Prince William Sound, Alaska ESI: HYDRO (Hydrology)

Metadata:

Identification_Information:

Citation:

Citation_Information:

Originator:
National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.
Publication_Date: 200011
Title: Prince William Sound, Alaska ESI: HYDRO (Hydrology)
Edition: Second
Geospatial_Data_Presentation_Form: Atlas
Series_Information:

Series_Name: None
Issue_Identification: Prince William Sound, Alaska
Publication_Information:

Publication_Place: Seattle, Washington
Publisher:
National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington
Other_Citation_Details:
Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.

Description:

Abstract:

This data set comprises the Environmental Sensitivity Index (ESI) data for Prince William Sound, Alaska. ESI data characterize estuarine environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources. This data set contains hydrology data.

Purpose:

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

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1952
Ending_Date: 1994

Currentness_Reference: Project time span

Status:

Progress: Complete
Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -148.875
East_Bounding_Coordinate: -144.000
North_Bounding_Coordinate: 61.292
South_Bounding_Coordinate: 54.393

Keywords:

Theme:

Theme_Keyword_Thesaurus: None
Theme_Keyword: Sensitivity maps
Theme_Keyword: ESI
Theme_Keyword: Coastal resources
Theme_Keyword: Oil spill planning
Theme_Keyword: Coastal zone management
Theme_Keyword: Hydrology

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: Prince William Sound
Place_Keyword: Alaska
Place_Keyword: Copper River Delta
Place_Keyword: Blying Sound

Access_Constraints: None

Use_Constraints:

DO NOT USE 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 Data_Set_Credit (below) would be appreciated in products derived from these data.

Browse_Graphic:

Browse_Graphic_File_Name: pwsdatafig.jpg
Browse_Graphic_File_Description:
Relationships between the biology data layers and the attribute files for the Prince William Sound data.
Browse_Graphic_File_Type: JPEG

Data_Set_Credit:
This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.

Native_Data_Set_Environment:
The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20). The following files are included in the data set: bio_lut.e00, biofile.e00, biores.e00, birds.e00, breed.e00, breed_dt.e00, esi.e00, fish.e00, fishl.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, m_mampt.e00, nests.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, socecon.e00, sources.e00, species.e00, status.e00.

Data_Quality_Information:

Attribute_Accuracy:

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.

Logical_Consistency_Report:
The digitization of shoreline types, biological resources, and human-use resources is a complex and highly quality-controlled process. Existing digital shoreline data are integrated into a study-wide basemap. In order to facilitate digitizing, the entire study area is split into individual quadrangles using the INDEX data layer. The first layer of information digitized is the ESI shoreline classification. The ESI habitat ranking is compiled onto 1:63,360 USGS topographic quadrangles by a geomorphologist. The hardcopy maps are then digitized and checked using both on-screen and hardcopy reviews. The edited maps are updated, checked once again for completeness and topological and logical consistency. Any errors in the shoreline classification are updated prior to digitization of the biological and human-use layers. All layers use the shoreline as the geographic reference so that there are no slivers in the geographic coordinates. The hardcopy biological information is compiled onto 1:87,000 USGS topographic quadrangles by a biological expert using data from regional specialists in the form of maps, tables, charts, written descriptions of wildlife distributions, and personal interviews. Concurrently, digital data sources are imported, projected, checked for quality control, and integrated into the data structure. The hardcopy data are digitized, checked using both digital and on-screen procedures, integrated with existing data, plotted, and sent out for review by the regional specialists. The edited maps are updated, checked once again, and the final product plotted (at approximately 1:50,000 scale). A team of specialists reviews the entire series of maps, checks all data, and makes final edits. The data are then merged to form the study-wide layers. The data merging includes a final quality control check where labels, chains, and polygons are checked for attribute accuracy. To finalize the data checking process, each coverage is checked using a standardized form by two GIS personnel (a technician and the GIS manager), and each attribute database is checked using several programs that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and

ORACLE(r) to ARC/INFO(r) consistencies. A final review is made by the GIS manager, where the data are written to tape and the metadata are written. ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI_Viewer product are also included on the CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats. The section Spatial_Data_Organization_Information refers to the source files in ARC export format only.

