

**NORTHERN CALIFORNIA
ENVIRONMENTAL SENSITIVITY
INDEX
METADATA**

April 2000

Prepared By:

**National Oceanic and Atmospheric Administration
National Ocean Service
Office of Response and Restoration
Hazardous Materials Response Division
7600 Sand Point Way N.E.
Seattle, Washington 98115-6349
and
State of California
Department of Fish and Game
Office of Spill Prevention and Response
Sacramento, California**

FILE DESCRIBES: Digital data for 1994 Northern California Environmental Sensitivity Index.

FILE CREATED BY: NOAA Office of Response and Restoration
7600 Sand Point Way N.E.
Seattle, WA 98115-6349
Phone: 206-526-6317
Fax: 206-526-6329
email: library@hazmat.noaa.gov

FILE CREATED ON: 20000420

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

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1.0. IDENTIFICATION INFORMATION

1.1. CITATION

1.1.1. ORIGINATOR:

National Oceanic and Atmospheric Administration (NOAA),
National Ocean Service, Office of Response and Restoration,
Hazardous Materials Response Division, Seattle, Washington and the
State of California, Department of Fish and Game, Office of Spill
Prevention and Response, Sacramento, California

1.1.2. PUBLICATION DATE:

200004

1.1.4. TITLE:

Sensitivity of Coastal Environments and Wildlife to Spilled Oil:
Northern California

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:

Northern California

1.1.8. PUBLICATION INFORMATION

1.1.8.1. PUBLICATION PLACE:

Seattle, Washington

1.1.8.2. PUBLISHER:

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

1.1.9. OTHER CITATION DETAILS:

Prepared by Research Planning, Inc., Columbia, South Carolina for
the National Oceanic and Atmospheric Administration (NOAA),
National Ocean Service, Office of Response and Restoration,
Hazardous Materials Response Division, Seattle, Washington and the
State of California, Department of Fish and Game, Office of Spill
Prevention and Response, Sacramento, California

1.1.10 ONLINE LINKAGE:

Not available

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 northern California. ESI data characterize coastal environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats; sensitive biological resources; and human-use resources

1.2.2. PURPOSE:

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

1.3. TIME PERIOD OF CONTENT

1.3.1. TIME PERIOD INFORMATION

1.3.1.3. RANGE OF DATES/TIMES:

The intertidal habitats were mapped during aerial and ground surveys conducted from 20-26 October 1992. The biological and human-use resources data were compiled by regional biologists in 1994. The dates for these data vary and are documented in Section 2.5.1

1.4. STATUS

1.4.1. PROGRESS:

Complete

1.4.2. MAINTENANCE AND UPDATE FREQUENCY:

None planned

1.5. SPATIAL DOMAIN

1.5.1. BOUNDING COORDINATES

1.5.1.1. WEST BOUNDING COORDINATE:

-124.50°

1.5.1.2. EAST BOUNDING COORDINATE:

-122.71°

1.5.1.3. NORTH BOUNDING COORDINATE:

42.00°

1.5.1.4. SOUTH BOUNDING COORDINATE:

38.00°

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:

Northern California: from the California/Oregon border to
Point Reyes

1.7. ACCESS CONSTRAINTS:

None

1.8. USE CONSTRAINTS:

DO NOT USE ESI MAPS FOR NAVIGATIONAL PURPOSES.

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

Acknowledgment of the publishers and contributing sources listed in 1.11.
would be appreciated in products derived from these data.

1.11. DATA SET CREDIT:

This project was supported by the National Oceanic and Atmospheric
Administration (NOAA), National Ocean Service, Office of Response and

Restoration, Hazardous Materials Response Division, Seattle, Washington and the State of California, Department of Fish and Game, Office of Spill Prevention and Response, Sacramento, California.

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 pre-release) and Oracle RDBMS (version 6.0.36.1.1). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80 with 4 X-terminals) with UNIX operating system (HP-UX Release A.09.01). The following files are included in the data set:

| | | |
|--------------|--------------|--------------|
| bio_lut.e00 | biofile.e00 | biores.e00 |
| birds.e00 | breed.e00 | breed_dt.e00 |
| esi.e00 | experts.e00 | fish.e00 |
| habitats.e00 | hydro.e00 | index.e00 |
| invert.e00 | m_mammal.e00 | nests.e00 |
| seasonal.e00 | soc_dat.e00 | soc_lut.e00 |
| socecon.e00 | species.e00 | status.e00 |
| t_mammal.e00 | | |

The entire data set is approximately 56 megabytes.

1.14. CROSS REFERENCE:

The Northern and Central California coasts were previously mapped for the Minerals Management Service (Pacific Outer Continental Shelf Region, Los Angeles), by Woodward-Clyde Consultants, (Environmental Systems Division, San Francisco) in November, 1982

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. 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. Upon completion of digitization, the data are checked for completeness and topological and logical consistency, and then plotted and checked by the mapping geologists. Any errors in the shoreline classification are updated prior to digitization of the biological and socioeconomic 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 U.S. Geological Survey (USGS) topographic quadrangles by a biological expert using data from regional specialists in the form of maps, tables, charts, and written descriptions of wildlife distributions. The data are digitized, checked using both digital and on-screen procedures, plotted, and sent out for review by the regional specialists. The edited maps are updated, checked once again, and the final product plotted (at approximately 1:50,000 scale). A team of specialists reviews the entire series of maps, checks all data, and makes final edits. The data are then merged to form the study-wide layers. The data-merging includes a final quality control check where labels, chains, and polygons are checked for attribute accuracy.

To finalize the data checking process, each coverage is checked using a standardized form by two Geographic Information System (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 and programs are run to generate the unique IDs and associated lookup tables.

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

ESI data are also processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and a MARPLOT ESI product are also included on the CDs for ease of use of the ESI data. The database files are also distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats. Section 3.0, outlining Spatial Data Organization, refers to the source files in ARC export format only.

2.3. COMPLETENESS REPORT:

Shoreline Habitat Mapping:

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 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.

Sensitive Biological Resources:

Regional biologists compiled the biological data. These data denote the key biological resources that are most likely at risk in the event of an oil spill. Six major categories, or ELEMENTS, of biological resources were considered during data compilation: birds, fish, habitats/rare plants, invertebrates, marine mammals, and terrestrial mammals. The ELEMENTS generally correspond to the coverage or geographic data layer names.

There are also six attribute or data tables, BIORES, BREED, SEASONAL, EXPERTS, SPECIES, and STATUS, that are used to store the complex biological data (Fig. 1). Each biological coverage is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or it can be linked directly using RARNUM. The ID is a unique combination of the atlas number (for Northern California this is 7), an element specific number (birds are layer 1, fish are layer 2, etc.), and a unique record number. The items in BIORES include: RARNUM, SPECIES_ID, CONC, SEASON_ID, G_SOURCE, S_SOURCE, ELEMENT, EL_SPE, and EL_SPE_SEA. SPECIES_ID is the numeric identifier of each species and is unique within each ELEMENT. CONC is the concentration of the species and can be 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.

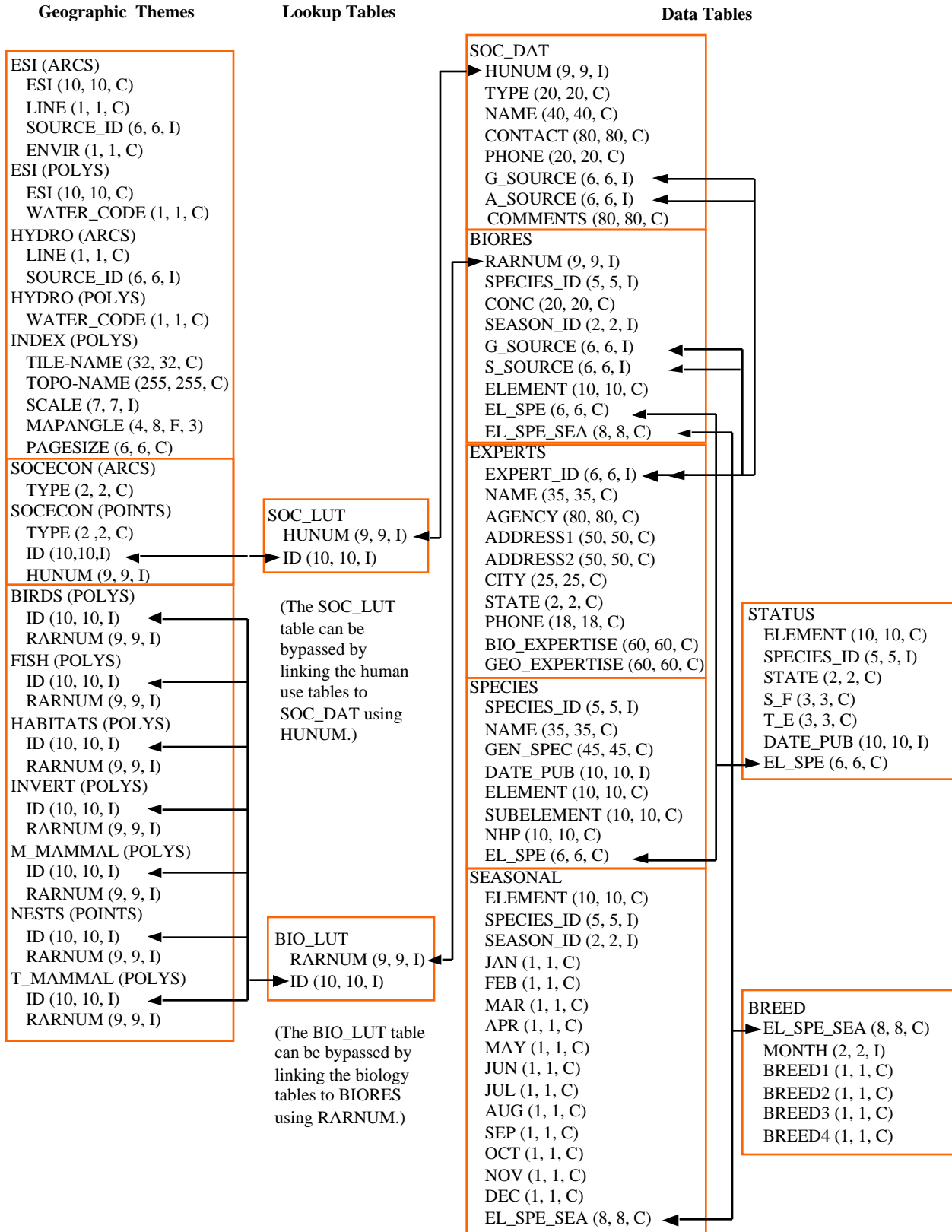


FIGURE 1. Relationship between biology data layers and attribute files.

G_SOURCE and S_SOURCE both hold the link to the EXPERTS data table. These items are duplicated with the G_SOURCE and S_SOURCE naming convention to mimic the current relational data structure. EL_SPE is a concatenation of ELEMENT and SPECIES_ID, and links to the SPECIES and STATUS tables. 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 | Alcid |
| | Diving Coastal Bird |
| | Gull/Tern |
| | Passerine |
| | Pelagic |
| | Raptor |
| | Shorebird |
| | Wading Bird |
| | Waterfowl |
| FISH | Anadromous |
| | Beach Spawner |
| | Kelp Spawner |
| | Reef Fish |
| | Special Concentration |
| HABITAT | Marsh |
| | Submerged aquatic vegetation (sav) |
| | Shrub |
| INVERT | Abalone |
| | Cephalopod |
| | Clam |
| | Conch/Whelk |
| | Echinoderm |
| | Gastropod |
| | Mussel |
| | Oyster |
| | Scallop |
| | Squid/Octopus |
| Crab | |

| | |
|-------------------------|---------------------|
| INVERT <i>continued</i> | Lobster |
| | Shrimp |
| MARINE MAMMAL | Dolphin |
| | Manatee |
| | Sea Lion |
| | Sea Otter |
| | Seal |
| | Whale |
| TERRESTRIAL MAMMAL | Bear |
| | Deer |
| | Mustelid |
| | Rodent |
| REPTILE | Alligator/Crocodile |
| | Sea 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 BREED4 are:

| ELEMENT | BREED 1 | BREED 2 | BREED 3 | BREED 4 |
|----------|----------|--------------|----------|----------|
| BIRD | nesting | laying | hatching | fledging |
| FISH | spawning | outmigration | | |
| INVERT | mating | spawning | | |
| M_MAMMAL | mating | calving | pupping | |

NOTE: There are no BREED variables for HABITAT and TERRESTRIAL MAMMALS.

The EXPERTS data table contains detailed contact and source information for many of the entries in BIORES and the flat BIOFILE (see Fig. 2 below). The EXPERTS table is linked to these tables through EXPERT_ID from either the G_SOURCE or S_SOURCE item. If there is no expert information available, G_SOURCE and S_SOURCE will be set to zero (0). The items in EXPERTS are: EXPERT_ID, NAME (primary expert and/or contact for the resource), AGENCY (affiliation of the listed expert), ADDRESS1, ADDRESS2, CITY, STATE, PHONE, BIO_EXPERTISE (biological expertise of the expert), and GEO_EXPERTISE (geographic extent of expert's expertise).

Due to the complexity of the relational database model, the biological data items are post processed into a flat file format. This file is entitled BIOFILE and it may be used in place of the relational files to ease simple data queries. The items in the flat file are ELEMENT, SUBELEMENT, NAME, GEN_SPEC, S_F, T_E, NHP, DATE_PUB, CONC, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC, BREED1, BREED2, BREED3, BREED4, RARNUM, G_SOURCE, S_SOURCE and BREED. All of these items are the same as their counterparts in the individual files described above, except the item BREED and the BREED1–BREED4 items. BREED is a newly generated variable used to link to the BREED_DT file, a modified, more compact version of the aforementioned BREED file. Breed1–Breed4 give a text summary of when each life stage occurs within that polygon. The life stages referred to are the same as those listed in the previous table. The link to the BIOFILE may be made through BIO_LUT using ID to link to RARNUM, or it may be linked directly to the RARNUM in each of the biology cover's attribute files. As mentioned, BREED_DT is an auxiliary support file to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item. A second supporting data file is EXPERTS. This is the same as the EXPERTS file described above and the link from the flat file is both G_SOURCE and S_SOURCE.

It should be noted that although the flat file eases data query, it is not a normalized database structure, and actual updates performed by the states and other responsible agencies should be done using the relational files.

