occurring in this atlas

**5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**

Research Planning, Inc.

<b>5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:</b>	<b>5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:</b>
2	Rare
3	Common
4	Abundant
5	Highly abundant
N	Not occurring
Y	Occurring

**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:**

BREED5

**5.1.2.2. ATTRIBUTE DEFINITION:**

Species' breeding or life stage information where:

if EL\_SPE\_SEA contains "F" then BREED5 = adults;

if EL\_SPE\_SEA contains "I" then BREED5 = adults

Only FISH and INVERT have BREED5 activities occurring in this atlas

**5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**

Research Planning, Inc.

<b>5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:</b>	<b>5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:</b>
2	Rare
3	Common
4	Abundant
5	Highly abundant
N	Not occurring
Y	Occurring

**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: ESI**

The data layer ESI contains arc (Complete Chains) and polygonal (GT-Polygons) features for the ESI shoreline classification and is based on *Environmental Sensitivity Index Guidelines, Version 2.0* (Halls, J., J. Michel, S. Zengel, and J. Dahlin, 1996, Hazardous Materials Response and Assessment Division, NOAA). The ESI classification was performed in February 1997.

**5.1.1. ENTITY TYPES:**

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

**5.1.2. ATTRIBUTES:**

**5.1.2.1. ATTRIBUTE LABEL:**

ESI

**5.1.2.2. ATTRIBUTE DEFINITION:**

The intertidal habitats of Georgia were originally mapped during overflights conducted in the fall of 1984. They were updated onto 1:24,000 USGS topographic maps by an experienced coastal geologist in January 1997 using a set of vertical aerial photographs from late 1993-1996. Where appropriate, multiple habitats were delineated for each shoreline segment. Portions of the coast were flown in February 1997 to verify the photointerpretation. The aerial surveys were carried out using fixed-wing aircraft flying at elevations of 500-1,000 feet and slow air speed.

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 sensitivity of a particular intertidal 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. A comprehensive shoreline habitat ranking system has been developed for the entire U.S. The shoreline habitats present in Georgia are listed below in order of increasing sensitivity to spilled oil.

- 1B) Exposed, Solid Man-made Structures
- 3A) Fine- to Medium-grained Sand Beaches
- 3B) Scarps and Steep Slopes in Sand
- 6A) Gravel Beaches
- 6B) Riprap
- 7) Exposed Tidal Flats
- 8A) Sheltered Scarps in Mud
- 8B) Sheltered, Solid Man-made Structures

- 8C) Sheltered Riprap
- 9A) Sheltered Tidal Flats
- 9B) Vegetated Low Riverine Banks
- 10A) Salt- and Brackish-water Marshes
- 10B) Freshwater Marshes
- 10C) Swamps
- 10D) Scrub-Shrub Wetlands

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 Georgia 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. ESI polygons for wetlands (ESI = 10) were derived from NWI data.

**5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**

Research Planning, Inc.

<b>5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:</b>	<b>5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:</b>
1B	Exposed, Solid Man-made Structures
1B/3A	Exposed, Solid Man-made Structures/Fine- to Medium-grained Sand Beaches
1B/6B	Exposed, Solid Man-made Structures/Riprap
1B/6B/3A	Exposed, Solid Man-made Structures/Riprap/Fine- to Medium-grained Sand Beaches
1B/6B/10A	Exposed, Solid Man-made Structures/Riprap/Salt and Brackish-water Marshes
1B/7	Exposed, Solid Man-made Structures/Exposed Tidal Flats
1B/9A	Exposed, Solid Man-made Structures/Sheltered Tidal Flats
1B/10A	Exposed, Solid Man-made Structures/Salt and Brackish-water Marshes
1B/10A/9A	Exposed, Solid Man-made Structures/Salt and Brackish-water Marshes/Sheltered Tidal Flats
3A	Fine- to Medium-grained Sand Beaches
3A/6A	Fine- to Medium-grained Sand Beaches/Gravel Beaches

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
3A/6B	Fine- to Medium-grained Sand Beaches/Riprap
3A/7	Fine- to Medium-grained Sand Beaches/Exposed Tidal Flats
3B	Scarps and Steep Slopes in Sand
3B/3A	Scarps and Steep Slopes in Sand/Fine- to Medium-grained Sand Beaches
3B/6A	Scarps and Steep Slopes in Sand/Gravel Beaches
3B/6B	Scarps and Steep Slopes in Sand/Riprap
3B/9A	Scarps and Steep Slopes in Sand/Sheltered Tidal Flats
3B/10A	Scarps and Steep Slopes in Sand/Salt and Brackish-water Marshes
6A	Gravel Beaches
6B	Riprap
6B/3A	Riprap/Fine- to Medium-grained Sand Beaches
6B/7	Riprap/Exposed Tidal Flats
6B/10A	Riprap/Salt and Brackish-water Marshes
7	Exposed Tidal Flats
8A	Sheltered Scarps in Mud
8A/3A	Sheltered Scarps in Mud/Fine- to Medium-grained Sand Beaches
8B	Sheltered, Solid Man-made Structures
8B/9A	Sheltered, Solid Man-made Structures/Sheltered Tidal Flats
8B/10A	Sheltered, Solid Man-made Structures/Salt and Brackish-water Marshes
8C	Sheltered Riprap
9A	Sheltered Tidal Flats
9B	Vegetated Low Riverine Banks
9B/9A	Vegetated Low Riverine Banks/Sheltered Tidal Flats
10A	Salt and Brackish-water Marshes
10A/3A	Salt and Brackish-water Marshes/Fine- to Medium-grained Sand Beaches
10A/3A/7	Salt and Brackish-water Marshes/Fine- to Medium-grained Sand Beaches/Exposed Tidal Flats
10A/3A/9A	Salt and Brackish-water Marshes/Fine- to Medium-grained Sand Beaches/Sheltered Tidal Flats
10A/6A	Salt and Brackish-water Marshes/Gravel Beaches

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
10A/6A/3A	Salt and Brackish-water Marshes/Gravel Beaches/Fine- to Medium-grained Sand Beaches
10A/6A/7	Salt and Brackish-water Marshes/Gravel Beaches/Exposed Tidal Flats
10A/6A/9A	Salt and Brackish-water Marshes/Gravel Beaches/Sheltered Tidal Flats
10A/6B	Salt and Brackish-water Marshes/Riprap
10A/7	Salt and Brackish-water Marshes/Exposed Tidal Flats
10A/8A	Salt and Brackish-water Marshes/Sheltered Scarps in Mud
10A/9A	Salt and Brackish-water Marshes/Sheltered Tidal Flats
10A/9A/7	Salt and Brackish-water Marshes/Sheltered Tidal Flats/ Exposed Tidal Flats
10B	Freshwater Marshes
10B/7	Freshwater Marshes/Exposed Tidal Flats
10B/9A	Freshwater Marshes/Sheltered Tidal Flats
10C	Swamps
10C/9A	Swamps/Sheltered Tidal Flats
10D	Scrub-Shrub Wetlands
10D/3A	Scrub-Shrub Wetlands/Fine- to Medium-grained Sand Beaches
10D/3A/7	Scrub-Shrub Wetlands/Fine- to Medium-grained Sand Beaches/Exposed Tidal Flats
10D/6A	Scrub-Shrub Wetlands/Gravel Beaches
10D/9A	Scrub-Shrub Wetlands/Sheltered Tidal Flats
10D/10A	Scrub-Shrub Wetlands/Salt and Brackish-water Marshes
U	Unranked

**5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:**

Research Planning, Inc.