Completeness_Report:

The intertidal habitats of Prince William Sound were originally mapped in 1982. The intertidal habitats of Prince William Sound and the Copper River Delta were remapped using two sources. For Port Valdez, Knowles Head, Hinchinbrook Island, and Montague Island, ESI classifications were derived from a database provided by SERVS, Alyeska Pipeline Service Company and generated by Owens and Reimer (1999), based on videotape surveys conducted from 1995 through 1998. For the rest of the study area, ESI classifications were made during overflights conducted by an experienced coastal geologist during 14-19 May 1999. The shoreline classifications were denoted onto 1:63,360 U.S. Geological Survey (USGS) topographic maps. The shoreline classifications were then transferred onto maps on which the shorelines derived from both National Wetlands Inventory (NWI) data and USGS Digital Line Graph (DLG) were plotted. The DLG shoreline was used in most cases; the NWI shoreline and polygons for tidal flats and marshes were used when they best represented the current shoreline conditions, especially in the Copper River Delta and other areas of extensive flats and marshes.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

The ESI data use USGS 1:63,360 topographic quadrangles as the basemap. It is estimated that the ESI shoreline classification has a minimum mapping unit of 100 feet.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: BP Exploration
Publication_Date: Unpublished material
Title: Digital shoreline
Geospatial_Data_Presentation_Form: Vector digital data

Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1998
Ending_Date: 1999

Source_Currentness_Reference: Digitized dates
Source_Citation_Abbreviation: None
Source_Contribution: Shorelines

Source_Information:

Source_Citation:

Citation_Information:

Originator: Jacqui Michel; Research Planning, Inc.
Publication_Date: Unpublished material
Title: ESI Overflight
Geospatial_Data_Presentation_Form: Map
Source_Scale_Denominator: 63360
Type_of_Source_Media: Paper
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1999
Source_Currentness_Reference: Date of overflight
Source_Citation_Abbreviation: None
Source_Contribution: ESI Shorelines
Source_Information:

Source_Citation:

Citation_Information:

Originator: National Wetlands Inventory
Publication_Date: Unpublished material
Title: National Wetlands Inventory Digital Data
Geospatial_Data_Presentation_Form: Vector digital data
Type_of_Source_Media: Online
Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 197808
Ending_Date: 198408
Source_Currentness_Reference: Date of aerial photographs
Source_Citation_Abbreviation: None
Source_Contribution: ESI shoreline
Source_Information:

Source_Citation:

Citation_Information:

Originator: Ed Owens
Publication_Date: Unpublished material
Title: Digital shoreline
Geospatial_Data_Presentation_Form: Vector digital data
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1997
Source_Currentness_Reference: Date of survey
Source_Citation_Abbreviation: None
Source_Contribution: Digital shoreline
Source_Information:

Source_Citation:

Citation_Information:

Originator: Research Planning, Inc.
Publication_Date: Unpublished material
Title: Index
Geospatial_Data_Presentation_Form: Vector digital data
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1999
Source_Currentness_Reference: Date index was created
Source_Citation_Abbreviation: None
Source_Contribution: Index for the atlas
Process_Step:

Process_Description:
All the digital data were checked using both digital and on-screen procedures, plotted, checked by the coastal expert, edited to remove any errors, and plotted for review by the regional specialists. The reviewed maps were updated on the computer, checked once again, and plotted at final map scale. A team of specialists reviewed the entire series of maps, checked all data, and made final edits. The data were merged to form the study-wide layers that are described in the document. The data merging included a final quality control check where topological consistency, rules for geography, and database to geography were checked and validated for all relationships.
Process_Date: 1999
Process_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: NOAA, Office of Response and Restoration
Contact_Person: Jill Petersen
Contact_Address:

Address_Type: Physical address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: jill_petersen@hazmat.noaa.gov.us

Spatial_Data_Organization_Information:

Direct_Spatial_Reference_Method: Vector
Point_and_Vector_Object_Information:

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: GT-polygon composed of rings
Point_and_Vector_Object_Count: 9620
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Area point
Point_and_Vector_Object_Count: 9620
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Complete chain
Point_and_Vector_Object_Count: 18676
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 468538
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Label point
Point_and_Vector_Object_Count: 336
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 16647

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

Geographic:

Latitude_Resolution: 0.00005
Longitude_Resolution: 0.00005
Geographic_Coordinate_Units: Decimal degrees
Geodetic_Model:

Horizontal_Datum_Name: North American Datum of 1927
Ellipsoid_Name: Clarke 1866
Semi-major_Axis: 6378206.4
Denominator_of_Flattening_Ratio: 294.98

Entity_and_Attribute_Information:

Detailed_Description:

Entity_Type:

Entity_Type_Label: Complete chain
Entity_Type_Definition:
The data layer HYDRO contains polygonal water and land features, as well as linear features for rivers and streams. 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.
Entity_Type_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: Line
Attribute_Definition: Type of geographical feature
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: F
Enumerated_Domain_Value_Definition: Flat
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: G
Enumerated_Domain_Value_Definition: Glacier
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: H
Enumerated_Domain_Value_Definition: Hydrography or stream features
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: I
Enumerated_Domain_Value_Definition: Index
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: M
Enumerated_Domain_Value_Definition: Marsh
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: S
Enumerated_Domain_Value_Definition: Shoreline
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Beginning_Date_of_Attribute_Values: 199905
Ending_Date_of_Attribute_Values: 200002
Attribute:

Attribute_Label: Source_id
Attribute_Definition: Data source for the ESI
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 1
Enumerated_Domain_Value_Definition: British Petroleum's HYD_POLY coverage
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 2
Enumerated_Domain_Value_Definition: Research Planning ESI Codes from overflight
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 5
Enumerated_Domain_Value_Definition: Digitized from scanned 1:63,360 USGS topographic quadrangle
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 6
Enumerated_Domain_Value_Definition: National Wildlife Inventory shoreline
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 7
Enumerated_Domain_Value_Definition: Research Planning - index
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 8

Enumerated_Domain_Value_Definition: Digitized from digital National Wildlife Inventory shorelines
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 10
Enumerated_Domain_Value_Definition: Ed Owens digital, coded shoreline
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Beginning_Date_of_Attribute_Values: 199905
Ending_Date_of_Attribute_Values: 200002
Detailed_Description:

Entity_Type:

Entity_Type_Label: GT-polygon
Entity_Type_Definition:
The data layer HYDRO contains polygonal water and land features, as well as linear features for rivers and streams. 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.
Entity_Type_Definition_Source: Research Planning, Inc.
Attribute:

Attribute_Label: Water_code
Attribute_Definition: Specifies a polygon as either water or land
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: L
Enumerated_Domain_Value_Definition: Land
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: W
Enumerated_Domain_Value_Definition: Water
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Beginning_Date_of_Attribute_Values: 199905
Ending_Date_of_Attribute_Values: 200002

Distribution_Information:

Distributor:

Contact_Information:

Contact_Person_Primary:

Contact_Person: John Kaperick
Contact_Organization: NOAA, Office of Response and Restoration
Contact_Address:

Address_Type: Physical Address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6400
Contact_Facsimile_Telephone: (206) 526-6329
Resource_Description: ESI Atlas for Prince William Sound, Alaska
Distribution_Liability:
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer-input peripherals, or when the physical medium is delivered in damaged condition.
Custom_Order_Process:
Contact NOAA for distribution options (see Distribution_Information).

Metadata_Reference_Information:

Metadata_Date: 200011
Metadata_Review_Date: 200011
Metadata_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Jill Petersen
Contact_Organization: NOAA, Office of Response and Restoration
Contact_Position: GIS Manager
Contact_Address:

Address_Type: Physical Address
Address: 7600 Sand Point Way N.E
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: jill_petersen@hazmat.noaa.gov.us
Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998

Prince William Sound, Alaska ESI: ESI (Environmental Sensitivity Index Shoreline Types)

Metadata:

Identification_Information:

Citation:

Citation_Information:

Originator:
National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.
Publication_Date: 200011
Title: Prince William Sound, Alaska ESI: ESI (Environmental Sensitivity Index Shoreline Types)
Edition: Second
Geospatial_Data_Presentation_Form: Atlas
Series_Information:

Series_Name: None
Issue_Identification: Prince William Sound, Alaska
Publication_Information:

Publication_Place: Seattle, Washington
Publisher:
National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington
Other_Citation_Details:
Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound

Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.

Description:

Abstract:

This data set comprises the Environmental Sensitivity Index (ESI) data for Prince William Sound, Alaska. ESI data characterize estuarine environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources. This data set contains the Environmental Sensitivity Index shoreline data.

Purpose:

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

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1997
Ending_Date: 1999

Currentness_Reference: Project time span

Status:

Progress: Complete
Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -148.875
East_Bounding_Coordinate: -144.000
North_Bounding_Coordinate: 61.292
South_Bounding_Coordinate: 54.393

Keywords:

Theme:

Theme_Keyword_Thesaurus: None
Theme_Keyword: Sensitivity maps
Theme_Keyword: ESI
Theme_Keyword: Coastal resources
Theme_Keyword: Oil spill planning
Theme_Keyword: Coastal zone management
Theme_Keyword: Shoreline

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: Prince William Sound
Place_Keyword: Alaska
Place_Keyword: Copper River Delta
Place_Keyword: Blying Sound

Access_Constraints: None

Use_Constraints:

DO NOT USE 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

Data_Set_Credit (below) would be appreciated in products derived from these data.