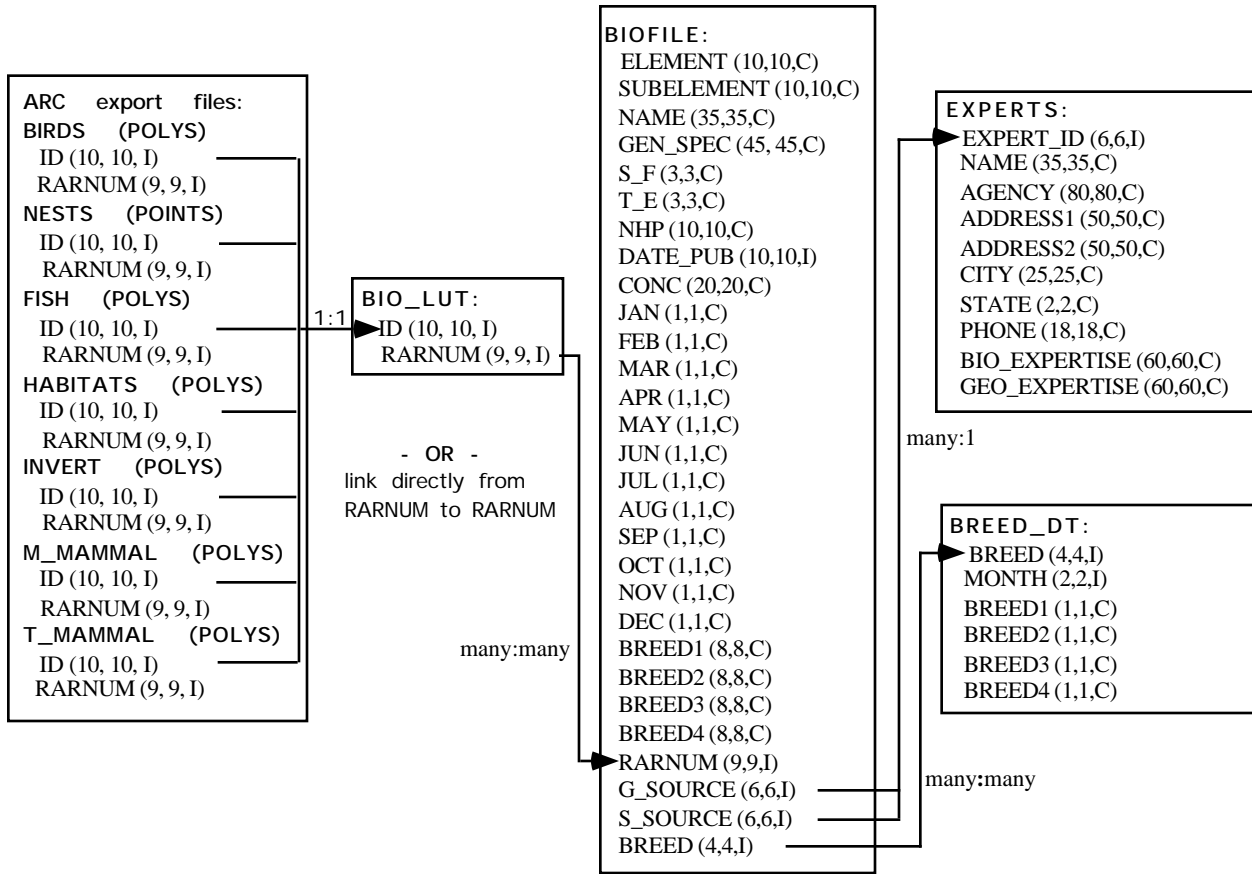


FIGURE 2. Relationship of the BIOFILE to the biological covers and the supplementary BREED_DT and EXPERTS data tables.

Human-Use Resources:

Several human-use, or socioeconomic, features are included in ESI atlases. Entity points and complete chains (arcs) are digitized into the data layer SOCECON. This data set is linked to the data table SOC_DAT using the SOC_LUT lookup table and the items HUNUM and ID. ID is a concatenation of atlas number (7), element number (SOCECON = 10), and unique record number.

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

| Entity Points | | Complete Chains | |
|----------------------|------|------------------------|--------|
| Feature | TYPE | Feature | TYPE |
| Access | A2 | Indian Reservation | IR |
| Airport | A | International Border | IB |
| Aquaculture | AQ | Marine Sanctuary | MS |
| Archaeological Site | AS | National Park | NP |
| Beach | B | Park | P |
| Boat Ramp | BR | Pipeline | PL |
| Campground | CP | Regional or State Park | SP |
| Coast Guard | CG | State Border | SB |
| Commercial Fishing | CF | State Beach | B / RB |
| Factory | F2 | Wildlife Refuge | WR |
| Historical Site | HS | | |
| Hoist | H | | |
| Log Storage | LS | | |
| Marina | M | | |
| Marine Sanctuary | MS | | |
| Mining | M2 | | |
| National Park | NP | | |
| Oil Facilities | OF | | |
| Platforms | PF | | |
| Recreational Fishing | RF | | |
| State Park | SP | | |
| Subsistence Fishing | S | | |
| Village | V | | |
| Water Intake | WI | | |
| Wildlife Refuge | WR | | |

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

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 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 that must be understood when utilizing this information.

2.5. LINEAGE

2.5.1. SOURCE INFORMATION:

Coverage or theme name: BIRDS and 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 |
|-------------------------------------------------------------------------------------------|-------------------------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------|-------------------------------|
| David Church, Lisa Burns, and Rich Murphy, San Luis Obispo Dept. of Planning and Building | 1992 | Coastal Resources Inventory, Biological Resource Distributions | Digital, Hardcopy map, Book | Unknown | Varies | Unknown |
| UC Davis, Dan Anderson, 916/752-3576 | 1990 | Brown Pelican Roosting Areas | Digital, Point | None | Unknown | Unknown |
| Eric Kauffman, State of California, State Land Commission | 1993 | Seabird Colonies of the California Coast | Digital, Entity Points | None | 24,000 | 1989-1990 |
| California Department of Fish and Game | 1980 | Atlas of California Coastal Marine Resources | Map | Unknown | 24,000 | 1970's |
| Ecological Consulting, Inc. M.L. Bonnell | 1992 | Mendocino County-Atlas of Living Marine Resources | Map | Unknown | 125,000 | 1971-1987 |
| Arthur Sowls, Anthony DeGange, Jay Nelson, and Gary Lester | 1980 | Catalog of California Seabird Colonies | Digital, Entity Points Provided by Calif. State Land Comm., Ted Fukushima (contact), 916-322-7813 | Bureau of Land Management, U.S. Fish and Wildlife Service, Report No. FWS/OBS-80/7 | 24,000 | Unknown |

NORTHERN CALIFORNIA 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 |
|-------------------------------------------------------------------------------------------------|-------------------------------|--------------------------------------------------------------------------------------|------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------|
| U.S. Fish and Wildlife Service | 1993 | Western Snowy Plover Distribution | Map | Unknown | 24,000 | Unknown |
| A.D. Beccasio, J.S. Isakson, A.E. Redfield, Dames & Moore | 1981 | Pacific Coast Ecological Inventory - San Luis Obispo, California | Map, a report accompanies the map series | Biological Services Program, USFWS, Slidell, La. Report No. FWS/OBS-81/30, 159 pp. | 250,000 | 1921-1981 |
| H.R. Carter <i>et al.</i> | 1992 | Breeding Populations of Seabirds on the Northern California Coast | Book | U.S. Fish and Wildlife Service, Point Reyes Bird Observatory, and Minerals Management Office | None | 1989-1991 |
| S.W. Harris | 1991 | North-western California Birds, Vol. II, Part 2 | Book | Unknown | None | 1940-1987 |
| BLM and U.S. Fish and Wildlife Service, prepared by Jones and Stokes Assoc., Sacramento, Calif. | 1981 | An Ecological Characterization of the Central and Northern California Coastal Region | Book | Unknown | None | Unknown |
| Morro Coast Audubon Society, Inc. | 1985 | The Birds of San Luis Obispo County, California | Book | Unknown | None | Unknown |
| Center for Marine Studies | 1983 | Marine Mammals and Seabirds of Central and Northern California | Book | Study prepared for MMS | None | 1980-1983 |

NORTHERN CALIFORNIA META DATA

| 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 |
|--------------------------------------------------------------------------------------------------|---------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------|---------------------------------------------------|---------------------------------------------|
| William S. Leet, Christopher Dewees, and Charles Haugen | 1992 | California Living Marine Resources and Their Utilization | Book | Unknown | None | Unknown |
| California Department of Fish and Game, Natural Heritage Division | 1993 | State and Federal Endangered and Threatened Animals of California | Book | Unknown | None | 1993 |
| David Zeiner | 1990 | California's Wildlife: Vol. 2. Birds | Book | Unknown | None | 1980's |
| Sarah Allen, National Park Service | None | Natural History Information on the State of California | Personal Knowledge | None | None | 1994 |
| Paul Kelly, California Department of Fish and Game - Office of Oil Spill Prevention and Response | None | Natural History Information on Seabirds, Shorebirds, and Waterfowl | Personal Knowledge | None | None | 1994 |
| Terry Palmisno, California Department of Fish and Game | None | Inlands, Wetlands, and Riparian | Personal Knowledge | None | None | 1994 |
| Tom Eddell, Morro Coast Audubon Society, 805/995-1691 | None | Birds of San Luis Obispo County, Distributions and Densities | Personal Knowledge | None | None | 1994 |
| Bruce Elliott, California Department of Fish and Game, Wildlife Division, 408/649-2890 | None | Locations of Bird Rookeries & Sensitive Nesting Sites | Personal Knowledge | None | None | 1994 |

2.5.1. SOURCE INFORMATION:

Coverage or theme name: FISH

2.5.1.1. SOURCE CITATION

| 2.5.1.1.1 Originator | 2.5.1.1.2 Publication Date | 2.5.1.1.4 Title | 2.5.1.1.6 Geospatial Data Presentation Form | 2.5.1.1.8 Publication Information | 2.5.1.2 Source Scale Denominator | 2.5.1.4 Source Time Period |
|------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------|---------------------------------------------|
| David Church, Lisa Burns, and Rich Murphy, San Luis Obispo Department of Planning and Building | 1992 | Coastal Resources Inventory, Biological Resource Distributions | Digital map, Hard-copy map, book | Unknown | Varies | Unknown |
| Bob Tasto, California Department of Fish and Game-Environmental Services Division | 1977 | Environmental Impacts on Herring, Bivalves, and Commercial Fisheries | Map | California Coastal Commission | 24,000 | Unknown |
| California Department of Fish and Game | 1980 | Atlas of California Coastal Marine Resources | Map | Unknown | 24,000 | 1970's |
| Ecological Consulting, Inc. M.L. Bonnell | 1992 | Mendocino County-Atlas of Living Marine Resources | Map | Unknown | 125,000 | 1971-1987 |
| A.D. Beccasio, J.S. Isakson, and A.E. Redfield, Dames & Moore | 1981 | Pacific Coast Ecological Inventory - San Luis Obispo, California | Map, a report accompanies the map series | Biological Services Program, USFWS Slidell, La. Report No. FWS/OBS-81/30, 159 pp. | 250,000 | 1921-1981 |
| W.S. Leet, C.M. Dewees, and C.W. Haugen (Eds.) | 1992 | California's Living Marine Resources and Their Utilization | Book | Unknown | None | Unknown |

NORTHERN CALIFORNIA META DATA

| 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 |
|-------------------------------------------------------------------------------------------------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-------------------------------------------------------------------------------------------------|-----------------------------------------|----------------------------------------------------------------------------------------------|
| BLM and U.S. Fish and Wildlife Service, prepared by Jones and Stokes Assoc., Sacramento, Calif. | 1981 | An Ecological Characterization of the Central and Northern California Coastal Region | Book | Unknown | None | Unknown |
| Robert G. Titus, Report to California Department of Fish and Game | 1992 | Status of California Steelhead in Coastal Drainages South of San Francisco Bay | Book | Unknown | None | 1991 |
| Peter Moyle, Jack Williams, and Eric Wikramanayake | 1989 | Fish Species of Special Concern of California | Book | Unknown | None | Unknown |
| William S. Leet, Christopher Dewees, and Charles Haugen | 1992 | California Living Marine Resources and Their Utilization | Book | Unknown | None | Unknown |
| California Department of Fish and Game, Natural Heritage Division | 1993 | State and Federal Endangered and Threatened Animals of California | Book | Unknown | None | Unknown |
| R.L. Emmett, S.L. Stone, S.A. Hintor, and M.E. Monaco | 1991 | Distribution and Abundance of Fishes and Invertebrates in West Coast Estuaries - Volume II: Species Life History Summaries | Book | ELMR Rep. No. 8, NOAA/NOS Strategic Environmental Assessments Division, Rockville, Md., 329 pp. | None | Info compiled from historical and current literature and expert personal comm. and knowledge |

NORTHERN CALIFORNIA 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 |
|-----------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------|---------------------------------------------------|---------------------------------------------|
| Diane Watters, California Department of Fish and Game | None | Status and Location in San Francisco Bay of Herring | Personal Knowledge | None | None | 1994 |
| Bill Cox, California Department of Fish and Game–Inland Fisheries Division | None | Distribution, Abundance, Species, and Activity of Streams | Personal Knowledge | None | None | 1994 |
| Ken Oda, California Department of Fish and Game–Marine Resource Division | None | Distribution and Abundance of Smelt and Herring | Personal Knowledge | None | None | 1994 |
| Jim Hardwick, California Department of Fish and Game–Office of Oil Spill Prevention and Response | None | Squid, Herring, and Rockfish | Personal Knowledge | None | None | 1994 |
| Weldon Jones, California Department of Fish and Game–Inland Fisheries Division | None | Distribution, Abundance, Species, and Activity of Streams | Personal Knowledge | None | None | 1994 |
| Tom Moore, California Department of Fish and Game–Marine Resources Division, 707/875-2521 | None | Abundance and Distri- bution of Herring | Personal Knowledge | None | None | 1994 |
| Dave Thomas, California Department of Fish and Game | None | Status and Life History of Rockfish | Personal Knowledge | None | None | 1994 |