**5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:**  
ordered

**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
M	Marsh
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:**

---

1	NWI shoreline with MSRC attributes
2	RPI overflight
5	Digitized from scanned topos

---

**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.

<b>5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:</b>	<b>5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:</b>
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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.

<b>5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:</b>	<b>5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:</b>
--	---

L  
W

Land  
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. DETAILED DESCRIPTION: FISH**

The data layer FISH contains polygons for fish species.

Fish species in this coverage include selected estuarine-dependent, anadromous, and marine species. Species of commercial, recreational, ecological, or conservation interest are emphasized. This coverage includes general fish distribution by estuary and salinity zone. Outside the estuaries, nearshore marine species are also depicted from the outer shoreline to the 10 meter depth contour. Fish distribution data by estuarine salinity zone and offshore depth range were compiled by NOAA’s Strategic Environmental Assessments Division, under the Estuarine Living Marine Resources (ELMR) program, with data and expert knowledge contributed by the Georgia Department of Natural Resources (GA DNR). In addition to the ELMR fish distribution data, special concentration areas for selected species were also mapped, based on expert source information from GA DNR. Special concentration areas include things such as known high concentration areas, spawning sites, important juvenile nursery areas, wintering sites, etc. Special concentration areas were mapped for shortnose sturgeon, Atlantic sturgeon, red drum, spotted seatrout, tarpon, and sheepshead. In addition to fish distribution and special concentration areas, fish were mapped by bottom habitat for Gray’s Reef National Marine Sanctuary, using sources and knowledge provided by sanctuary staff. A variety of reef-associated and other offshore fish were linked with three major habitats: hardbottom reef, hardbottom reef ledges, and sand bottoms.

**5.1.1. ENTITY TYPES:**

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:
<u>GT-Polygons</u>	ID 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 POLY\_LUT table. ID is a concatenation of atlas number (35), element number (2), and

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

The following FISH species are found in the Georgia ESI atlas:

<b>SPECIES ID</b>	<b>NAME</b>
65	Bluefish
86	Blueback herring
87	American shad
95	Mummichog
98	American eel
101	Shortnose sturgeon
102	Atlantic sturgeon
104	Striped bass
105	Hickory shad
107	Spotted seatrout
108	Summer flounder
109	Red drum
110	Black seabass
111	Southern flounder
113	Bay anchovy
115	Atlantic menhaden
116	Striped mullet
117	Pinfish
119	Silver perch
121	Spot
122	Black drum
123	Atlantic croaker
124	Southern kingfish (whiting)
126	King mackerel
127	Spanish mackerel
131	Great barracuda
134	Cobia
137	Sheepshead
138	Seatrout (weakfish)
140	Ladyfish
143	Tarpon
273	Star drum
287	Hardhead catfish
290	Striped anchovy
302	Gag grouper
306	Gray snapper
310	Atlantic spadefish
318	Atlantic sharpnose shark
343	Yellow jack
344	Bar jack

<b>SPECIES ID</b>	<b>NAME</b>
345	Spotfin butterflyfish
346	Mackerel scad
347	Round scad
348	Spottail pinfish
349	Cubbyu
350	Tomtate
351	Slippery dick
352	Blue angelfish
354	Scamp grouper
355	Red pogy
356	Greater amberjack
357	Belted sandfish
358	Cocoa damselfish
359	Longspine pogy
360	Sand perch
361	Pearly razorfish
362	Southern stingray
363	Inshore lizardfish
366	Hogchoker

**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: HABITATS**

The data layer HABITATS contains polygons for protected/rare plants and hardbottom reef habitats associated with the Gray’s Reef National Marine Sanctuary.

**5.1.1. ENTITY TYPES:**

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:
GT-Polygons	ID 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 POLY\_LUT table. ID is a concatenation of atlas number (35), element number (3), and record number. ID values of zero are holes in polygons and do not contain information.

The following HABITATS species are found in the Georgia ESI atlas:

SPECIES ID	NAME
225	Dense-flowered groundsel-tree
252	Hardbottom reef ledge
253	Hardbottom reef

**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: HYDRO**

The data layer HYDRO contains polygonal water and land features as well as linear features for rivers and streams.

**5.1.1. ENTITY TYPES:**

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

The LINE, SOURCE\_ID, and WATER\_CODE attributes are the same as in the ESI data layer. The HYDRO data layer contains all annotation used in producing the atlas. The annotation features are categorized into three subclasses in order to simplify the mapping and quality control procedures: geog or geographic features, soc or socio-economic 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
H	Hydrography or stream features
I	Index
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:**

---

1	NWI shoreline with MSRC attributes
2	RPI overflight
5	Digitized from scanned topos

---

**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 data layer INDEX contains the map or polygon boundaries for each map in the atlas.

**5.1.1. ENTITY TYPES:**

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:
<u>GT-Polygons</u>	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 38

**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:**

**5.1.2.4.1.3. ENUMERATED DOMAIN VALUE**

**DEFINITION SOURCE:**

Research Planning, Inc.

ALTAMAHA SOUND, GA (1993)  
BLADEN, GA (1993)  
BRUNSWICK EAST, GA (1993)  
BRUNSWICK WEST, GA (1993)  
BURROUGHS, GA (1988)  
CABRETTA INLET, GA (1993)  
CUMBERLAND ISLAND NORTH, GA (1993)  
CUMBERLAND ISLAND SOUTH, GA (1994)  
DARIEN, GA (1993)  
DOBOY SOUND, GA (1993)  
DOVER BLUFF, GA (1993)  
EULONIA, GA (1980)  
FERNANDINA BEACH, FL-GA (1992)  
FORT PULASKI, GA-SC (1978)  
GARDEN CITY, GA (1980)  
GRAY'S REEF  
GROSS, FL-GA (1993)  
HARRIETTS BLUFF, GA (1994)  
ISLE OF HOPE, GA (1988)  
JEKYLL ISLAND, GA (1993)  
KINGSLAND NE, GA (1993)  
LIMEHOUSE, SC-GA (1980)  
LIMERICK SE, GA (1988)  
OAK LEVEL, GA (1983)  
PORT WENTWORTH, GA-SC (1980)  
RACCOON KEY, GA (1985)  
RIDGEVILLE, GA (1993)  
SAPELO SOUND, GA (1979)  
SAVANNAH, GA-SC (1978)  
SEA ISLAND, GA (1993)  
SEABROOK, GA (1979)  
SHELLMAN BLUFF, GA (1985)  
ST. CATHERINES SOUND, GA (1983)  
ST. MARY, GA-FL (1993)  
TYBEE ISLAND SOUTH, GA (1983)

---

TYBEE ISLAND NORTH, GA-SC (1978)  
 WASSAW SOUND, GA (1978)  
 WAVERLY, GA (1993)  
 WOODBINE, GA (1993)

---

**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:**

---

35,000

50,000

56,000

---

**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:**

---

-0.099

-0.067

-0.033

0.000

0.033

0.098

**5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:**

---

0.099  
0.100  
0.162  
0.163  
0.164  
0.165  
0.224  
0.225  
0.226  
0.227  
0.228  
0.229  
0.288  
0.289  
0.290  
0.291  
0.292  
0.352  
0.354  
0.355  
0.357

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**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

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**5.1. DETAILED DESCRIPTION: INVERT**

The data layer INVERT contains polygons for macro-invertebrate species including shellfish. Species in this coverage include selected estuarine-dependent and marine species, with emphasis on species of commercial, recreational, and ecological interest. This coverage includes general shellfish distribution by estuary and salinity zone. Outside the estuaries, nearshore marine distributions are also depicted from the outer shoreline to the 10 meter depth contour. Shellfish data by estuarine salinity zone and offshore depth range were compiled by NOAA’s SEA Division, under the ELMR program, with data and expert knowledge contributed by the GA DNR. In addition to the ELMR distribution data, specific sessile shellfish locations were mapped within recreational and commercial harvest areas identified on maps provided by GA DNR. Sessile shellfish depicted in this manner include American oyster and quahog (hard clam).

**5.1.1. ENTITY TYPES:**

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:
<u>GT-Polygons</u>	ID 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 POLY\_LUT table. ID is a concatenation of atlas number (35), element number (7), and record number. ID values of zero are holes in polygons and do not contain information.

The following INVERT species are found in the Georgia ESI atlas:

<b>SPECIES ID</b>	<b>NAME</b>
4	Pink shrimp
43	American oyster (eastern)
47	Knobbed whelk
49	Blue crab
50	White shrimp
51	Brown shrimp
97	Grass shrimp
100	Quahog spp. (hard clam)

**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: MGT**

The data layer MGT contains the managed area polygons.

**5.1.1. ENTITY TYPES:**

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:
<u>GT-Polygons</u>	SOCECON ID character integer

**5.1.2. ATTRIBUTES:**

**5.1.2.1. ATTRIBUTE LABEL:**

SOCECON

**5.1.2.2. ATTRIBUTE DEFINITION:**

Identifies polygons with a socio-economic, or human-use, feature. This attribute allows direct access to the type of feature instead of linking to the more detailed SOC\_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:
MS	Marine Sanctuary
NP	National Park
P	State Park
WR	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:**

ID

**5.1.2.2. ATTRIBUTE DEFINITION:**

A unique identifier that links to the SOC\_LUT table. ID is a concatenation of atlas number (35), element number (11), and record number

**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: M\_MAMMAL

The data layer M\_MAMMAL contains complex polygons for marine mammals, including manatees and whales. Bottlenose dolphins are not included in this atlas due to widespread abundance and an assumed low-sensitivity to spills.

Bottlenose dolphins are likely to be present throughout nearly all estuarine and nearshore waters of the study area. Though not threatened or endangered, bottlenose dolphins are protected under the Marine Mammal Protection Act, as are all marine mammals.

Manatees areas depicted in this coverage are limited to known high use areas which may be occupied in warmer months. In general, seasonal manatee high-use areas may include estuaries, rivers, and tidal creeks. Manatees in these areas may feed on *Spartina* and algae growing in shallow areas or on floating objects. In addition to direct spill impacts, spill responders, especially vessel operators, should be aware of manatee concentration areas including locations where slow or idle boat speeds are posted for manatee protection.

Whales depicted in this coverage are largely restricted to a seasonal calving and juvenile area for the Northern right whale which has been listed as Designated Critical Habitat by the National Marine Fisheries Service (NMFS) under the Endangered Species Act. This area roughly extends from the mouth of the Altamaha River, Georgia to Jacksonville, Florida (from the Atlantic shoreline to 15 nautical miles offshore), and from Jacksonville to Sebastian Inlet, Florida (from the Atlantic shoreline to 5 nautical miles offshore). Additional whale data for several species is also included for the offshore area encompassed by Gray's Reef National Marine Sanctuary. In general, offshore whale distributions are described as follows: Northern right whale, 0-30 miles offshore; humpback whale, 0-30 miles offshore; pygmy sperm whale, 5-200 miles offshore; and fin whale, 5-200 miles offshore. The data layer M\_MAMMAL contains the dolphin marine mammal polygons. Bottlenose dolphins are likely to be present throughout the study area, in nearly all estuarine and nearshore waters of the Atlantic. Dolphins are only depicted, however, in specific locations where known calving or nursery concentrations occur. There may be many such areas that are not known, so areas depicted in the atlas should not be considered the only areas where calving and nursery activities occur.

**5.1.1. ENTITY TYPES:**

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:
GT-Polygons	ID 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 POLY\_LUT table. ID is a concatenation of atlas number (35), element number (4), and record number. ID values of zero are holes in polygons and do not contain information.

The following M\_MAMMAL species are found in the Georgia ESI atlas:

SPECIES ID	NAME
10	West Indian manatee
11	Fin whale
13	Humpback whale
18	Pygmy sperm whale
81	Northern right whale

**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: NESTS**

The data layer NESTS contains entity points representing bird nesting sites and similar point features, such as roost sites, where nesting does not take place. Point features for diving birds, wading birds, terns, shorebirds and raptors are included in this coverage. Additional nesting sites represented as polygons are included in the BIRDS data layer.