NORTHERN CALIFORNIA META DATA

| 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 |
|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|------------------------------------------------------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------|---------------------------------------------------|---------------------------------------------|
| Sandy Owen, California Department of Fish and Game | None | Fisheries, Local Knowledge | Personal Knowledge | None | None | 1994 |
| Bob Hardy, California Department of Fish and Game, 805/772-3011 | None | Fisheries and Marine Resources in San Luis Obispo Co. | Personal Knowledge | None | None | 1994 |
| Susan McBride, California Sea Grant, 707/443-8369 | None | Locations of Commercial Species | Personal Knowledge | None | None | 1994 |
| Karen Worcester, Regional Water Quality Control Board, 805/549- 3333 | None | Fishes (esp. tidewater goby) Within San Luis Obispo Co. Creeks and Morro Bay | Personal Knowledge | None | None | 1994 |
| David Ven Tresca, California Department of Fish and Game, Marine Resources Division, 408/649-2881 | None | Marine Fisheries, Rockfishes | Personal Knowledge | None | None | 1994 |
| Jennifer Nelson, California Department of Fish and Game, Fisheries Division, 408/649-7153 | None | Spawning Streams for Steelhead Trout and Salmon spp. | Personal Knowledge | None | None | 1994 |

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 |
|----------------------------------------------------------------------------------------|---------------------------------------------|------------------------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------------------------------|----------------------------------------------------------|
| David Church, Lisa Burns, and Rich Murphy, San Luis Obispo Dept. Planning and Building | 1992 | Coastal Resources Inventory, Biological Resource Distributions | Digital map, Hard-copy map, book | Unknown | Varies | Unknown |
| A.D. Beccasio, J.S. Isakson, and A.E. Redfield, Dames & Moore | 1981 | Pacific Coast Ecological Inventory - San Luis Obispo, California | Map, a report accompanies the map series | Biological Services Program, USFWS Slidell, La., Report No. FWS/OBS-81/30, 159 pp. | 250,000 | Data for map series compiled from many sources 1921-1981 |
| William S. Leet, Christopher Dewees, and Charles Haugen | 1992 | California Living Marine Resources and Their Utilization | Book | Unknown | None | Unknown |
| Tom Moore, California Department of Fish and Game-Marine Resources Division | None | Abundance and Distribution of Eelgrass | Personal Knowledge | None | None | 1994 |
| Deborah Hillyard, California Department of Fish and Game | None | Species and Location in Monterey County and Santa Cruz Counties | Personal Knowledge | None | None | 1994 |

2.5.1. SOURCE INFORMATION:

Coverage or theme name: INDEX

2.5.1.1. SOURCE CITATION

| 2.5.1.1.1 | 2.5.1.1.2 | 2.5.1.1.4 | 2.5.1.1.6 | 2.5.1.1.8 | 2.5.1.2 | 2.5.1.4 |
|-------------------------|-------------------------|------------------|------------------------------------------|--------------------------------|---------------------------------|---------------------------|
| Originator | Publication Date | Title | Geospatial Data Presentation Form | Publication Information | Source Scale Denominator | Source Time Period |
| Research Planning, Inc. | | Map Index | Complex polygons | NOAA | 24000 | 1998 |

2.5.1. SOURCE INFORMATION:

Coverage or theme name: INVERT

2.5.1.1. SOURCE CITATION

| 2.5.1.1.1 | 2.5.1.1.2 | 2.5.1.1.4 | 2.5.1.1.6 | 2.5.1.1.8 | 2.5.1.2 | 2.5.1.4 |
|----------------------------------------------------------------------------------------|-------------------------|------------------------------------------------------------------|------------------------------------------|------------------------------------------------------------------------------------|---------------------------------|----------------------------------------------------------|
| Originator | Publication Date | Title | Geospatial Data Presentation Form | Publication Information | Source Scale Denominator | Source Time Period |
| David Church, Lisa Burns, and Rich Murphy, San Luis Obispo Dept. Planning and Building | 1992 | Coastal Resources Inventory, Biological Resource Distributions | Digital, Hardcopy map, book | Unknown | Varies | Unknown |
| California Dept. of Fish and Game | 1980 | Atlas of California Coastal Marine Resources | Map | Unknown | 24,000 | 1970's |
| Ecological Consulting, Inc., M.L. Bonnell | 1992 | Mendocino County-Atlas of Living Marine Resources | Map | Unknown | 125,000 | 1971-1987 |
| A.D. Beccasio, J.S. Isakson, and A.E. Redfield, Dames & Moore | 1981 | Pacific Coast Ecological Inventory - San Luis Obispo, California | Map, a report accompanies the map series | Biological Services Program, USFWS Slidell, La., Report No. FWS/OBS-81/30, 159 pp. | 250,000 | Data for map series compiled from many sources 1921-1981 |

NORTHERN CALIFORNIA 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 |
|-----------------------------------------------------------------------------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------|--------------------------------------------------------------------------------------------------|
| BLM and U.S. FWS, prepared by Jones and Stokes Assoc., Sacramento, Calif. | 1981 | An Ecological Characterization of the Central and Northern California Coastal Region | Book | Unknown | None | Unknown |
| William S. Leet, Christopher Dewees, and Charles Haugen | 1992 | California Living Marine Resources and Their Utilization | Book | Unknown | None | Unknown |
| R.L. Emmett, S.L. Stone, S.A. Hintor, and M.E. Monaco | 1991 | Distribution and Abundance of Fishes and Invertebrates in West Coast Estuaries - Volume II: Species Life History Summaries | Book | ELMR Rept. No. 8, NOAA/NOS Strategic Environmental Assessments Division, Rockville, Md., 329 pp. | None | Info compiled from the historical and current literature and expert personal comm. and knowledge |
| Tom Moore, California Department of Fish and Game-Marine Resources Division | None | Abundance and Distribution of Bivalves | Personal Knowledge | None | None | 1994 |
| Frank Henry, California Department of Fish and Game | None | Gastropods and Echinoderms | Personal Knowledge | None | None | 1994 |
| Sandy Owen, California Department of Fish and Game, 805/772-3011 | None | Pismo Clams | Personal Knowledge | None | None | 1994 |

| 2.5.1.1.1 Originator | 2.5.1.1.2 Publication Date | 2.5.1.1.4 Title | 2.5.1.1.6 Geospatial Data Presentation Form | 2.5.1.1.8 Publication Information | 2.5.1.2 Source Scale Denominator | 2.5.1.4 Source Time Period |
|----------------------------------------------------------------------------------------------------|-------------------------------|------------------------------------------------------------------------------|------------------------------------------------|--------------------------------------|-------------------------------------|-------------------------------|
| Jerry Spratt, California Department of Fish and Game, Marine Division, 408/649-2880 | None | Bivalves, Gastropods, and Marine Invertebrates | Personal Knowledge | None | None | 1994 |
| Deborah Hillyard, California Department of Fish and Game | Unknown | Species and Location in Monterey County and Santa Cruz County | Personal Knowledge | None | None | 1994 |
| Susan McBride, California Sea Grant, 707/443-8369 | None | Commercial Fisheries, Locations by Species | Personal Knowledge | None | None | 1994 |

2.5.1. SOURCE INFORMATION:

Coverage or theme name: M_MAMMALS and T_MAMMALS

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 |
|----------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------|------------------------------------------------|--------------------------------------|-------------------------------------|-------------------------------|
| David Church, Lisa Burns, and Rich Murphy, San Luis Obispo Dept. of Planning and Building | 1992 | Coastal Resources Inventory, Biological Resource Distributions | Digital map, Hard-copy map, book | Unknown | Varies | Unknown |
| UC Davis, Dan Anderson, 916/752-3576 | 1991 | Sea Otter Sightings by Aerial Survey | Digital, Point | None | Unknown | 1990 |
| California Department of Fish and Game | 1980 | Atlas of California Coastal Marine Resources | Map | Unknown | 24,000 | 1970's |

NORTHERN CALIFORNIA 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 |
|----------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------------------------------------------------------|----------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------|----------------------------------------------------------|
| Ecological Consulting, Inc., M.L. Bonnell | 1992 | Mendocino County-Atlas of Living Marine Resources | Map | Unknown | 125,000 | 1971-1987 |
| A.D. Beccasio, J.S. Isakson, and A.E. Redfield, Dames & Moore | 1981 | Pacific Coast Ecological Inventory - San Luis Obispo, California | Map, a report accompanies the map series | Biological Services Program, USFWS Slidell, La., Report No. FWS/OBS-81/30, 159 pp. | 250,000 | Data for map series compiled from many sources 1921-1981 |
| Center for Marine Studies | 1983 | Marine Mammals and Seabirds of Central and Northern California | Book | Study prepared for MMS | None | 1980-1983 |
| William S. Leet, Christopher Dewees, and Charles Haugen | 1992 | California Living Marine Resources and Their Utilization | Book | Unknown | None | Unknown |
| David Zeiner | 1990 | California's Wildlife: Vol. 3. Mammals | Book | Unknown | None | 1980's |
| Doyle Hanan, California Department of Fish and Game-Marine Resources Division | None | Distribution, Life History, and Abundance of Harbor Seals and Pinnipeds | Personal Knowledge | None | None | 1994 |
| Jack Ames, California Department of Fish and Game-Office of Oil Spill Prevention and Response, 408/649-2893 | None | Distribution, Abundance, and Life History of Sea Otters | Personal Knowledge | None | None | 1994 |

| 2.5.1.1.1 Originator | 2.5.1.1.2 Publication Date | 2.5.1.1.4 Title | 2.5.1.1.6 Geospatial Data Presentation Form | 2.5.1.1.8 Publication Information | 2.5.1.2 Source Scale Denominator | 2.5.1.4 Source Time Period |
|------------------------------------------------------------------------|-------------------------------|--------------------------------------------------------------------------------|------------------------------------------------|--------------------------------------|-------------------------------------|-------------------------------|
| Terry Palmisno, California Department of Fish and Game | None | Inland, Wetlands, and Riparian | Personal Knowledge | None | None | 1994 |
| Dr. Aryan Roest, California Polytechnic State University, 805/528-4404 | None | Marine Mammals-Distribution Within San Luis Obispo County | Personal Knowledge | None | None | 1994 |
| Brian Hatfield, U.S. Fish and Wildlife Service, 805/927-3893 | None | Sea Otters, Elephant Seals and Other Marine Mammal Densities and Distributions | Personal Knowledge | None | None | 1994 |
| Fred Wendell, California Department of Fish and Game, 805/772-1714 | None | Sea Otters | Personal Knowledge | None | None | 1994 |

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 |
|-----------------------------------------------------------------------------------|-------------------------------|----------------------------------------------------------------------|------------------------------------------------|--------------------------------------|-------------------------------------|-------------------------------|
| Bob Tasto, California Department of Fish and Game-Environmental Services Division | 1977 | Environmental Impacts on Herring, Bivalves, and Commercial Fisheries | Map | Unknown | 24,000 | Unknown |
| State Water Resources Control Board | 1976 | Areas of Special Biological Significance | Map | Unknown | 2-5" = 1 mile | Unknown |

NORTHERN CALIFORNIA 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 |
|-------------------------------------------------------------------------------|---------------------------------------------|-----------------------------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------|---------------------------------------------------|---------------------------------------------|
| Emil Smith and Thom Johnson | 1974 | The Marine Life Refuges and Reserves of California | Map | Unknown | 1" = 2 miles | Unknown |
| California Coastal Commission | 1987 | California Coastal Resource Guide | Book | Unknown | None | 1980's |
| California Coastal Commission | 1991 | California Coastal Access Guide | Book | unknown | None | 1980's |
| Rob Collins, California Department of Fish and Game-Marine Resources Division | 1993 | State Aquaculture Leases | Book | Unknown | None | Unknown |
| Karen Worcester, Regional Water Quality Control Board, 805/549-3333 | None | Fisheries Within San Luis Obispo creeks & Morro Bay | Personal Knowledge | None | None | 1994 |
| Bob Hardy, California Department of Fish and Game, 805/772-3011 | None | Fisheries and Marine Resources in San Luis Obispo Co. | Personal Knowledge | None | None | 1994 |
| Mickey Burke, Tribal Member, 707/487-7055 | None | Location and Species of Native American and Subsistence Fishing Areas | Personal Knowledge | None | None | 1994 |
| Ted Kuipen, Kuipen Mariculture, 707/822-9057 | None | Locations Off-the-ground Culture of Commercial Oyster Aquaculture | Personal Knowledge | None | None | 1994 |
| Susan McBride, California Sea Grant, 707/443-8369 | None | Commercial Fisheries, Locations by Species | Personal Knowledge | None | None | 1994 |

| 2.5.1.1.1 Originator | 2.5.1.1.2 Publication Date | 2.5.1.1.4 Title | 2.5.1.1.6 Geospatial Data Presentation Form | 2.5.1.1.8 Publication Information | 2.5.1.2 Source Scale Denominator | 2.5.1.4 Source Time Period |
|----------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------|------------------------------------------------|--------------------------------------|-------------------------------------|-------------------------------|
| Craig Codd, Coast Oyster, 707/442-2974 | None | Locations On-the-ground Culture of Commercial Oyster Aquaculture | Personal Knowledge | None | None | 1994 |
| David Ven Tresca, California Department of Fish and Game,- Marine Resources Division, 408/649-2881 | None | Marine Fisheries and Resources, Locations of Ecological Reserves | Personal Knowledge | None | None | 1994 |
| Jerry Spratt, CDF&G, Marine Division, 408/649-2880 | None | Centers of Sport, Commercial, and Commercial Sport Fishing Activity | Personal Knowledge | None | None | 1994 |

2.5.2. PROCESS STEP

2.5.2.1. PROCESS DESCRIPTION:

The digitization of shoreline types, biological resources, and human-use resources is a complex and highly quality-controlled process. In order to facilitate digitizing, the entire study area is split into individual quadrangles using the INDEX data layer. The first layer of information digitized is the ESI shoreline classification. Upon completion of digitization, the data are checked for completeness and topological and logical consistency, and are then plotted and checked by the overflight/field specialists. Any errors in the shoreline classification are updated prior to digitization of the biological and socioeconomic layers. All data use the shoreline as the geographic reference so that there are no slivers in the geographic layers. The biological information is compiled onto 1:24,000 USGS topographic quadrangles by an in-house biological and GIS expert using the data from

regional specialists in the form of maps, tables, charts, and written descriptions of wildlife distributions. The data are digitized, checked using both digital and on-screen procedures, plotted, and sent out for review by the regional specialists. The edited maps are updated on the computer, checked once again, and plotted at final map scale. A team of specialists reviews the entire series of maps, checks all data, and makes final edits. The data are merged to form the study-wide layers that are described in this document. The data-merging includes a final quality control check where topological consistency, rules for geography, and database to geography are checked and reported to the GIS manager.