Nesting sites are important during spills because feeding or foraging areas may be concentrated in the vicinity of nest sites or colonies, eggs and young birds can be particularly sensitive to oil contamination, and nests and/or nesting birds can be sensitive to human disturbance during spill response or other activities. It is important to note that the eggs and young of tree-nesting birds, and even nests removed from an immediate spill area, may still be at risk during spills if adults bring oil back to the nests on their feet or bodies. In addition to bird and nest contamination, if oiled habitat, decreased prey abundance, or disturbance cause adult birds to change foraging areas or patterns, nesting success may also be impaired. Non-nesting point data included in this atlas mainly emphasizes roosting sites for the endangered wood stork and associated wading birds. Similar to nesting colonies, foraging areas may be concentrated in the vicinity of roost sites, and human disturbance could also effect these areas.

**5.1.1. ENTITY TYPES:**

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:
<u>Entity Points</u>	ID 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 PNTS\_LUT table. ID is a concatenation of atlas number (35), element number (5), and record number.

The following species are found in the NESTS coverage of the Georgia ESI atlas:

<b>SPECIES ID</b>	<b>NAME</b>
54	Great blue heron
76	Bald eagle
77	Osprey
86	Least tern
88	Great egret
89	Snowy egret
93	Cattle egret
121	Anhinga
132	Wood stork
154	Wilson's plover
1,004	Wading birds

**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: OFFSHORE**

The data layer OFFSHORE contains polygons for offshore fish and invertebrate species by depth zone. Species of commercial, recreational, and ecological interest are emphasized. This coverage includes general fish and invertebrate offshore distribution by four depth zones: 0-10 meters (m); 10-20 m; 20-50 m; and 50-200 m. Note that fish and invertebrates from the 0-10 m depth zone are also duplicated in the FISH and INVERT coverages. Several species (e.g., gag grouper, gray snapper, Atlantic spadefish) in this coverage are structure-oriented and so would not occur throughout the depth zone indicated, but instead occur around bottom structure, such as reefs, within the depth zones indicated. In addition, the depth range of individual species may only include part of certain depth zones, not necessarily the entire zone. The offshore fish and invertebrate distribution data were compiled by NOAA’s Strategic Environmental Assessments Division, in consultation with the Georgia Department of Natural Resources.

**5.1.1. ENTITY TYPES:**

5.1.1.1.	ENTITY TYPE LABEL:	5.1.1.2.	ENTITY TYPE DEFINITION:
	GT-Polygons		ID 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 POLY\_LUT table. ID is a concatenation of atlas number (35), element number (2), and record number. ID values of zero are holes in polygons and do not contain information.

The following OFFSHORE species are found in the Georgia ESI atlas:

SPECIES ID	NAME
FISH	65 Bluefish 86 Blueback herring 87 American shad 98 American eel

SPECIES ID	NAME
102	Atlantic sturgeon
105	Hickory shad
107	Spotted seatrout
108	Summer flounder
109	Red drum
110	Black seabass
111	Southern flounder
113	Bay anchovy
115	Atlantic menhaden
116	Striped mullet
117	Pinfish
119	Silver perch
121	Spot
122	Black drum
123	Atlantic croaker
124	Southern kingfish (whiting)
126	King mackerel
127	Spanish mackerel
134	Cobia
137	Sheepshead
138	Seatrout (weakfish)
140	Ladyfish
143	Tarpon
273	Star drum
287	Hardhead catfish
290	Striped anchovy
302	Gag grouper
310	Atlantic spadefish
318	Atlantic sharpnose shark
366	Hogchoker
INVERTEBRATES 4	Pink shrimp
47	Knobbed whelk
49	Blue crab
50	White shrimp
51	Brown shrimp
100	Quahog spp. (hard clam)

**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: PNTS\_LUT**

Lookup table to link NESTS to BIORES data table.

**5.1.1. ENTITY TYPES:**

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:
<u>Attributes</u>	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 to the POLY\_LUT and/or PNTS\_LUT lookup tables. The values range from 2-199

**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:**

ID

**5.1.2.2. ATTRIBUTE DEFINITION:**

An identifier that links to the POLY\_LUT and/or PNTS\_LUT lookup tables. The values range from 360500001-360500159

**5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**

Research Planning, Inc.

**5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:**

nominal

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**5.1. DETAILED DESCRIPTION: POLY\_LUT**

Lookup table to link biology polygon data layers to BIORES data table.

**5.1.1. ENTITY TYPES:**

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:
<u>Attributes</u>	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 to the POLY\_LUT and/or PNTS\_LUT lookup tables. The values range from 1-299

**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:**

ID

**5.1.2.2. ATTRIBUTE DEFINITION:**

An identifier that links to the POLY\_LUT and/or PNTS\_LUT lookup tables. The values range from 360100002-3608

**5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**

Research Planning, Inc.

**5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:**

nominal

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**5.1. DETAILED DESCRIPTION: REPTILES**

The data layer REPTILES contains the polygons with reptile species. Reptiles depicted in this coverage include sea turtles and the gopher tortoise. American alligators are not included in this data due to widespread abundance and assumed low sensitivity to spills. Alligators can occur throughout freshwater and estuarine habitats in Georgia, particularly in wetlands, coastal rivers, ponds, and impoundments. Sea turtle areas displayed on the maps are limited to nesting beaches, and several well known in-water concentration areas. Sea turtle nesting beaches include sand beach areas where sea turtles come ashore to nest. In addition to nesting locations and the few in-water areas depicted, loggerhead, green, Kemp’s ridley, and leatherback sea turtles can occur throughout the coastal, estuarine, and marine waters of Georgia. All sea turtles are protected as threatened or endangered species.

**5.1.1. ENTITY TYPES:**

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:
<u>GT-Polygons</u>	ID 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 POLYS\_LUT table. ID is a concatenation of atlas number (35), element number (6), and record number. ID values of zero are holes in polygons and do not contain information.

The following REPTILES species are found in the Georgia ESI atlas:

SPECIES ID	NAME
2	Green sea turtle
4	Kemp’s ridley sea turtle
5	Leatherback sea turtle
6	Loggerhead sea turtle
21	Gopher tortoise

**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: SALINITY**

The data layer SALINITY contains the complete chains and complex polygons for salinity boundaries by Georgia estuaries. Fish distributions are based on data compiled by NOAA’s SEA Division under the ELMR Program.