2.5.2.3. PROCESS DATE:

199409

2.5.2.6. PROCESS CONTACT

2.5.2.6.1. CONTACT PERSON PRIMARY

2.5.2.6.1.1. CONTACT PERSON:

Jill Petersen

2.5.2.6.1.2. CONTACT ORGANIZATION:

NOAA, Office of Response and
Restoration

2.5.2.6.3. CONTACT POSITION:

GIS Manager

2.5.2.6.4. CONTACT ADDRESS

2.5.2.6.4.1. ADDRESS TYPE:

Physical Address

2.5.2.6.4.2. ADDRESS:

7600 Sand Point Way N.E.

2.5.2.6.4.3. CITY:

Seattle

2.5.2.6.4.4. STATE OR PROVINCE:

WA

2.5.2.6.4.5. POSTAL CODE:

98115-6349

2.5.2.6.5. CONTACT VOICE TELEPHONE:

(206) 526-6944

2.5.2.6.7. CONTACT FACSIMILE TELEPHONE:

(206) 526-6329

2.5.2.6.8. CONTACT ELECTRONIC MAIL ADDRESS:

jill_petersen@hazmat.noaa.gov.us

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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 | 159 | 159 | 479 | 95,857 | | | 386 |
| ESI | 1 | 515 | 515 | 3,373 | 135,796 | | | 3,248 |
| FISH | 1 | 1,944 | 1,944 | 2,088 | 74,291 | | | 2,049 |
| HABITATS | 1 | 3,422 | 3,422 | 3,614 | 112,663 | | | 3,566 |
| HYDRO | 1 | 7,064 | 7,064 | 8,726 | 319,327 | | | 8,964 |
| INDEX | 1 | 39 | 39 | 172 | 176 | | | 134 |
| INVERT | 1 | 4,563 | 4,563 | 4,815 | 136,593 | | | 4,749 |
| M_MAMMAL | 1 | 239 | 239 | 448 | 82,932 | | | 411 |
| NESTS | | | | | | | 127 | |
| SOCECON | | | | 103 | 2,187 | | 275 | 1,549 |
| T_MAMMAL | 1 | 2 | 2 | 5 | 814 | | | 5 |

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4.0. SPATIAL REFERENCE INFORMATION

4.1. HORIZONTAL COORDINATE SYSTEM DEFINITION

4.1.1. GEOGRAPHIC

4.1.1.1. LATITUDE RESOLUTION:

0.00005

4.1.1.2. LONGITUDE RESOLUTION:

0.00005

4.1.1.3. GEOGRAPHIC COORDINATE UNITS:

Decimal Degrees

4.1.4. GEODETIC MODEL

4.1.4.1. HORIZONTAL DATUM NAME:

North American Datum of 1927

4.1.4.2. ELLIPSOID NAME:

Clarke, 1866

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5.0. ENTITY AND ATTRIBUTE INFORMATION

5.1. DETAILED DESCRIPTION: BIO_LUT

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

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:

5.1.1.2. ENTITY TYPE DEFINITION:

| | | |
|-------------------|---------|--------|
| <u>Attributes</u> | integer | RARNUM |
| | integer | ID |

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

RARNUM

5.1.2.2. ATTRIBUTE DEFINITION:

An identifier that links the BIO_LUT table to the BIORES table

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

ID

5.1.2.2. ATTRIBUTE DEFINITION:

An identifier that links the biology coverages to the BIO_LUT table

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

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5.1. DETAILED DESCRIPTION: BIOFILE

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

5.1.1. ENTITY TYPES:

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

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ELEMENT

5.1.2.2. ATTRIBUTE DEFINITION:

Major categories of biological data

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

| | |
|----------|--------------------------|
| BIRD | Birds |
| FISH | Fish |
| HABITAT | Habitats and Rare Plants |
| INVERT | Invertebrates |
| M_MAMMAL | Marine Mammals |
| T_MAMMAL | Terrestrial Mammals |

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

SUBELEMENT

5.1.2.2. ATTRIBUTE DEFINITION:

Species subgroup

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

abalone
 alcid
 anadromous
 beach_sp
 crab
 diving
 dolphin
 echinoderm
 gull_tern
 kelp_sp

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

mustelid
oyster
pelagic
raptor
sav
sea_lion
seal
shorebird
shrimp
shrub
special
wading
waterfowl
whale

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

NAME

5.1.2.2. ATTRIBUTE DEFINITION:

Species common name

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Abalone
Aleutian goose
American avocet
American bittern
Ashy storm-petrel
Bald eagle
Bay ghost shrimp
Beach layia
Black brant
Black oystercatcher
Black rail

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Black scoter (common)
Black-crowned night heron
Brandts cormorant
Brown pelican
Bull kelp
California black rail
California halibut
California sea lion
Canada goose
Canvasback
Cassins auklet
Chinook salmon (king)
Clover lupine
Coho salmon (silver)
Common loon
Common murre
Common Pacific littleneck clam
Cutthroat trout
Dalls porpoise
Diving birds
Double-crested cormorant
Dungeness crab
Eared grebe
Eelgrass
Eulachon
Fork-tailed storm-petrel
Gaper clam
Giant kelp
Gray whale
Great blue heron
Great egret
Greater scaup
Green sturgeon
Gulls
Harbor porpoise
Harbor seal
Harlequin duck
Horned grebe
Howells spineflower
Leachs storm-petrel

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Marbled godwit
 Marbled murrelet
 Marin bent grass
 Menzies wallflower
 Minke whale
 Native Pacific oyster
 Night smelt
 Northern (Steller) sea lion
 Northern elephant seal
 Northern phalarope
 Northern shoveler
 Osprey
 Pacific herring
 Pacific lamprey
 Pacific razor clam
 Pelagic cormorant
 Peregrine falcon
 Pied-billed grebe
 Pigeon guillemot
 Purple shore crab
 Rainbow trout (steelhead)
 Raptors
 Red phalarope
 Red sea urchin
 Red-breasted merganser
 Red-necked grebe
 Redtail surfperch
 Rhinoceros auklet
 River otter
 Rockfish
 Salmon sp.
 Salt marsh birds-beak
 Sanderling
 Shorebirds
 Short-billed dowitcher
 Snowy plover
 Soft-shell clam
 Sooty shearwater
 Sora rail
 Striped bass

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Surf scoter
Surf smelt
Surfperch
Terns
Tidewater goby
Tufted puffin
Virginia rail
Wading birds
Washington butter clam
Waterfowl
Western grebe
Western gull
Western lily
Whistling swan (tundra swan)
White pelican
White sturgeon
White-winged scoter
Willet

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

GEN_SPEC

5.1.2.2. ATTRIBUTE DEFINITION:

Species scientific name

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Acipenser medirostris
Acipenser transmontanus
Aechmophorus occidentalis
Agrostis blasdalei marinensis
Amphistichus rhodoterus
Anas clypeata
Ardea herodias

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Aythya marila
Aythya valisineria
Baleonoptera acutorostrata
Botaurus lentiginosus
Brachyramphus marmoratus
Branta bernicla
Branta canadensis
Branta canadensis leucopareia
Calidris alba
Callianassa californiensis
Cancer magister
Casmerodius albus
Catoptrophorus semipalmatus
Cepphus columba
Cerorhinca monocerata
Charadrius alexandrinus
Chorizanthe howellii
Clupea harengus pallasii
Cordylantus maritimus maritimus
Embiotocidae
Entosphenus tridentatus
Erysimum menziesii
Eschrichtius robustus
Eucyclogobius newberryi
Eumetopias jubatus
Falco peregrinus
Gavia immer
Haematopus bachmani
Haliaeetus leucocephalus
Haliotis sp.
Hemigrapsus nudus
Histrionicus histrionicus
Hypomesus pretiosus
Larus occidentalis
Laterallus jamaicensis
Laterallus jamaicensis coturniculus
Layia carnosa
Lilium occidentale
Limnodromus griseus
Limosa fedoa

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Lunda cirrhata
Lupinus tidestromii tidestromii
Lutra canadensis
Macrocystis pyrifera
Melanitta deglandi
Melanitta nigra
Melanitta perspicillata
Mergus serrator
Mirounga angustirostris
Morone saxatilis
Mya arenaria
Nereocystis luetkeana
Nycticorax nycticorax
Oceanodroma furcata
Oceanodroma homochroa
Oceanodroma leucorhoa
Olor columbianus
Oncorhynchus kisutch
Oncorhynchus mykiss
Oncorhynchus tshawytscha
Ostrea lurida
Pandion haliaetus
Paralichthys californicus
Pelecanus erythrorhynchos
Pelecanus occidentalis
Phalacrocorax auritus
Phalacrocorax pelagicus
Phalacrocorax penicillatus
Phalaropus fulicarius
Phalaropus lobatus
Phoca vitulina
Phocoena phocoena
Phocoenoides dalli dalli
Podiceps auritus
Podiceps grisegena
Podiceps nigricollis
Podilymbus podiceps
Porzana carolina
Protothaca staminea
Ptychoramphus aleuticus

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Puffinus griseus
 Rallus limicola
 Recurvirostra americana
 Salmo clarki
 Saxidomus giganteus
 Sebastes spp.
 Siliqua patula
 Spirinchus starksi
 Strongylocentrotus franciscanus
 Thaleichthys pacificus
 Tresus nuttallii
 Uria aalge
 Zalophus californianus
 Zostera marina

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

S_F

5.1.2.2. ATTRIBUTE DEFINITION:

State and Federal status

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:

| | |
|-----|----------------------------|
| F | Federally listed |
| S | State listed |
| S/F | State and Federally listed |

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

USFWS, CDFG

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

T_E

5.1.2.2. ATTRIBUTE DEFINITION:

Threatened and endangered status

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

| | |
|-----|---------------------------------------|
| E | Endangered |
| E/E | Endangered on Federal and State lists |
| T | Threatened |
| T/T | Threatened on Federal and State lists |

**5.1.2.4.1.3. ENUMERATED DOMAIN VALUE
DEFINITION SOURCE:
USFWS, CDFG**

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

NHP

5.1.2.2. ATTRIBUTE DEFINITION:

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

**.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

| | |
|------------------------------|--|
| Not supplied with this atlas | |
|------------------------------|--|

5.1.2.1. ATTRIBUTE LABEL:

DATE_PUB

5.1.2.2. ATTRIBUTE DEFINITION:

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

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

Not supplied with this atlas

5.1.2.1. ATTRIBUTE LABEL:

CONC

5.1.2.2. ATTRIBUTE DEFINITION:

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

JAN

5.1.2.2. ATTRIBUTE DEFINITION:

Present in January

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

X

Present

Not Present

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

FEB

5.1.2.2. ATTRIBUTE DEFINITION:

Present in February

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

X

Present

Not Present

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

MAR

5.1.2.2. ATTRIBUTE DEFINITION:

Present in March

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

X

Present

Not Present

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

APR

5.1.2.2. ATTRIBUTE DEFINITION:

Present in April

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

X

Present
Not Present

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

MAY

5.1.2.2. ATTRIBUTE DEFINITION:

Present in May

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

X

Present
Not Present

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

JUN

5.1.2.2. ATTRIBUTE DEFINITION:

Present in June

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

X

Present
Not Present

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

JUL

5.1.2.2. ATTRIBUTE DEFINITION:

Present in July

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

X

Present
Not Present

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

AUG

5.1.2.2. ATTRIBUTE DEFINITION:

Present in August

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

X

Present
Not Present

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

SEP

5.1.2.2. ATTRIBUTE DEFINITION:

Present in September

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

X

Present
Not Present

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

OCT

5.1.2.2. ATTRIBUTE DEFINITION:

Present in October

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

X

Present
Not Present

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

NOV

5.1.2.2. ATTRIBUTE DEFINITION:

Present in November

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

X

Present
Not Present

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

DEC

5.1.2.2. ATTRIBUTE DEFINITION:

Present in December

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

X

Present

Not Present

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

BREED1

5.1.2.2. ATTRIBUTE DEFINITION:

Species' breeding or life stage textual summary where:

if ELEMENT = BIRD then BREED1 = nesting;

if ELEMENT = FISH then BREED1 = spawning;

if ELEMENT = INVERT then BREED1 = mating;

if ELEMENT = M_MAMMAL then BREED1 = mating

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

JUL-DEC

3 character abbreviation of start and end
month of breed1 activities

-

Not Occurring

N/A

No breed1 activities for this element

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

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

BREED2

5.1.2.2. ATTRIBUTE DEFINITION:

Species' breeding or life stage textual summary where:

if ELEMENT = BIRD then BREED2 = laying;

if ELEMENT = FISH then BREED2 = outmigration;

if ELEMENT = INVERT then BREED2 = spawning;

if ELEMENT = M_MAMMAL then BREED2 = calving

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

| | |
|---------|----------------------------------------------------------------------|
| JUL-DEC | 3 character abbreviation of start and end month of breed2 activities |
| - | Not Occurring |
| N/A | No breed2 activities for this element |

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

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

BREED3

5.1.2.2. ATTRIBUTE DEFINITION:

Species' breeding or life stage textual summary where:

if ELEMENT = BIRD then BREED3 = hatching;

if ELEMENT = M_MAMMAL then BREED3 = pupping

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

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

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
BREED4

5.1.2.2. ATTRIBUTE DEFINITION:
Species' breeding or life stage textual summary where:
if ELEMENT = BIRD then BREED4 = fledging;

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
NOAA

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

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
RARNUM

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

G_SOURCE

5.1.2.2. ATTRIBUTE DEFINITION:

A link to EXPERT_ID in the supplementary data table EXPERTS. Formerly called EXPERT_ID. Item name has been changed to G_SOURCE to maintain consistency with the latest ESI data structure.

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:

A duplicate link to EXPERT_ID in the supplementary data table EXPERTS. The S_SOURCE field has been added to maintain consistency with the latest ESI data structure.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

1-N

Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE

DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

BREED

5.1.2.2. ATTRIBUTE DEFINITION:

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

1-N

Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE

DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

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5.1. DETAILED DESCRIPTION: BIORES

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

5.1.1. ENTITY TYPES:

| 5.1.1.1. ENTITY TYPE LABEL: | 5.1.1.2. ENTITY TYPE DEFINITION: |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <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 BIO_LUT table and directly back to the biology coverages

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

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:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:
SPECIES_ID

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

1-N

Unique number

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

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
CONC

5.1.2.2. ATTRIBUTE DEFINITION:
Relative or actual count of a species concentration at a specific location. Field is blank if no data are 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:
A link from the BIORES table to the seasonality table.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

1-N

Unique number

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

G_SOURCE

5.1.2.2. ATTRIBUTE DEFINITION:

A link to EXPERT_ID in the supplementary data table EXPERTS. Formerly called EXPERT_ID. Item name has been changed to G_SOURCE to maintain consistency with the latest ESI data structure.