**5.1.1. ENTITY TYPES:**

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:
<u>Complete Chain</u>	BOUND character SYMBOL number
<u>GT-Polygons</u>	WATER_CODE character ESTUARY character SAL_HIGH character SAL_LOW character SAL_TRAN character UNIQUE_HIGH integer UNIQUE_LOW integer UNIQUE_TRAN integer

**5.1.2. ATTRIBUTES:**

**5.1.2.1. ATTRIBUTE LABEL:**

BOUND

**5.1.2.2. ATTRIBUTE DEFINITION:**

Specifies a line as high, low, or transitional salinity boundary

**5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**

NOAA’s SEA Division

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:	5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:
0	Shoreline, index, bathymetry, or estuary boundary
2	Transitional
3	High salinity time period
4	Low salinity time period
5	Transitional
8	Unknown

**5.1.2.4.1.3. ENUMERATED DOMAIN VALUE**

**DEFINITION SOURCE:**

NOAA's SEA Division

**5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:**

nominal

**5.1.2.1. ATTRIBUTE LABEL:**

SYMBOL

**5.1.2.2. ATTRIBUTE DEFINITION:**

Map symbol used to portray high and low salinity time periods

**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	No symbol
55	Low salinity time period/decreasing salinity
69	Low salinity time period/increasing salinity
190	High salinity time period/decreasing salinity
204	High salinity time period/increasing salinity

---

**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 land or water

**5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:**

L  
W

**5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:**

Land  
Water

**5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:**

NOAA's SEA Division

**5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:**  
nominal

**5.1.2.1. ATTRIBUTE LABEL:**  
ESTUARY

**5.1.2.2. ATTRIBUTE DEFINITION:**  
Name of estuary

**5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**  
NOAA's SEA Division

**5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:**

---

Altamaha River  
Broad River  
Ocean: 0-10 m  
Ocean: 10-20 m  
Ocean: 20-50 m  
Ocean: 50-200 m  
Ossabaw Sound  
Savannah River  
St. Andrew/St. Simons Sounds  
St. Catherines/Sapelo Sounds  
St. Marys River/Cumberland Sound  
Wassaw Sound

---

**5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:**

NOAA's SEA Division

**5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:**  
nominal

**5.1.2.1. ATTRIBUTE LABEL:**

SAL\_HIGH

**5.1.2.2. ATTRIBUTE DEFINITION:**

Salinity type during high time period

**5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**

NOAA's SEA Division

**5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:**

---

Mixing  
Seawater  
Tidal fresh

---

**5.1.2.4.1.3. ENUMERATED DOMAIN VALUE  
DEFINITION SOURCE:**

NOAA's SEA Division

**5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:**

ordinal

**5.1.2.1. ATTRIBUTE LABEL:**

SAL\_LOW

**5.1.2.2. ATTRIBUTE DEFINITION:**

Salinity type during low time period

**5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**

NOAA's SEA Division

**5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:**

---

Mixing  
Seawater  
Tidal fresh

---

**5.1.2.4.1.3. ENUMERATED DOMAIN VALUE  
DEFINITION SOURCE:**

NOAA's SEA Division

**5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:**

ordinal

**5.1.2.1. ATTRIBUTE LABEL:**

SAL\_TRAN

**5.1.2.2. ATTRIBUTE DEFINITION:**

Salinity type during transitional time period

**5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**

NOAA's SEA Division

**5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:**

---

Mixing  
Seawater  
Tidal fresh

---

**5.1.2.4.1.3. ENUMERATED DOMAIN VALUE**

**DEFINITION SOURCE:**

NOAA's SEA Division

**5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:**

ordinal

**5.1.2.1. ATTRIBUTE LABEL:**

UNIQUE\_HIGH

**5.1.2.2. ATTRIBUTE DEFINITION:**

Identification number linking to SEA database (not included)  
that was transformed to the SEASONAL and BREED tables

**5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**

NOAA's SEA Division

**5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:**

---

11  
12  
13  
19  
22  
23  
29  
31  
32  
33  
39

**ENUMERATED DOMAIN VALUE:**

---

42  
43  
49  
52  
53  
59  
61  
62  
63  
69  
72  
73  
79  
81  
82  
83  
84  
99

---

**5.1.2.4.1.3. ENUMERATED DOMAIN VALUE**

**DEFINITION SOURCE:**

NOAA's SEA Division

**5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:**

nominal

**5.1.2.1. ATTRIBUTE LABEL:**

UNIQUE\_LOW

**5.1.2.2. ATTRIBUTE DEFINITION:**

Identification number linking to SEA database (not included)  
that was transformed to the SEASONAL and BREED tables

**5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**

NOAA's SEA Division

**5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:**

---

11  
12  
19  
21  
22

**ENUMERATED DOMAIN VALUE:**

---

23  
 29  
 31  
 32  
 39  
 41  
 42  
 43  
 49  
 51  
 52  
 53  
 59  
 61  
 62  
 63  
 69  
 72  
 73  
 79  
 81  
 82  
 83  
 84  
 99

---

**5.1.2.4.1.3. ENUMERATED DOMAIN VALUE**

**DEFINITION SOURCE:**

NOAA's SEA Division

**5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:**

nominal

**5.1.2.1. ATTRIBUTE LABEL:**

UNIQUE\_TRANS

**5.1.2.2. ATTRIBUTE DEFINITION:**

Identification number linking to SEA database (not included)  
 that was transformed to the SEASONAL and BREED tables

**5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**

NOAA's SEA Division

**5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:**

---

11  
12  
13  
19  
21  
22  
23  
29  
31  
32  
39  
41  
42  
43  
49  
51  
52  
53  
59  
61  
62  
63  
69  
72  
73  
79  
81  
82  
83  
84  
99

---

**5.1.2.4.1.3. ENUMERATED DOMAIN VALUE**

**DEFINITION SOURCE:**

NOAA's SEA Division

**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:
<u>Attributes</u>	
	ELEMENT
	SPECIES_ID
	SEASON_ID
	JAN
	FEB
	MAR
	APR
	MAY
	JUN
	JUL
	AUG
	SEP
	OCT
	NOV
	DEC
	EL_SPE
	EL_SPE_SEA

**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
INVERT	Invertebrates
M_MAMMAL	Marine Mammals
REPTILE	Reptiles and Amphibians

**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 at RPI and 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:
---------------------------------------	--

2

Rare

3

Common

4

Abundant

5

Highly abundant

X

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:
2	Rare
3	Common
4	Abundant
5	Highly abundant
X	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:
2	Rare
3	Common
4	Abundant
5	Highly abundant
X	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:**

---

2	Rare
3	Common
4	Abundant
5	Highly abundant
X	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:**

---

2	Rare
3	Common
4	Abundant
5	Highly abundant
X	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:**

---

2	Rare
3	Common
4	Abundant
5	Highly abundant
X	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:**

---

2	Rare
3	Common
4	Abundant
5	Highly abundant
X	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:**

---

2	Rare
3	Common
4	Abundant
5	Highly abundant
X	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:**

---

2	Rare
3	Common
4	Abundant
5	Highly abundant
X	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:**

---

2	Rare
3	Common
4	Abundant
5	Highly abundant
X	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:**

---

2	Rare
3	Common
4	Abundant
5	Highly abundant
X	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:**

---

2	Rare
3	Common
4	Abundant
5	Highly abundant
X	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

**5.1.2.2. ATTRIBUTE DEFINITION:**

Concatenation of the first character of the ELEMENT and SPECIES\_ID

**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:**

EL\_SPE\_SEA

**5.1.2.2. ATTRIBUTE DEFINITION:**

Concatenation of the first character of the ELEMENT,  
SPECIES\_ID, and SPECIES\_ID

**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. DETAILED DESCRIPTION: SOC\_DATA**

The data table SOC\_DATA contains the human-use attributes and links to the data layers MGT and SOCECON using SOC\_LUT.