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:

A duplicate link to EXPERT_ID in the supplementary data table EXPERTS. The S_SOURCE field has been added to maintain consistency with the latest ESI data structure.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:

1-N

Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

ELEMENT

5.1.2.2. ATTRIBUTE DEFINITION:

Major categories of biological data

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:

BIRD
FISH
HABITAT
INVERT
M_MAMMAL
T_MAMMAL

Birds
Fish
Habitats and Rare Plants
Invertebrates
Marine Mammals
Terrestrial Mammals

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

EL_SPE

5.1.2.2. ATTRIBUTE DEFINITION:

Concatenation of the first character of the ELEMENT and the SPECIES_ID that provides a link to the species table.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

EL_SPE_SEA

5.1.2.2. ATTRIBUTE DEFINITION:

Concatenation of the first character of the ELEMENT, the SPECIES_ID, and the SEASON_ID that provides a link to the seasonality table.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

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5.1. DETAILED DESCRIPTION: BIRDS

The data layer BIRDS contains the polygons with bird species.

The following BIRDS species are found in the Northern California ESI data set:

| SPECIES ID | NAME |
|-------------------|------------------------------|
| 1 | Common loon |
| 4 | Red-necked grebe |
| 5 | Horned grebe |
| 6 | Eared grebe |
| 7 | Western grebe |
| 8 | Double-crested cormorant |
| 9 | Brandt's cormorant |
| 10 | Pelagic cormorant |
| 11 | Whistling swan (tundra swan) |
| 12 | Canada goose |
| 13 | Black brant |
| 20 | Northern shoveler |
| 21 | Canvasback |
| 22 | Greater scaup |
| 28 | Harlequin duck |
| 29 | White-winged scoter |
| 30 | Surf scoter |
| 33 | Red-breasted merganser |
| 37 | Western gull |
| 46 | Common murre |
| 47 | Pigeon guillemot |
| 48 | Marbled murrelet |
| 49 | Cassin's auklet |
| 50 | Rhinoceros auklet |
| 51 | Tufted puffin |
| 53 | Northern phalarope |
| 54 | Great blue heron |
| 64 | Short-billed dowitcher |
| 67 | Sanderling |
| 68 | Black oystercatcher |
| 76 | Bald eagle |
| 77 | Osprey |
| 88 | Great egret |
| 90 | Black-crowned night heron |
| 96 | Leach's storm-petrel |
| 102 | Fork-tailed storm-petrel |
| 107 | Peregrine falcon |
| 118 | Brown pelican |
| 139 | Snowy plover |

| SPECIES ID | NAME |
|------------|-----------------------|
| 141 | American avocet |
| 144 | Ashy storm-petrel |
| 150 | Black rail |
| 155 | Willet |
| 160 | Red phalarope |
| 173 | White pelican |
| 179 | Pied-billed grebe |
| 185 | American bittern |
| 187 | Virginia rail |
| 188 | Sora rail |
| 197 | Black scoter (common) |
| 200 | Sooty shearwater |
| 206 | California black rail |
| 210 | Marbled godwit |
| 215 | Aleutian goose |
| 1,001 | Gulls |
| 1,002 | Shorebirds |
| 1,003 | Waterfowl |
| 1,004 | Wading birds |
| 1,005 | Raptors |
| 1,006 | Diving birds |
| 1,008 | Terns |

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:

GT-Polygons

5.1.1.2. ENTITY TYPE DEFINITION:

| | |
|--------|---------|
| ID | integer |
| RARNUM | integer |

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ID

5.1.2.2. ATTRIBUTE DEFINITION:

A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas number (7), element number (1), and record number. ID values of 9999 are holes in polygons and do not contain information.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE

DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

RARNUM

5.1.2.2. ATTRIBUTE DEFINITION:

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

1-N

Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE

DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

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5.1. DETAILED DESCRIPTION: BREED

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

5.1.1. ENTITY TYPES:

| 5.1.1.1. ENTITY TYPE LABEL: | 5.1.1.2. ENTITY TYPE DEFINITION: |
|------------------------------------|-----------------------------------------|
| <u>Attributes</u> | |
| | EL_SPE_SEA character |
| | MONTH integer |
| | BREED1 character |
| | BREED2 character |
| | BREED3 character |
| | BREED4 character |

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

EL_SPE_SEA

5.1.2.2. ATTRIBUTE DEFINITION:

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

MONTH

5.1.2.2. ATTRIBUTE DEFINITION:

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

| | |
|--------------------------------------------------|-------------------------------------------------------------|
| 5.1.2.4.1.1. ENUMERATED DOMAIN VALUE: | 5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION: |
|--------------------------------------------------|-------------------------------------------------------------|

| | |
|----|-----------|
| 1 | January |
| 2 | February |
| 3 | March |
| 4 | April |
| 5 | May |
| 6 | June |
| 7 | July |
| 8 | August |
| 9 | September |
| 10 | October |
| 11 | November |
| 12 | December |

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

BREED1

5.1.2.2. ATTRIBUTE DEFINITION:

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

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: |
|--------------------------------------------------|-------------------------------------------------------------|

| | |
|---|---------------|
| 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 = spawning;
 if EL_SPE_SEA contains "M" then BREED2 = calving

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:**

| | |
|---|---------------|
| 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 "M" then BREED3 = pupping

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: |
|---------------------------------------|--------------------------------------------------|
| N Y | Not occurring 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;

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: |
|---------------------------------------|--------------------------------------------------|
| N Y | Not occurring 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: BREED_DT

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

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:

5.1.1.2. ENTITY TYPE DEFINITION:

| | | |
|-------------------|--------|-----------|
| <u>Attributes</u> | BREED | integer |
| | MONTH | integer |
| | BREED1 | character |
| | BREED2 | character |
| | BREED3 | character |
| | BREED4 | character |

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

BREED

5.1.2.2. ATTRIBUTE DEFINITION:

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:

1-N

Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

MONTH

5.1.2.2. ATTRIBUTE DEFINITION:

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:

| | |
|----|-----------|
| 1 | January |
| 2 | February |
| 3 | March |
| 4 | April |
| 5 | May |
| 6 | June |
| 7 | July |
| 8 | August |
| 9 | September |
| 10 | October |
| 11 | November |
| 12 | December |

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

BREED1

5.1.2.2. ATTRIBUTE DEFINITION:

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

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

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
BREED2

5.1.2.2. ATTRIBUTE DEFINITION:
Species' breeding or life stage information where:
if EL_SPE_SEA contains "B" then BREED2 = laying;
if EL_SPE_SEA contains "F" then BREED2 = outmigration;
if EL_SPE_SEA contains "I" then BREED2 = spawning;
if EL_SPE_SEA contains "M" then BREED2 = calving

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
NOAA

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

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:
NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
BREED3

5.1.2.2. ATTRIBUTE DEFINITION:
Species' breeding or life stage information where:

if EL_SPE_SEA contains “B” then BREED3 = hatching;

if EL_SPE_SEA contains “M” then BREED3 = pupping

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:

| | |
|---|-------------------------------------|
| N | Not occurring |
| Y | Occurring |
| - | No Breed3 activity for this element |

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

BREED4

5.1.2.2. ATTRIBUTE DEFINITION:

Species’ breeding or life stage information where:

if EL_SPE_SEA contains “B” then BREED4 = fledging;

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:

| | |
|---|-------------------------------------|
| N | Not occurring |
| Y | Occurring |
| - | No Breed4 activity for this element |

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1. DETAILED DESCRIPTION: ESI

The data layer ESI contains arc (Complete Chains) and polygonal (GT-Polygons) features for the ESI shoreline classification. The classification of the features is based upon *Guidelines for Developing Digital Environmental Sensitivity Index Atlases and Data-bases* (Michel, J. and J. Dahlin, 1993, Hazardous Materials Response and Assessment Division, NOAA). The ESI classification was performed 20-26 October 1992.

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 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 northern California shoreline types are listed below. In many cases, the shorelines are also ranked with multiple codes such as 10/7. The first number is the most landward shoreline type, salt marsh, with exposed tidal flats being the shoreline type closest to the water.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

| 5.1.2.4.1.1. ENUMERATED DOMAIN VALUE: | 5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION: |
|---------------------------------------|-----------------------------------------------------------|
| 1A | Exposed Rocky Cliffs |
| 1A/2 | Exposed Rocky Cliffs/Wave Cut Rocky Platforms |
| 1A/3 | Exposed Rocky Cliffs/Fine- to Medium-Grained Sand Beaches |

| 5.1.2.4.1.1. ENUMERATED DOMAIN VALUE: | 5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION: |
|------------------------------------------------------|----------------------------------------------------------------------------|
| 1B | Exposed Seawall |
| 1C | Exposed Rocky Cliffs/Boulder Talus Base |
| 2 | Wave Cut Rocky Platforms |
| 2/3 | Wave Cut Rocky Platforms/Fine- to Medium-Grained Sand Beaches |
| 2/5 | Wave Cut Rocky Platforms/Mixed Sand and Gravel Beaches |
| 3 | Fine- to Medium-Grained Sand Beaches |
| 3/2 | Fine- to Medium-Grained Sand Beaches/Wave Cut Rocky Platforms |
| 3/6A | Fine- to Medium-Grained Sand Beaches/Gravel Beaches |
| 3/7 | Fine- to Medium-Grained Sand Beaches/Exposed Tidal Flats |
| 3/8A | Fine- to Medium-Grained Sand Beaches/Sheltered Rocky Shores |
| 3/9 | Fine- to Medium-Grained Sand Beaches/Sheltered Tidal Flats |
| 4 | Coarse-Grained Sand to Granule Beaches |
| 4/2 | Coarse-Grained Sand to Granule Beaches/Wave Cut Rocky Platforms |
| 4/9 | Coarse-Grained Sand to Granule Beaches/Sheltered Tidal Flats |
| 5 | Mixed Sand and Gravel Beaches |
| 5/10 | Mixed Sand and Gravel Beaches/Salt Marsh |
| 5/2 | Mixed Sand and Gravel Beaches/Wave Cut Rocky Platforms |
| 5/3 | Mixed Sand and Gravel Beaches/Fine- to Medium-Grained Sand Beaches |
| 5/7 | Mixed Sand and Gravel Beaches/Exposed Tidal Flats |
| 5/8A | Mixed Sand and Gravel Beaches/Sheltered Rocky Shores |
| 5/8A/9 | Mixed Sand and Gravel Beaches/Sheltered Rocky Shores/Sheltered Tidal Flats |
| 5/9 | Mixed Sand and Gravel Beaches/Sheltered Tidal Flats |
| 6A | Gravel Beaches |
| 6A/2 | Gravel Beaches/Wave Cut Rocky Platforms |
| 6A/3 | Gravel Beaches/Fine- to Medium-Grained Sand Beaches |
| 6A/7 | Gravel Beaches/Exposed Tidal Flats |
| 6A/9 | Gravel Beaches/Sheltered Tidal Flats |
| 6B | Riprap |
| 6B/10 | Riprap/Salt Marsh |
| 6B/2 | Riprap/Wave Cut Rocky Platforms |
| 6B/3 | Riprap/Fine- to Medium-Grained Sand Beaches |

| 5.1.2.4.1.1. ENUMERATED DOMAIN VALUE: | 5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION: |
|----------------------------------------------|-----------------------------------------------------------------|
| 6B/3/7 | Riprap/Fine- to Medium-Grained Sand Beaches/Exposed Tidal Flats |
| 6B/9 | Riprap/Sheltered Tidal Flats |
| 7 | Exposed Tidal Flats |
| 7/3 | Exposed Tidal Flats/Fine- to Medium-Grained Sand Beaches |
| 8A | Sheltered Rocky Shores |
| 8A/3 | Sheltered Rocky Shores/Fine- to Medium-Grained Sand Beaches |
| 8A/5 | Sheltered Rocky Shores/Mixed Sand and Gravel Beaches |
| 8A/6A | Sheltered Rocky Shores/Gravel Beaches |
| 8A/7 | Sheltered Rocky Shores/Exposed Tidal Flats |
| 8A/9 | Sheltered Rocky Shores/Sheltered Tidal Flats |
| 8B | Sheltered Man-Made Structures |
| 8B/7 | Sheltered Man-Made Structures/Exposed Tidal Flats |
| 8B/9 | Sheltered Man-Made Structures/Sheltered Tidal Flats |
| 9 | Sheltered Tidal Flats |
| 9/10 | Sheltered Tidal Flats/Salt Marshes |
| 10 | Salt Marsh |
| 10/7 | Salt Marsh/Exposed Tidal Flats |
| 10/9 | Salt Marsh/Sheltered Tidal Flats |

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

ordinal

5.1.2.1. ATTRIBUTE LABEL:

LINE

5.1.2.2. ATTRIBUTE DEFINITION:

Type of geographic feature

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

| 5.1.2.4.1.1. ENUMERATED DOMAIN VALUE: | 5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION: |
|----------------------------------------------|---------------------------------------------------------|
| F | Flat (line bounding a tidal flat) |
| M | Marsh (line bounding a 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:**

2

Digital

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE

DEFINITION SOURCE:

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

ENVIR

5.1.2.2. ATTRIBUTE DEFINITION:

Regional environment

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

E

Estuary

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE

DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

WATER_CODE

5.1.2.2. ATTRIBUTE DEFINITION:

Specifies a polygon as either water or land

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1.

**ENUMERATED
DOMAIN VALUE:**

W
L

5.1.2.4.1.2.

**ENUMERATED DOMAIN
VALUE DEFINITION:**

Water
Land

5.1.2.4.1.3.

**ENUMERATED DOMAIN VALUE
DEFINITION SOURCE:**

Research Planning, Inc.