**5.1.1. ENTITY TYPES:**

5.1.1.1. ENTITY TYPE LABEL:	5.1.1.2. ENTITY TYPE DEFINITION:	
<u>Attributes</u>	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

**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:**

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
AQUACULTURE	Aquaculture Site
BEACH	Recreational Beach
BOAT RAMP	Boat Ramp
COAST GUARD	Coast Guard
COMMERCIAL FISHING	Commercial Fishing
DIVING	Diving Site
HAZARDOUS WASTE SITE	Hazardous Waste Site
HISTORICAL SITE	Historical Site
MARINA	Marina
MARINE SANCTUARY	Marine Sanctuary
NATIONAL PARK	National Park
PARK	Park
RECREATIONAL FISHING	Recreational Fishing
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:**

---

Access

Altamaha State Waterfowl Management Area

**ENUMERATED DOMAIN VALUE:**

---

Aquaculture Site  
Ardsley Park - Chatham Crescent Historic District  
Beach  
Beach Access  
Bethesa Home for Boys  
Blackbeard Island National Wildlife Refuge  
Brunswick Old Town  
Brunswick Old Town Historic District  
Brunswick Wood Preserving  
Cassel S Store  
Central Georgia Railroad  
Central of Georgia Depot and Trainshed  
Central of Georgia Railway Company Shop  
Charity Hospital  
Coast Guard Station  
Cockspur Light  
Cord Asendorf House  
Crawfish Farm  
Crooked River State Park  
CSS Georgia (Ironclad)  
CSS Nashville Shipwreck  
Cumberland Island National Seashore  
Dantignac House  
Diving  
Drouillard-Maupas House  
Eden Field  
Evelyn Plantation  
Faith Chapel  
Federal Building and U.S. Courthouse  
First Bryan Baptist Church  
Fort Frederica National Monument  
Fort Jackson  
Fort King George  
Fort King George State Historic Site

**ENUMERATED DOMAIN VALUE:**

---

Fort McAllister  
Fort McAllister State Historic Park  
Fort Morris  
Fort Pulaski  
Fort Pulaski National Monument  
Fort Screven Historic District  
Fort Screven Batteries  
Georgia (Ironclad RAM)  
Glynco Jetport  
Gray's Reef National Marine Sanctuary  
Green-Meldrim House  
Hamilton Plantation Slave Cabins  
Harris Neck National Wildlife Refuge  
Hercules Landfill  
Hill Hall at Savannah State College  
Historical Site  
HOFWYL - Broadfield Plantation SHS  
HOFWYL - Broadfield Plantation  
Hog Hammock Community Quahog Farm  
Horton-Dubignon House, Brewery Ruins  
Hunter Army Airfield  
Impoundment Intakes  
Isaiah Davenport House  
Isle of Hope Historic District  
Jekyll Island Airport  
Jekyll Island Club  
Juliette Gordon Low Birthplace  
Kraft Power Plant  
Landing Strip  
Laurel Grove-North Cemetery  
Laurel Grove-South Cemetery  
LCP Chemicals  
Lighthouse  
Massie Common School House

**ENUMERATED DOMAIN VALUE:**

---

McKinnon Airport  
Mickve Israel Synagogue  
Mulberry Grove Site  
Nicholsonville Baptist Church  
Oliver Sturges House  
Ossabaw Island State Wildlife Management Area  
Owens-Thomas House  
Paper/Pulp Mill  
Power Plant  
R.J. Reynolds State Wildlife Refuge  
Recreational Beach  
Recreational Fishing  
Rheem Manufacturing Company  
Richmond Hill State Wildlife Management Area  
Riverside Power Plant  
Rockefeller Cottage  
Saffold Field  
Sapelo Island NERR  
Savannah Industrial and Domestic Water  
Savannah Municipal Airport  
Savannah National Wildlife Refuge  
Savannah Victorian Historic District  
Shellfish Harvest  
Shrimp/Clam Aquaculture  
Shrimping  
Skidaway Island State Park  
Slotin Building  
Soft Shell Crab Aquaculture  
St. Catherines Island  
St. Johns Church  
St. Marys Airport  
St. Philip AME Church  
St. Simons Lighthouse and Lighthouse Keep  
Stone Savannah River Paper/Pulp Mill

**ENUMERATED DOMAIN VALUE:**

---

Telfair Academy  
The Ridge  
Tybee Light  
U.S. Custom House  
Vernon Square-Columbus Square Historic District  
W.B. Hodgson Hall, Georgia Historical  
Wassaw National Wildlife Refuge  
Water Intake  
Wild Horn  
William Scarbough House  
William Washington Gorden House  
Wolf Island National Wildlife Refuge  
Wormsloe Plantation  
Wormsloe Plantation State Historic Site

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**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\_DATA 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:
<u>Attributes</u>	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 to the POLY\_LUT and/or PNTS\_LUT lookup tables. The values range from 1-241.

**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:**

ID

**5.1.2.2. ATTRIBUTE DEFINITION:**

A unique identifier that links to the POLY\_LUT and/or PNTS\_LUT lookup tables. The values range from 361000001-361000063.

**5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**

Research Planning, Inc.

**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:
<u>Complete Chains</u>	SOCECON character
<u>Entity Points</u>	SOCECON character
	ID integer

**5.1.2. ATTRIBUTES:**

**5.1.2.1. ATTRIBUTE LABEL:**

SOCECON

**5.1.2.2. ATTRIBUTE DEFINITION:**

Identifies a line or point with a socio-economic, or human-use, feature. This attribute allows direct access to the type of feature instead of linking to the more detailed SOC\_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:
---------------------------------------	--

A2	Access (Point)
A	Airport (Point)
BR	Boat Ramp (Point)
CG	Coast Guard (Point)
CF	Commercial Fishing (Point)
HS	Historical Site (Point)
M	Marina (Point)
R	Road
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 (35), element number (10), and record number.

**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: 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:
<u>Attributes</u>	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

**5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:**

1-N

**5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:**

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:**

---

Digital Point Data (ASCII)

Digital Polygons

Digital Tables

Expert Knowledge

Expert Knowledge and Hardcopy Maps

Hardcopy Maps

Hardcopy Maps and Expert Knowledge

Hardcopy Report and Maps

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:
<u>Attributes</u>	SPECIES_ID integer NAME character GEN_SPEC character DATE_PUB integer ELEMENT character SUBELEMENT character NHP character 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 and is unique within each element and refers to a nationwide ESI species list maintained at RPI and 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:**

---

American avocet  
American coot  
American eel  
American kestrel  
American oyster (eastern)  
American oystercatcher  
American shad  
American swallow-tailed kite  
American wigeon  
Anhinga  
Atlantic croaker  
Atlantic menhaden  
Atlantic sharpnose shark  
Atlantic spadefish  
Atlantic sturgeon  
Bald eagle  
Bar jack  
Bay anchovy  
Belted sandfish  
Black drum  
Black duck  
Black seabass  
Black skimmer  
Black tern  
Black-bellied plover  
Black-crowned night heron  
Black-necked stilt  
Blue angelfish  
Blue crab  
Blue-winged teal  
Blueback herring  
Bluefish

**ENUMERATED DOMAIN VALUE:**

---

Bonapartes gull  
Brown pelican  
Brown shrimp  
Buff-breasted sandpiper  
Bufflehead  
Canvasback  
Caspian tern  
Cattle egret  
Cobia  
Cocoa damselfish  
Common moorhen  
Common snipe  
Coopers hawk  
Cubbyu  
Dense-flowered groundsel-tree  
Double-crested cormorant  
Dowitcher  
Dunlin  
Endangered anadromous fish  
Endangered passerine bird  
Endangered raptor  
Endangered wading bird  
Fin whale  
Forsters tern  
Gadwall  
Gag grouper  
Glossy ibis  
Gopher tortoise  
Grass shrimp  
Gray snapper  
Great barracuda  
Great blue heron  
Great egret  
Greater amberjack  
Greater scaup  
Greater yellowlegs  
Green sea turtle  
Green-backed heron

**ENUMERATED DOMAIN VALUE:**

---

Green-winged teal  
Gull-billed tern  
Gulls  
Hardbottom reef  
Hardbottom reef ledge  
Hardhead catfish  
Herring gull  
Hickory shad  
Hogchoker  
Hooded merganser  
Humpback whale  
Inshore lizardfish  
Kemps ridley sea turtle  
Killdeer  
King mackerel  
Knobbed whelk  
Ladyfish  
Laughing gull  
Least sandpiper  
Least tern  
Leatherback sea turtle  
Lesser scaup  
Lesser yellowlegs  
Little blue heron  
Loggerhead sea turtle  
Longspine porgy  
Mackerel scad  
Mallard  
Marbled godwit  
Merlin  
Mottled duck  
Mummichog  
Northern harrier  
Northern pintail  
Northern right whale  
Northern shoveler  
Osprey

**ENUMERATED DOMAIN VALUE:**

---

Pearly razorfish  
Pectoral sandpiper  
Peep  
Peregrine falcon  
Pied-billed grebe  
Pinfish  
Pink shrimp  
Piping plover  
Purple gallinule  
Pygmy sperm whale  
Quahog spp. (hard clam)  
Rare community  
Rare fish  
Rare frog  
Rare lizard  
Rare passerine bird  
Rare raptor  
Rare rodent  
Rare salamander  
Rare shorebird  
Rare tern  
Rare terrestrial plant  
Rare wading bird  
Rare wetland/aquatic plant  
Red drum  
Red knot  
Red porgy  
Red-shouldered hawk  
Red-tailed hawk  
Redhead  
Ring-billed gull  
Ring-necked duck  
Round scad  
Royal tern  
Ruddy duck  
Ruddy turnstone  
Sand perch

**ENUMERATED DOMAIN VALUE:**

---

Sanderling  
Sandwich tern  
Scamp grouper  
Seatrout (weakfish)  
Semipalmated plover  
Semipalmated sandpiper  
Sharp-shinned hawk  
Sheepshead  
Shortnose sturgeon  
Silver perch  
Slippery dick  
Snowy egret  
Solitary sandpiper  
Southern flounder  
Southern kingfish (whiting)  
Southern stingray  
Spanish mackerel  
Spot  
Spotfin butterflyfish  
Spottail pinfish  
Spotted sandpiper  
Spotted seatrout  
Star drum  
Stilt sandpiper  
Striped anchovy  
Striped bass  
Striped mullet  
Summer flounder  
Tarpon  
Terns  
Threatened rodent  
Threatened tern  
Threatened terrestrial plant  
Threatened turtle  
Threatened wetland/aquatic plant  
Tomtate  
Tricolored heron

**ENUMERATED DOMAIN VALUE:**

---

Upland sandpiper  
 Wading birds  
 Waterfowl  
 West Indian manatee  
 Western sandpiper  
 Whimbrel  
 White ibis  
 White shrimp  
 White-rumped sandpiper  
 Willet  
 Wilsons phalarope  
 Wilsons plover  
 Wood duck  
 Wood stork  
 Yellow jack  
 Yellow-crowned night heron  
 Yellowlegs

**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:**

---

Accipiter cooperii  
 Accipiter striatus  
 Acipenser brevirostrum  
 Acipenser oxyrhynchus  
 Actitis macularia

**ENUMERATED DOMAIN VALUE:**

---

Aix sponsa  
Alosa aestivalis  
Alosa mediocris  
Alosa sapidissima  
Anas acuta  
Anas americana  
Anas clypeata  
Anas crecca  
Anas discors  
Anas fulvigula  
Anas platyrhynchos  
Anas rubripes  
Anas strepera  
Anchoa hepsetus  
Anchoa mitchilli  
Anguilla rostrata  
Anhinga anhinga  
Archosargus probatocephalus  
Ardea herodias  
Arenaria interpres  
Arius felis  
Aythya affinis  
Aythya americana  
Aythya collaris  
Aythya marila  
Aythya valisineria  
Baccharis glomeruliflora  
Bairdiella chrysoura  
Balaenoptera physalus  
Bartramia longicauda  
Brevoortia tyrannus  
Bubulcus ibis  
Bucephala albeola  
Busycon carica  
Buteo jamaicensis  
Buteo lineatus  
Butorides striatus