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5.1. DETAILED DESCRIPTION: EXPERTS

The data table EXPERTS contains the primary contacts for resources included 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> | EXPERT_ID | integer |
|-------------------|---------------|-----------|
| | NAME | character |
| | AGENCY | character |
| | ADDRESS1 | character |
| | ADDRESS2 | character |
| | CITY | character |
| | STATE | character |
| | PHONE | character |
| | BIO_EXPERTISE | character |
| | GEO_EXPERTISE | character |

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

EXPERT_ID

5.1.2.2. ATTRIBUTE DEFINITION:

Expert identifier that links to G_SOURCE and S_SOURCE in the BIORES and BIOFILE tables and to G_SOURCE and A_SOURCE in the SOC_DAT table.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:

| | |
|-----|---------------|
| 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:

Primary expert and/or contact for resource

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Allen, Sarah
Breen, Bob
Collier, Patrick
Colwell, Mark
Cox, Bill
Curry, Mike
Edell, Tom
Fletcher, Grant
Forester, Kevin
Foster, Dr. Michael
Fukashima, Linda
Gallagher, Ken
Grantham, Greg
Haas, Jim
Hanson, Linda
Harvey, Dr. James
Hillyard, Deborah
Houck, Jake
Imper, Dave
Jones, Wendy
Kalvass, Pete
Karpov, Kon
Karpov, Konstantin
Kelly, John
Klobas, John
Knight, Jan
Lintz, Jim
McCleod, Dave
Miller, Sheri
Moore, Tom
Nelson, Jennifer
Oda, Ken
Point Reyes Bird Observatory,
Preston, Larry
Quirollo, Larry

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Rausch, Linda
 Roust, Aron
 Springer, Paul
 Tasto, Bob
 Thomas, Dave
 Ueber, Ed
 Wallace, Michael
 Warner, Ron
 Woodhouse, Dr. Charles
 Worcester, Karen

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

AGENCY

5.1.2.2. ATTRIBUTE DEFINITION:

Affiliation of the listed expert

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Audubon Canyon Ranch
 Bureau of Land Management
 California Department of Fish and Game
 California Polytechnic State Univ. San Luis Obispo
 California State Parks
 College of the Redwoods
 Fitzgerald Marine Reserve
 Humboldt State University
 Morro Coas Audubon Society
 Moss Landing Marine Labs
 Native Plant Society
 NOAA Gulf of the Farallones National Marine Sanctuary
 North Coast Marine Mammal Care Center
 Point Reyes Bird Observatory
 Private
 Regional Water Quality Control Board
 Santa Barbara Museum of Natural History
 Sonoma Field Studies
 U. S. Department of Agriculture Redwood Science Lab
 U. S. Fish and Wildlife Service
 U. S. Fish and Wildlife Service Humboldt Bay NWR
 University of California - Berkeley

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:

ADDRESS1

5.1.2.2. ATTRIBUTE DEFINITION:

Primary address of the expert

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

1125 16th Street
1211 Del Mar Drive
1610 Panorama Drive
1700 Bayview Street
1720 Ocean Drive
19160 South Harbor Dr.
20 Lower Ragsdale Dr.
2559 Puesta Del Sol Road
2800 Cottage Way
3141 Highway 128
411 Burgess Dr.
424 Howe Drive
46 8th Street
4612 Lentell
4990 Shoreline Highway
5341 Ericson Way
619 2nd Street
7 Bridge Ct.
81 Higuera Street
Biological Sciences Department
College of the Redwoods
Cypress Grove Preserve
Field Office and Lab
Fort Mason
Mad River Hatchery
Mendocino District Head
P. O. Box 2498
P. O. Box 450
P. O. Box 47
San Mateo City Park District
Wildlife Department

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

ADDRESS2

5.1.2.2. ATTRIBUTE DEFINITION:

Continuation of first address of expert

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

1211 Del Mar Dr.
19160 S. Harbor Drive
Building 201
Hatchery Road
Highway 1
P. O. Box 808
P. O. Box 451
Room E-1803
Suite 100
Suite 200

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

CITY

5.1.2.2. ATTRIBUTE DEFINITION:

City of expert's address

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Arcata
Blue Lake
Calistoga
Cayucos
Crescent City
Eureka
Fairfax
Fort Bragg
Ft. Bragg
Loleta

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Marshall
McKinleyville
Mendocino
Menlo Park
Monterey
Moss Beach
Moss Landing
Sacramento
San Francisco
San Luis Obispo
Santa Barbara
Sebastopol
Stinson Beach
Yountville

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

STATE

5.1.2.2. ATTRIBUTE DEFINITION:

State of expert's address

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

CA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

PHONE

5.1.2.2. ATTRIBUTE DEFINITION:

Phone number of expert

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:

BIO_EXPERTISE

5.1.2.2. ATTRIBUTE DEFINITION:

Biological expertise of expert

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

abalone
 aleutian goose
 Anadromous Fish: Salmon and Steelhead
 Birds
 Botany
 Botany: plants
 dungeness crab
 eel grass
 Fisheries: Herring, Environmental Input Analysis
 Fisheries: Steelhead trout, Salmon
 groundfish, rockfish
 harbor seals, California sea lions
 herring shrimp
 Inland fisheries
 Kelp forest ecology: kelp, seagrasses
 m mammals
 m mammals b. brant
 m mammals birds
 m mammals groundfish rock fish urchins herring
 Mammals
 marbled murrelet
 Marine Mammals
 Marine Mammals, Waterfowl, Seabirds, Shorebirds
 Marine Mammals: harbor seals
 Marine: Abalone, Sea Urchins
 Marine: Sea Urchins
 native plants
 Naturalist
 pinnipeds
 Pinnipeds: Harbor Seals Elephant Seals
 plants birds
 salmon steelhead
 salmon steelhead tidewater goby
 Sanctuary Manager
 Sea Urchins, Clams, Eel Grass, Abalone, Herring
 smelt, ground fish, rockfish
 Smelt, Herring
 Waterfowl, Shorebirds, Raptors

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

GEO_EXPERTISE

5.1.2.2. ATTRIBUTE DEFINITION:

Geographic extent of expert's expertise

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Bodega; Point Reyes Farallon Islands; Tomales Bay
California
Central & Northern California
Central California
Central Coast, San Francisco Bay
Central and Northern California
Del Norte County
Del Norte and Humboldt counties
Farallones and Cordell Bank National Marine
Sanctuaries
Humboldt Bay
Humboldt County
Kings Range
Klamath River
Mendocino County
Northern California
Oregon border south to San Mateo county
Pt. Arena to Punta Gorda
Russian River
S. F., San Mateo, Santa Cruz, Monterey, San Luis
Obispo Cnty
San Francisco, San Mateo, Santa Cruz, Monterey
Counties
San Luis Obispo
San Luis Obispo County
San Mateo County coast
San Mateo and San Francisco Counties
Santa Barbara
Sonoma County
Sonoma and Marin Counties
Tomales Bay

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1. DETAILED DESCRIPTION: FISH

The data layer FISH contains the polygons with fish species.

The following FISH species are found in the Northern California ESI atlas:

| SPECIES ID | NAME |
|------------|---------------------------|
| 43 | White sturgeon |
| 44 | Green sturgeon |
| 45 | Cutthroat trout |
| 54 | Redtail surfperch |
| 66 | Pacific herring |
| 68 | Chinook salmon (king) |
| 69 | Coho salmon (silver) |
| 74 | Rainbow trout (steelhead) |
| 75 | Surf smelt |
| 77 | Eulachon |
| 83 | Salmon sp. |
| 104 | Striped bass |
| 219 | Pacific lamprey |
| 223 | Rockfish |
| 224 | Surfperch |
| 225 | California halibut |
| 226 | Tidewater goby |
| 228 | Night smelt |

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:

GT-Polygons

5.1.1.2. ENTITY TYPE DEFINITION:

| | |
|--------|---------|
| ID | integer |
| RARNUM | integer |

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ID

5.1.2.2. ATTRIBUTE DEFINITION:

A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas number (7), element number (2), and record number. ID values of 9999 are holes in polygons and do not contain information.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE

DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

RARNUM

5.1.2.2. ATTRIBUTE DEFINITION:

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

1-N

Unique number

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE

DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1. DETAILED DESCRIPTION: HABITATS (formerly PLANTS)

The data layer HABITATS contains the polygons with plant species.

The following HABITATS species are found in the Northern California ESI atlas:

| SPECIES ID | NAME |
|------------|------------------------|
| 1 | Eelgrass |
| 2 | Bull kelp |
| 3 | Menzies wallflower |
| 4 | Beach layia |
| 5 | Salt marsh bird's-beak |
| 6 | Western lily |
| 8 | Clover lupine |
| 9 | Giant kelp |
| 69 | Marin bent grass |
| 71 | Howells spineflower |

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:

GT-Polygons

5.1.1.2. ENTITY TYPE DEFINITION:

| | |
|--------|---------|
| ID | integer |
| RARNUM | integer |

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ID

5.1.2.2. ATTRIBUTE DEFINITION:

A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas number (7), element number (3), and record number. ID values of 9999 are holes in polygons and do not contain information.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

RARNUM

5.1.2.2. ATTRIBUTE DEFINITION:

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

1-N

Unique number

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

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1. DETAILED DESCRIPTION: HYDRO

The data layer HYDRO contains polygonal water and land features, as well as linear features for rivers/streams that are tidally influenced. This layer was created using the digital shoreline provided by the California State Land Office.

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 socioeconomic features, and hydro or water features.

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

WATER_CODE

5.1.2.2. ATTRIBUTE DEFINITION:

Specifies a polygon as either water or land

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:

| | |
|---|-------|
| W | Water |
| L | Land |

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:**

| | |
|---|-----------------------------|
| H | Hydro |
| I | Index for map/quad boundary |
| S | Shoreline |

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

Research Planning, Inc.

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:**

| | |
|---|---------|
| 2 | Digital |
|---|---------|

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

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1. DETAILED DESCRIPTION: INDEX

The data layer INDEX contains the map boundaries for each quad/map in the atlas.

5.1.1. ENTITY TYPES:

| 5.1.1.1. ENTITY TYPE LABEL: | 5.1.1.2. ENTITY TYPE DEFINITION: |
|------------------------------------|--------------------------------------------------------------------------------------------------------------|
| <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 41.

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:

-
- ARCATA NORTH, CALIF. (1972); TYEE CITY, CALIF. (1972)
 - ARCATA SOUTH, CALIF. (1972)
 - ARCHED ROCK, CALIF. (1977); FORT ROSS, CALIF. (1978)
 - BEAR HARBOR, CALIF. (1969)
 - BODEGA HEAD, CALIF. (1972)

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

CANNIBAL ISLAND, CALIF. (1972)
CAPETOWN, CALIF. (1969); CAPE MENDOCINO, CALIF. (1969)
CHILDS HILL, CALIF. (1975); SISTER ROCKS, CALIF. (1966)
COOSKIE CREEK, CALIF. (1969)
CRANNELL, CALIF. (1975); TRINIDAD, CALIF. (1978)
CRESCENT CITY CALIF. (1978)
DRAKES BAY, CALIF. (1976)
DUNCANS MILL, CALIF. (1979)
ELK, CALIF. (1960); ALBION, CALIF. (1960)
EUREKA, CALIF. (1972)
FERN CANYON, CALIF. (1966)
FERNDALE, CALIF. (1972)
FIELDS LANDING, CALIF. (1972)
FORT BRAGG, CALIF. (1978)
HALES GROVE, CALIF. (1970); MISTAKE POINT, CALIF. (1969)
INGLENOOK, CALIF. (1976)
INVERNESS, CALIF. (1976); POINT REYES NE, CALIF. (1976)
MALLO PASS CREEK, CALIF. (1977)
MENDOCINO, CALIF. (1978)
ORICK, CALIF. (1975)
PETROLIA, CALIF. (1969)
PLANTATION, CALIF. (1977)
POINT ARENA, CALIF. (1978)
REQUA, CALIF. (1966)
SAUNDERS REEF, CALIF. (1977)
SHELTER COVE, CALIF. (1969)
SHUBRICK PEAK, CALIF. (1969)
SMITH RIVER, CALIF.-OREGON (1966)
STEWARTS POINT, CALIF. (1978)
STEWARTS POINT, CALIF. (1978); GUALALA, CALIF. (1977)
TOMALES, CALIF. (1976)
TRINIDAD, CALIF. (1978); RODGERS PEAK, CALIF. (1966)
VALLEY FORD, CALIF. (1971)
WESTPORT, CALIF. (1977)

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

SCALE

5.1.2.2. ATTRIBUTE DEFINITION:

SCALE contains the value of the denominator of the scale at which the INDEX polygon 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:

46,500

50,000

**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:

-0.10

0.00

0.10

0.15

0.30

0.35

0.43

0.45

0.47

0.50

0.57

0.65

0.70

0.75

0.80

0.83

0.85

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE

DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

PAGESIZE

5.1.2.2. ATTRIBUTE DEFINITION:

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

11,17

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE

DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1. DETAILED DESCRIPTION: INVERT (formerly SHELLFISH)

The data layer INVERT contains the polygons with invertebrate species.

The following INVERT species are found in the Northern California ESI atlas:

| SPECIES ID | NAME |
|------------|--------------------------------|
| 14 | Dungeness crab |
| 21 | Washington butter clam |
| 24 | Gaper clam |
| 25 | Soft-shell clam |
| 28 | Pacific razor clam |
| 29 | Common Pacific littleneck clam |
| 38 | Native Pacific oyster |
| 60 | Abalone |
| 69 | Bay ghost shrimp |
| 70 | Purple shore crab |
| 86 | Red sea urchin |

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:

GT-Polygons

5.1.1.2. ENTITY TYPE DEFINITION:

ID integer

RARNUM integer

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ID

5.1.2.2. ATTRIBUTE DEFINITION:

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

RARNUM

5.1.2.2. ATTRIBUTE DEFINITION:

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

1-N

Unique number

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

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1. DETAILED DESCRIPTION: M_MAMMAL

The data layer M_MAMMAL contains the polygons with marine mammal species.

The following M_MAMMAL species are found in the Northern California ESI atlas:

| SPECIES ID | NAME |
|------------|-----------------------------|
| 1 | Northern (Steller) sea lion |
| 2 | Harbor seal |
| 6 | Harbor porpoise |
| 12 | Minke whale |
| 22 | California sea lion |
| 24 | Northern elephant seal |
| 26 | Gray whale |
| 47 | Dall's porpoise |
| 48 | Sperm whale |

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:

GT-Polygons

5.1.1.2. ENTITY TYPE DEFINITION:

| | |
|--------|---------|
| ID | integer |
| RARNUM | integer |

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ID

5.1.2.2. ATTRIBUTE DEFINITION:

A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas number (7), element number (4), and record number. ID values of 9999 are holes in polygons and do not contain information.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

RARNUM

5.1.2.2. ATTRIBUTE DEFINITION:

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

1-N

Unique number

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

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1. DETAILED DESCRIPTION: NESTS

The data layer NESTS contains entity points representing nesting sites.

The following species are found in the NESTS data layer of the Northern California ESI atlas:

| SPECIES ID | NAME |
|------------|--------------------------|
| 8 | Double-crested cormorant |
| 9 | Brandt's cormorant |
| 10 | Pelagic cormorant |
| 37 | Western gull |
| 46 | Common murre |
| 47 | Pigeon guillemot |
| 49 | Cassin's auklet |
| 50 | Rhinoceros auklet |
| 51 | Tufted puffin |
| 68 | Black oystercatcher |
| 96 | Leach's storm-petrel |
| 102 | Fork-tailed storm-petrel |
| 144 | Ashy storm-petrel |

5.1.1. ENTITY TYPES:

5.1.1.1. ENTITY TYPE LABEL:

Entity Points

5.1.1.2. ENTITY TYPE DEFINITION:

| | |
|--------|---------|
| ID | integer |
| RARNUM | integer |

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ID

5.1.2.2. ATTRIBUTE DEFINITION:

A unique identifier that links to the BIO_LUT table. ID is a concatenation of (7), element number (5), and record number.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

RARNUM

5.1.2.2. ATTRIBUTE DEFINITION:

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

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:**

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1. DETAILED DESCRIPTION: SEASONAL

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

5.1.1. ENTITY TYPES:**5.1.1.1. ENTITY TYPE LABEL:**Attributes**5.1.1.2. ENTITY TYPE DEFINITION:**

| | |
|------------|-----------|
| ELEMENT | character |
| SPECIES_ID | integer |
| SEASON_ID | integer |
| JAN | character |
| FEB | character |
| MAR | character |
| APR | character |
| MAY | character |
| JUN | character |
| JUL | character |
| AUG | character |
| SEP | character |
| OCT | character |
| NOV | character |
| DEC | character |
| EL_SPE_SEA | character |

5.1.2. ATTRIBUTES:**5.1.2.1. ATTRIBUTE LABEL:**

ELEMENT

5.1.2.2. ATTRIBUTE DEFINITION:

Major categories of biological data

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:**5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:**

| | |
|----------|--------------------------|
| BIRD | Birds |
| FISH | Fish |
| HABITAT | Habitats and Rare Plants |
| INVERT | Invertebrates |
| M_MAMMAL | Marine Mammals |
| T_MAMMAL | Terrestrial Mammals |

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

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

**5.1.2.1. ATTRIBUTE LABEL:
SPECIES_ID**

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

**5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.**

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

1-N

Unique number

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

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

**5.1.2.1. ATTRIBUTE LABEL:
SEASON_ID**

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

**5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.**

| 5.1.2.4.1.1. ENUMERATED DOMAIN VALUE: | 5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION: |
|------------------------------------------|-----------------------------------------------------|
|------------------------------------------|-----------------------------------------------------|

1-N

Unique number

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

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
JAN

5.1.2.2. ATTRIBUTE DEFINITION:
Present in January

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

| 5.1.2.4.1.1. ENUMERATED DOMAIN VALUE: | 5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION: |
|------------------------------------------|-----------------------------------------------------|
|------------------------------------------|-----------------------------------------------------|

X

Present
(blank) Not present

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

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
FEB

5.1.2.2. ATTRIBUTE DEFINITION:
Present in February

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

| 5.1.2.4.1.1. ENUMERATED DOMAIN VALUE: | 5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION: |
|-------------------------------------------------------------------------|-------------------------------------------------------------|
| X | Present (blank) Not present |
| 5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE: | |
| Research Planning, Inc. | |
| 5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT: nominal | |
| 5.1.2.1. ATTRIBUTE LABEL: MAR | |
| 5.1.2.2. ATTRIBUTE DEFINITION: Present in March | |
| 5.1.2.3. ATTRIBUTE DEFINITION SOURCE: Research Planning, Inc. | |
| 5.1.2.4.1.1. ENUMERATED DOMAIN VALUE: | 5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION: |
| X | Present (blank) Not present |
| 5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE: | |
| Research Planning, Inc. | |
| 5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT: nominal | |
| 5.1.2.1. ATTRIBUTE LABEL: APR | |
| 5.1.2.2. ATTRIBUTE DEFINITION: Present in April | |
| 5.1.2.3. ATTRIBUTE DEFINITION SOURCE: Research Planning, Inc. | |

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

- 5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:**
- Research Planning, Inc.
- 5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:**
nominal
- 5.1.2.1. ATTRIBUTE LABEL:**
MAY
- 5.1.2.2. ATTRIBUTE DEFINITION:**
Present in May
- 5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**
Research Planning, Inc.

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

- 5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:**
- Research Planning, Inc.
- 5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:**
nominal
- 5.1.2.1. ATTRIBUTE LABEL:**
JUN
- 5.1.2.2. ATTRIBUTE DEFINITION:**
Present in June
- 5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**
Research Planning, Inc.

| 5.1.2.4.1.1. ENUMERATED DOMAIN VALUE: | 5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION: |
|-------------------------------------------------------------------------|---------------------------------------------------------|
| X | Present (blank) Not present |
| 5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE: | |
| Research Planning, Inc. | |
| 5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT: nominal | |
| 5.1.2.1. ATTRIBUTE LABEL: JUL | |
| 5.1.2.2. ATTRIBUTE DEFINITION: Present in July | |
| 5.1.2.3. ATTRIBUTE DEFINITION SOURCE: Research Planning, Inc. | |
| 5.1.2.4.1.1. ENUMERATED DOMAIN VALUE: | 5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION: |
| X | Present (blank) Not present |
| 5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE: | |
| Research Planning, Inc. | |
| 5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT: nominal | |
| 5.1.2.1. ATTRIBUTE LABEL: AUG | |
| 5.1.2.2. ATTRIBUTE DEFINITION: Present in August | |
| 5.1.2.3. ATTRIBUTE DEFINITION SOURCE: Research Planning, Inc. | |

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

- 5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:**
- Research Planning, Inc.
- 5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:**
nominal
- 5.1.2.1. ATTRIBUTE LABEL:**
SEP
- 5.1.2.2. ATTRIBUTE DEFINITION:**
Present in September
- 5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**
Research Planning, Inc.

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

- 5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:**
- Research Planning, Inc.
- 5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:**
nominal
- 5.1.2.1. ATTRIBUTE LABEL:**
OCT
- 5.1.2.2. ATTRIBUTE DEFINITION:**
Present in October
- 5.1.2.3. ATTRIBUTE DEFINITION SOURCE:**
Research Planning, Inc.

| 5.1.2.4.1.1. ENUMERATED DOMAIN VALUE: | 5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION: |
|-------------------------------------------------------------------------|-------------------------------------------------------------|
| X | Present (blank) Not present |
| 5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE: | |
| Research Planning, Inc. | |
| 5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT: nominal | |
| 5.1.2.1. ATTRIBUTE LABEL: NOV | |
| 5.1.2.2. ATTRIBUTE DEFINITION: Present in November | |
| 5.1.2.3. ATTRIBUTE DEFINITION SOURCE: Research Planning, Inc. | |
| 5.1.2.4.1.1. ENUMERATED DOMAIN VALUE: | 5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION: |
| X | Present (blank) Not present |
| 5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE: | |
| Research Planning, Inc. | |
| 5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT: nominal | |
| 5.1.2.1. ATTRIBUTE LABEL: DEC | |
| 5.1.2.2. ATTRIBUTE DEFINITION: Present in December | |
| 5.1.2.3. ATTRIBUTE DEFINITION SOURCE: Research Planning, Inc. | |

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

X

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

Present
(blank) Not present

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

EL_SPE_SEA

5.1.2.2. ATTRIBUTE DEFINITION:

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

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5.1. DETAILED DESCRIPTION: SOC_DAT

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

5.1.1. ENTITY TYPES:

| 5.1.1.1. ENTITY TYPE LABEL: | 5.1.1.2. ENTITY TYPE DEFINITION: |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| <u>Attributes</u> | HUNUM integer TYPE character NAME character CONTACT character PHONE character G_SOURCE integer A_SOURCE integer COMMENTS character |

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

HUNUM

5.1.2.2. ATTRIBUTE DEFINITION:

A unique identifier that links to the SOC_LUT lookup table or directly back to the SOCECON coverage

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

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

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

TYPE

5.1.2.2. ATTRIBUTE DEFINITION:

Identifies the feature type

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

| | |
|----------------------|----------------------|
| ACCESS | Access |
| AIRPORT | Airport |
| AQUACULTURE | Aquaculture |
| ARCHAEOLOGICAL SITE | Archaeological Site |
| BEACH | Beach |
| BOAT RAMP | Boat Ramp |
| CAMPGROUND | Campground |
| COAST GUARD | Coast Guard |
| COMMERCIAL FISHING | Commercial Fishing |
| FACTORY | Factory |
| HISTORICAL SITE | Historical Site |
| HOIST | Hoist |
| LOG STORAGE | Log Storage |
| MARINA | Marina |
| MARINE SANCTUARY | Marine Sanctuary |
| MINING | Mining |
| NATIONAL PARK | National Park |
| OIL FACILITIES | Oil Facilities |
| PLATFORMS | Platforms |
| RECREATIONAL FISHING | Recreational Fishing |
| STATE PARK | State Park |
| SUBSISTENCE FISHING | Subsistence Fishing |
| VILLAGE | Village |
| 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:

ABALONE INTERNATIONAL
ACCESS
AIRPORT
AIRSTRIP
ALBION RIVER HARBOUR
ARCATA COUNTY AIRPORT
B.L.M. BEACH PROPERTIES
BEACH
BEACH FRONT PARK
BIG LAGOON COUNTY PARK
BIG LAGOON INDIAN RESERVATION
BIRD ROCK - ASBS
BOAT RAMP
BODEGA FISH FARMS - WATER INTAKE
BODEGA MARINE LAB
BODEGA MARINE LAB WATER INTAKE
BODEGA MARINE LIFE REFUGE
BOWERS FIELD
BROOKS FIELD
CENTERVILLE BEACH COUNTY PARK
CHADBOURNE GULCH STATE PARK
CLAM BEACH COUNTY PARK
CLIFFORD KAMPH MEMORIAL PARK
COAST OYSTER
COLLINS LANDING ACCESS
COMMERCIAL FISHERIES SUPPORT FACILITIES
COMMERCIAL FISHING
COUNTY AIRPORT
CRAB COUNTY PARK
DABY ISLAND
DEL MAR LANDING ECOLOGICAL RESERVE
DEL NORTE COAST REDWOODS STATE PARK
DEL NORTE STREET PIER
DORAN REGIONAL PARK
ECTERO DE LIMANTOUR RESERVE
EUREKA AIRPORT
EUREKA CITY AIRPORT
FISH ROCK BEACH / ANCHOR BAY
FORT BRAGG AIRPORT
FORT ROSS STATE HISTORIC PARK
GARCIA RIVER
GERSTLE COVE ASBS
GOLD BLUFFS STATE RECREATIONAL AREA

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

GREENWOOD CREEK PROJECT
GULF OF FARALLONES NTL. MARINE SANCTUARY
HUMBOLDT BAY NATIONAL WILDLIFE REFUGE
HUMBOLDT LAGOONS STATE PARK
HUMBOLDT MARINE SERVICES WHARF
HUMBOLDT STATE UNIVERSITY WATER INTAKE
INDIAN ISLAND
INNER BOAT BASIN
INVERNESS LANDING
JUGHANDLE STATE RESERVE
KELP BEDS AT SAUNDERS REEF ASBS
KING RANGE NAT. CONSERVATION AREA
KING SALMON MARINA
KLAMATH RIVER ESTUARY
KUIPER MARICULTURE WATER INTAKE
LAUNCHING RAMP
LAWSONS LANDING
LIFE SAVING STATION
LITTLE RIVER STATE BEACH
LOUISIANA PACIFIC LUMBER MILL
M-430-02 AQUACULTURE LEASE
M-430-05
M-430-06 AQUACULTURE LEASE
M-430-07 AQUACULTURE LEASE
M-430-08 AQUACULTURE LEASE
M-430-09 AQUACULTURE LEASE
M-430-11 AQUACULTURE LEASE
M-430-12
M-430-12 AQUACULTURE LEASE
M-430-13 AQUACULTURE LEASE
M-430-14 AQUACULTURE LEASE
M-430-15 AQUACULTURE LEASE
M-430-16 AQUACULTURE LEASE
M-430-17 AQUACULTURE LEASE
M-430-18 AQUACULTURE LEASE
M-438-01 PARCEL 1-JOHNSON OYSTER CO.
M-438-01 PARCEL 2-JOHNSON OYSTER CO.
MACKERRICHER STATE PARK
MAD RIVER BEACH COUNTY PARK
MAD RIVER SLOUGH MARICULTURE SITES
MANCHESTER STATE BEACH
MARCONI COVE MARINA
MARINA
MASONS MARINA
MCNAMARA FIELD
MENDOCINO COAST BOTANICAL GARDEN

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

MENDOCINO HEADLANDS STATE PARK
 MILLER COUNTY PARK
 MOAT CREEK
 NAVARRO RIVER STATE PARK
 NORTH HUMBOLDT BAY MARICULTURE SITES
 NOYO HARBOR
 OCEAN COVE RESERVE
 OUTER BOAT BASIN
 PARK
 PATRICKS POINT STATE PARK
 PELICAN BEACH STATE PARK
 PG & E POWER WATER INTAKE
 POINT ARENA HARBOUR
 POINT ARENA LIGHTHOUSE
 POINT CABRILLO LIGHTHOUSE
 POINT DELGADA LANDING STRIP
 POINT REYES HEADLAND RESERVE
 POINT REYES NATIONAL SEASHORE
 PORTO BODEGA HARBOR
 PRAIRIE CREEK REDWOODS STATE PARK
 PT. CABRILLO LIGHTHOUSE
 PUBLIC FISHING
 RECREATIONAL BEACH
 RECREATIONAL FISHING
 REDWOOD NATIONAL PARK
 RUSSIAN GULCH STATE PARK
 SALT POINT STATE PARK
 SAMOA BOAT RAMP
 SAND DOLLAR PICNIC AREA & BEACH
 SCHOONER GULCH STATE BEACH
 SEA RANCH AIRPORT
 SHELTER COVE HARBOUR
 SHIP ASHORE AND SALMON HARBOR RESORTS
 SHIP ASHORE LANDING STRIP
 SIMPSON PULP MILL
 SINKYONE WILDERNESS STATE PARK
 SMALL CRAFT HARBOUR
 SMITH RIVER RANCHERIA
 SONOMA COAST STATE BEACH
 SONOMA COAST STATE BEACH - BODEGA HEAD
 SONOMA COAST STATE BEACH - GOAT ROCK
 SONOMA COAST STATE BEACH - RUSSIAN GULCH
 SPUD POINT MARINA
 TABLE BLUFF COUNTY PARK
 TOMALES BAY ECOLOGICAL RESERVE
 TOMALES BAY STATE PARK

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

TOMALES BAY STATE PARK - MILLERTON POINT
TRIBAL BOUNDARY
TRINIDAD HARBOUR
TRINIDAD HEAD USCG LIGHTHOUSE RES.
TRINIDAD INDIAN RESERVATION
TRINIDAD STATE BEACH
UNDERSEA WORLD WATER INTAKE
USGC STATION
VAN DAMME STATE PARK
WAGES CREEK BEACH
WESTPORT UNION LANDING STATE BEACH
WESTSIDE REGIONAL PARK
WILDLIFE REFUGE
WOODLY ISLAND MARINA

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE

DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

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:

A link to EXPERT_ID in the supplementary data table EXPERTS. Formerly called EXPERT_ID. Item name has been changed to G_SOURCE to maintain consistency with the latest ESI data structure.