**ENUMERATED DOMAIN VALUE:**

---

Calidris alba  
Calidris alpina  
Calidris canutus  
Calidris fuscicollis  
Calidris himantopus  
Calidris mauri  
Calidris melanotos  
Calidris minutilla  
Calidris pusilla  
Calidris spp.  
Callinectes sapidus  
Caranx bartholomaei  
Caranx ruber  
Caretta caretta  
Casmerodius albus  
Catoptrophorus semipalmatus  
Centropristis striata  
Chaetodipterus faber  
Chaetodon ocellatus  
Charadrius melodus  
Charadrius semipalmatus  
Charadrius vociferus  
Charadrius wilsonia  
Chelonia mydas  
Chlidonias niger  
Circus cyaneus  
Crassostrea virginica  
Cynoscion nebulosus  
Cynoscion regalis  
Dasyatis americana  
Decapterus macarellus  
Decapterus punctatus  
Dermochelys coriacea  
Diplectrum formosum  
Diplodus holbrooki  
Egretta caerulea  
Egretta thula

**ENUMERATED DOMAIN VALUE:**

---

Egretta tricolor  
Elanoides forficatus  
Elops saurus  
Equetus umbrosus  
Eubalaena glacialis  
Eudocimus albus  
Falco columbarius  
Falco peregrinus  
Falco sparverius  
Fulica americana  
Fundulus heteroclitus  
Gallinago gallinago  
Gallinula chloropus  
Gopherus polyphemus  
Haematopus palliatus  
Haemulon aurolineatum  
Haliaeetus leucocephalus  
Halichoeres bivittatus  
Hemipteronotus novacula  
Himantopus mexicanus  
Holacanthus bermudensis  
Kogia breviceps  
Lagodon rhomboides  
Larus argentatus  
Larus atricilla  
Larus delawarensis  
Larus philadelphia  
Leiostomus xanthurus  
Lepidochelys kempii  
Limnodromus spp.  
Limosa fedoa  
Lophodytes cucullatus  
Lutjanus griseus  
Megalops atlanticus  
Megaptera novaeangliae  
Menticirrhus americanus  
Mercenaria spp.

**ENUMERATED DOMAIN VALUE:**

---

Micropogonias undulatus  
Morone saxatilis  
Mugil cephalus  
Mycteria americana  
Mycteroperca microlepis  
Mycteroperca phenax  
Numenius phaeopus  
Nyctanassa violacea  
Nycticorax nycticorax  
Oxyura jamaicensis  
Pagrus pagrus  
Palaemonetes sp.  
Pandion haliaetus  
Paralichthys dentatus  
Paralichthys lethostigma  
Pelecanus occidentalis  
Penaeus aztecus  
Penaeus duorarum  
Penaeus setiferus  
Phalacrocorax auritus  
Plegadis falcinellus  
Pluvialis squatarola  
Podilymbus podiceps  
Pogonias cromis  
Pomacentrus variabilis  
Pomatomus saltatrix  
Porphyryla martinica  
Rachycentron canadum  
Recurvirostra americana  
Rhizoprionodon terraenovae  
Rynchops niger  
Sciaenops ocellatus  
Scomberomorus cavalla  
Scomberomorus maculatus  
Seriola dumerili  
Serranus subligarius  
Sphyraena barracuda

**ENUMERATED DOMAIN VALUE:**

---

Steganopus tricolor  
 Stellifer lanceolatus  
 Stenotomus caprinus  
 Sterna antillarum  
 Sterna caspia  
 Sterna fosteri  
 Sterna maxima  
 Sterna nilotica  
 Sterna sandvicensis  
 Synodus foetens  
 Trichechus manatus  
 Trinectes maculatus  
 Tringa flavipes  
 Tringa melanaleuca  
 Tringa solitaria  
 Tringa spp.  
 Tryngites subruficollis

---

**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:**

DATE\_PUB

**5.1.2.2. ATTRIBUTE DEFINITION:**

Date of NHP listing

**5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:**

0  
121996

**5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:**

Not listed by NHP  
Date of NHP list

---

**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
INVERT	Invertebrates
M_MAMMAL	Marine Mammals
REPTILE	Reptiles and Amphibians

---

**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  
 bivalve  
 crab  
 diving  
 gastropod  
 gull\_tern  
 hardbottom

**5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:**

---

manatee  
 raptor  
 rare plant  
 shorebird  
 shrimp  
 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:**

Natural Heritage Program global ranking

**5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**

NHP

**5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:**

---

G1	Critically imperiled
G2?	Imperiled, inexact rank
G3	Vulnerable
G4	Apparently secure
G5	Secure

---

**5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:**

NHP

**5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:**

ordered

**5.1.2.1. ATTRIBUTE LABEL:**

EL\_SPE

**5.1.2.2. ATTRIBUTE DEFINITION:**

Concatenation of the first character of the ELEMENT and SPECIES\_ID

**5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED  
DOMAIN VALUE:**

1-N

**5.1.2.4.1.2. ENUMERATED DOMAIN  
VALUE DEFINITION:**

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

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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:
<u>Attributes</u>	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 FISH HABITAT INVERT M_MAMMAL REPTILE	Birds Fish Habitats Invertebrates Marine Mammals Reptiles and Amphibians

**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 at RPI and NOAA

**5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:**

1-N

**5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:**

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:**

GA

**5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:**

Georgia

**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:**

---

F	Federally listed
S	State listed
S/F	State and Federally listed

---

**5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:**

USFWS

**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	State endangered
E/E	Endangered on Federal and State lists
E/T	Endangered on State list and threatened on Federal list
T	State threatened
T/E	Threatened on State list and endangered on Federal list
T/T	Threatened on Federal and State lists

---

**5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:**

USFWS

**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 NHP listing

**5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:**

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51996

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**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 SPECIES\_ID and links to BIORES, SPECIES, and SEASONAL databases

**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

## 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

#### 6.1.4. CONTACT ADDRESS

##### 6.1.4.1. ADDRESS TYPE:

Physical Address

##### 6.1.4.2. ADDRESS:

7600 Sand Point Way N.E., Bin C15700

##### 6.1.4.3. CITY:

Seattle

##### 6.1.4.4. STATE OR PROVINCE:

WA

##### 6.1.4.5. POSTAL CODE:

98115

#### 6.1.5. CONTACT VOICE TELEPHONE:

(206) 526-6400

#### 6.1.7. CONTACT FACSIMILE TELEPHONE:

(206) 526-6329

### 6.2. RESOURCE DESCRIPTION:

ESI Atlas for Georgia

### 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:**

19970630

**7.2. METADATA REVIEW DATE:**

19970630

**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 HMRAD

**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., Bin C15700

**7.4.4.3. CITY:**

Seattle

**7.4.4.4. STATE OR PROVINCE:**

Washington

**7.4.4.5. POSTAL CODE:**

98115

**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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