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:

A duplicate link to EXPERT_ID in the supplementary data table EXPERTS. The A_SOURCE field has been added to maintain consistency with the latest ESI data structure.

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:

COMMENTS

5.1.2.2. ATTRIBUTE DEFINITION:

Lists any special comments about the 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:**

1-N

Unique link

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1. DETAILED DESCRIPTION: SOC_LUT

Lookup table to link SOC_DAT to SOCECON data layer.

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 SOCECON to the SOC_DAT data table

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

ID

5.1.2.2. ATTRIBUTE DEFINITION:

A unique identifier that links SOC_LUT to the SOCECON data layer

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

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5.1. DETAILED DESCRIPTION: SOCECON

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

5.1.1. ENTITY TYPES:

| 5.1.1.1. ENTITY TYPE LABEL: | 5.1.1.2. ENTITY TYPE DEFINITION: |
|-----------------------------|----------------------------------|
| <u>Complete Chains</u> | TYPE character |
| <u>Entity Points</u> | TYPE character |
| | ID integer |
| | HUNUM integer |

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

TYPE

5.1.2.2. ATTRIBUTE DEFINITION:

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

| 5.1.2.4.1.1. ENUMERATED DOMAIN VALUE: | 5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION: |
|---------------------------------------|--------------------------------------------------|
| A | Airport |
| A2 | Access |
| AQ | Aquaculture |
| AS | Archaeological Site |
| B | Beach |
| B / RB | State Beach |
| BR | Boat Ramp |
| CF | Commercial Fishing |
| CG | Coast Guard |
| CP | Campground |
| F2 | Factory |
| H | Hoist |
| HS | Historical Site |
| IB | International Border |
| IR | Indian Reservation |
| LS | Log Storage |
| M | Marina |
| M2 | Mining |
| MS | Marine Sanctuary |

| 5.1.2.4.1.1. | ENUMERATED DOMAIN VALUE: | 5.1.2.4.1.2. | ENUMERATED DOMAIN VALUE DEFINITION: |
|--------------|-----------------------------|--------------|----------------------------------------|
| | NP | | National Park |
| | OF | | Oil Facilities |
| | P | | Park |
| | PF | | Platforms |
| | PL | | Pipeline |
| | RF | | Recreational Fishing |
| | S | | Subsistence Fishing |
| | SB | | State Border |
| | SP | | State Park |
| | SP | | Regional or State Park |
| | V | | Village |
| | WI | | Water Intake |
| | 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 (7), element number (10), and record number.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
NOAA

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

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
HUNUM

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

1-N

Unique number

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

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

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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 |
| | ELEMENT character |
| | SUBELEMENT character |
| | NHP character |
| | DATE_PUB integer |
| | EL_SPE character |

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

SPECIES_ID

5.1.2.2. ATTRIBUTE DEFINITION:

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

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

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

NAME

5.1.2.2. ATTRIBUTE DEFINITION:

Species common name

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Abalone
Aleutian goose
American avocet
American bittern
Ashy storm-petrel
Bald eagle
Bay ghost shrimp
Beach layia
Black brant
Black oystercatcher
Black rail
Black scoter (common)
Black-crowned night heron
Brandts cormorant
Brown pelican
Bull kelp
California black rail
California halibut
California sea lion
Canada goose
Canvasback
Cassins auklet
Chinook salmon (king)
Clover lupine
Coho salmon (silver)
Common loon
Common murre
Common Pacific littleneck clam
Cutthroat trout
Dalls porpoise
Diving birds
Double-crested cormorant
Dungeness crab
Eared grebe
Eelgrass
Eulachon
Fork-tailed storm-petrel
Gaper clam

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Giant kelp
Gray whale
Great blue heron
Great egret
Greater scaup
Green sturgeon
Gulls
Harbor porpoise
Harbor seal
Harlequin duck
Horned grebe
Howells spineflower
Leachs storm-petrel
Marbled godwit
Marbled murrelet
Marin bent grass
Menzies wallflower
Minke whale
Native Pacific oyster
Night smelt
Northern (Steller) sea lion
Northern elephant seal
Northern phalarope
Northern shoveler
Osprey
Pacific herring
Pacific lamprey
Pacific razor clam
Pelagic cormorant
Peregrine falcon
Pied-billed grebe
Pigeon guillemot
Purple shore crab
Rainbow trout (steelhead)
Raptors
Red phalarope
Red sea urchin
Red-breasted merganser
Red-necked grebe
Redtail surfperch

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Rhinoceros auklet
River otter
Rockfish
Salmon sp.
Salt marsh birds-beak
Sanderling
Shorebirds
Short-billed dowitcher
Snowy plover
Soft-shell clam
Sooty shearwater
Sora rail
Striped bass
Surf scoter
Surf smelt
Surfperch
Terns
Tidewater goby
Tufted puffin
Virginia rail
Wading birds
Washington butter clam
Waterfowl
Western grebe
Western gull
Western lily
Whistling swan (tundra swan)
White pelican
White sturgeon
White-winged scoter
Willet

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

GEN_SPEC

5.1.2.2. ATTRIBUTE DEFINITION:

Species scientific name

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Acipenser medirostris
Acipenser transmontanus
Aechmophorus occidentalis
Agrostis blasdalei marinensis
Amphistichus rhodoterus
Anas clypeata
Ardea herodias
Aythya marila
Aythya valisineria
Baleonoptera acutorostrata
Botaurus lentiginosus
Brachyramphus marmoratus
Branta bernicla
Branta canadensis
Branta canadensis leucopareia
Calidris alba
Callianassa californiensis
Cancer magister
Casmerodius albus
Catoptrophorus semipalmatus
Cephus columba
Cerorhinca monocerata
Charadrius alexandrinus
Chorizantho howellii
Clupea harengus pallasii
Cordylantus maritimus maritimus
Embiotocidae
Entosphenus tridentatus
Erysimum menziesii
Eschrichtius robustus
Eucyclogobius newberryi
Eumetopias jubatus
Falco peregrinus

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Gavia immer
Haematopus bachmani
Haliaeetus leucocephalus
Haliotis sp.
Hemigrapsus nudus
Histrionicus histrionicus
Hypomesus pretiosus
Larus occidentalis
Laterallus jamaicensis
Laterallus jamaicensis coturniculus
Layia carnosus
Lilium occidentale
Limnodromus griseus
Limosa fedoa
Lunda cirrhata
Lupinus tidestromii tidestromii
Lutra canadensis
Macrocystis pyrifera
Melanitta deglandi
Melanitta nigra
Melanitta perspicillata
Mergus serrator
Mirounga angustirostris
Morone saxatilis
Mya arenaria
Nereocystis luetkeana
Nycticorax nycticorax
Oceanodroma furcata
Oceanodroma homochroa
Oceanodroma leucorhoa
Olor columbianus
Oncorhynchus kisutch
Oncorhynchus mykiss
Oncorhynchus tshawytscha
Ostrea lurida
Pandion haliaetus
Paralichthys californicus
Pelecanus erythrorhynchos
Pelecanus occidentalis
Phalacrocorax auritus

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

Phalacrocorax pelagicus
 Phalacrocorax penicillatus
 Phalaropus fulicarius
 Phalaropus lobatus
 Phoca vitulina
 Phocoena phocoena
 Phocoenoides dalli dalli
 Podiceps auritus
 Podiceps grisegena
 Podiceps nigricollis
 Podilymbus podiceps
 Porzana carolina
 Protothaca staminea
 Ptychoramphus aleuticus
 Puffinus griseus
 Rallus limicola
 Recurvirostra americana
 Salmo clarki
 Saxidomus giganteus
 Sebastes spp.
 Siliqua patula
 Spirinchus starksi
 Strongylocentrotus franciscanus
 Thaleichthys pacificus
 Tресus nuttallii
 Uria aalge
 Zalophus californianus
 Zostera marina

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE

DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

ELEMENT

5.1.2.2. ATTRIBUTE DEFINITION:

Biological element

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

| | |
|----------|--------------------------|
| BIRD | Birds |
| FISH | Fish |
| HABITAT | Habitats and Rare Plants |
| INVERT | Invertebrates |
| M_MAMMAL | Marine Mammals |
| T_MAMMAL | Terrestrial Mammals |

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

SUBELEMENT

5.1.2.2. ATTRIBUTE DEFINITION:

Species subgroup

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

abalone
 alcid
 anadromous
 beach_sp
 crab
 diving
 dolphin
 echinoderm
 gull_tern
 kelp_sp
 mustelid
 oyster
 pelagic
 raptor
 sav
 sea_lion

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

seal
 shorebird
 shrimp
 shrub
 special
 wading
 waterfowl
 whale

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

NHP

5.1.2.2. ATTRIBUTE DEFINITION:

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

**5.1.2.4.1.1. ENUMERATED
 DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
 VALUE DEFINITION:**

Not supplied with this atlas

5.1.2.1. ATTRIBUTE LABEL:

DATE_PUB

5.1.2.2. ATTRIBUTE DEFINITION:

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

**5.1.2.4.1.1. ENUMERATED
 DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
 VALUE DEFINITION:**

Not supplied with this atlas

5.1.2.1. ATTRIBUTE LABEL:

EL_SPE

5.1.2.2. ATTRIBUTE DEFINITION:

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

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 | Birds |
| FISH | Fish |
| HABITAT | Habitats and Rare Plants |
| INVERT | Invertebrates |
| M_MAMMAL | Marine Mammals |
| T_MAMMAL | Terrestrial Mammals |

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:
SPECIES_ID

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:

1-N

Unique number

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

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:
nominal

5.1.2.1. ATTRIBUTE LABEL:
STATE

5.1.2.2. ATTRIBUTE DEFINITION:
Two-letter state abbreviation

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:
Research Planning, Inc.

5.1.2.4.1.1. ENUMERATED DOMAIN VALUE:

5.1.2.4.1.2. ENUMERATED DOMAIN VALUE DEFINITION:

CA

California

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, CDFG

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

T_E

5.1.2.2. ATTRIBUTE DEFINITION:

Threatened and endangered status

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

**5.1.2.4.1.2. ENUMERATED DOMAIN
VALUE DEFINITION:**

| | |
|-----|---------------------------------------|
| E | Endangered |
| E/E | Endangered on Federal and State lists |
| T | Threatened |
| T/T | Threatened on Federal and State lists |

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

USFWS, CDFG

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

DATE_PUB

5.1.2.2. ATTRIBUTE DEFINITION:

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

5.1.2.1. ATTRIBUTE LABEL:

EL_SPE

5.1.2.2. ATTRIBUTE DEFINITION:

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

Research Planning, Inc.

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

Research Planning, Inc.

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1. DETAILED DESCRIPTION: T_MAMMAL

The data layer T_MAMMAL contains the polygons with terrestrial mammal species.

The following T_MAMMAL species are found in the Northern California ESI atlas:

| SPECIES ID | NAME |
|------------|-------------|
| 8 | River otter |

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 |
| | RARNUM integer |

5.1.2. ATTRIBUTES:

5.1.2.1. ATTRIBUTE LABEL:

ID

5.1.2.2. ATTRIBUTE DEFINITION:

A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas number (7), element number (4), and record number. ID values of 9999 are holes in polygons and do not contain information.

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

5.1.2.4.1.3. ENUMERATED DOMAIN VALUE DEFINITION SOURCE:

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

5.1.2.1. ATTRIBUTE LABEL:

RARNUM

5.1.2.2. ATTRIBUTE DEFINITION:

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

5.1.2.3. ATTRIBUTE DEFINITION SOURCE:

NOAA

**5.1.2.4.1.1. ENUMERATED
DOMAIN VALUE:**

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:**

NOAA

5.1.2.5. ATTRIBUTE UNITS OF MEASUREMENT:

nominal

6.0. DISTRIBUTION INFORMATION

6.1. DISTRIBUTOR

6.1.1. CONTACT PERSON PRIMARY

6.1.1.1. CONTACT PERSON:

John Kaperick

6.1.1.2. CONTACT ORGANIZATION:

NOAA, Office of Response and Restoration

6.1.4. CONTACT ADDRESS

6.1.4.1. ADDRESS TYPE:

Physical Address

6.1.4.2. ADDRESS:

7600 Sand Point Way N.E.

6.1.4.3. CITY:

Seattle

6.1.4.4. STATE OR PROVINCE:

WA

6.1.4.5. POSTAL CODE:

98115-6349

6.1.5. CONTACT VOICE TELEPHONE:

(206) 526-6944

6.1.7. CONTACT FACSIMILE TELEPHONE:

(206) 526-6329

6.2. RESOURCE DESCRIPTION:

ESI Atlas for Northern California

6.3. DISTRIBUTION LIABILITY:

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

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:

19941206

7.2. METADATA REVIEW DATE:

19941115

7.4. METADATA CONTACT

7.4.1. CONTACT PERSON PRIMARY

7.4.1.1. CONTACT PERSON:

Jill Petersen

7.4.1.2. CONTACT ORGANIZATION:

NOAA, Office of Response and Restoration

7.4.3. CONTACT POSITION:

GIS Manager

7.4.4. CONTACT ADDRESS

7.4.4.1. ADDRESS TYPE:

Physical Address

7.4.4.2. ADDRESS:

7600 Sand Point Way N.E.

7.4.4.3. CITY:

Seattle

7.4.4.4. STATE OR PROVINCE:

Washington

7.4.4.5. POSTAL CODE:

98115-6349

7.4.5. CONTACT VOICE TELEPHONE:

(206) 526-6944

7.4.7. CONTACT FACSIMILE TELEPHONE:

(206) 526-6329

7.4.8. CONTACT ELECTRONIC MAIL ADDRESS:

jill_petersen@hazmat.noaa.gov.us

7.5. METADATA STANDARD NAME:

Content Standards for Digital Geospatial Metadata

7.6. METADATA STANDARD VERSION:

19940608

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