Browse_Graphic:

Browse_Graphic_File_Name: pwsdatafig.jpg

Browse_Graphic_File_Description:

Relationships between the biology data layers and the attribute files for the Prince William Sound data.

Browse_Graphic_File_Type: JPEG

Data_Set_Credit:

This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20). The following files are included in the data set: bio_lut.e00, biofile.e00, biores.e00, birds.e00, breed.e00, breed_dt.e00, esi.e00, fish.e00, fishl.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, m_mampt.e00, nests.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, socecon.e00, sources.e00, species.e00, status.e00.

Data_Quality_Information:

Attribute_Accuracy:

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.

Logical_Consistency_Report:

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a standardized form by two GIS personnel (a technician and the GIS manager), and each attribute database is checked using several programs that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and ORACLE(r) to ARC/INFO(r) consistencies. A final review is made by the GIS manager, where the data are written to tape and the metadata are written. ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI_Viewer product are also included on the CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats. The section Spatial_Data_Organization_Information refers to the source files in ARC export format only.

Completeness_Report:

The intertidal habitats of Prince William Sound were originally mapped in 1982. The intertidal habitats of Prince William Sound and the Copper River Delta were remapped using two sources. For Port Valdez, Knowles Head, Hinchinbrook Island, and Montague Island, ESI classifications were derived from a database provided by SERVS, Alyeska Pipeline Service Company and generated by Owens and Reimer (1999), based on videotape surveys conducted from 1995 through 1998. For the rest of the study area, ESI classifications were made during overflights conducted by an experienced coastal geologist during 14-19 May 1999. The shoreline classifications were denoted onto 1:63,360 U.S. Geological Survey (USGS) topographic maps. The shoreline classifications were then transferred onto maps on which the shorelines derived from both National Wetlands Inventory (NWI) data and USGS Digital Line Graph (DLG) were plotted. The DLG shoreline was used in most cases; the NWI shoreline and polygons for tidal flats and marshes were used when they best represented the current shoreline conditions, especially in the Copper River Delta and other areas of extensive flats and marshes.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

The ESI data use USGS 1:63,3600 topographic quadrangles as the basemap. It is estimated that the ESI shoreline classification has a minimum mapping unit of 100 feet.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: BP Exploration
Publication_Date: Unpublished material
Title: Digital Shoreline
Geospatial_Data_Presentation_Form: Vector digital data
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1998
Ending_Date: 1999
Source_Currentness_Reference: Date of completion
Source_Citation_Abbreviation: None

Source_Contribution: ESI Shoreline description
Source_Information:

Source_Citation:

Citation_Information:

Originator: Jacqui Michel
Publication_Date: Unpublished material
Title: ESI Overflight
Geospatial_Data_Presentation_Form: Map
Source_Scale_Denominator: 63360
Type_of_Source_Media: Paper
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1999
Source_Currentness_Reference: Date of Overflight
Source_Citation_Abbreviation: None
Source_Contribution: ESI shoreline
Source_Information:

Source_Citation:

Citation_Information:

Originator: National Wetlands Inventory
Publication_Date: Unpublished material
Title: National Wetlands Inventory Digital Data
Geospatial_Data_Presentation_Form: Vector digital data
Type_of_Source_Media: Online
Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 197808
Ending_Date: 198408
Source_Currentness_Reference: Survey date
Source_Citation_Abbreviation: None
Source_Contribution: ESI shoreline
Source_Information:

Source_Citation:

Citation_Information:

Originator: Ed Owens
Publication_Date: Unpublished material
Title: Digital shoreline
Geospatial_Data_Presentation_Form: Vector digital data
Type_of_Source_Media: Electronic bulletin board
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1997
Source_Currentness_Reference: Date of overflight
Source_Citation_Abbreviation: None
Source_Contribution: Digital shoreline
Process_Step:

Process_Description:
All the digital data were checked using both digital and on-screen procedures, plotted, checked by the biological expert, edited to remove any errors, and plotted for review by the regional specialists. The reviewed maps were updated on the computer, checked once again, and plotted at final map scale. A team of specialists reviewed the entire series of maps, checked all data, and made final edits. The data were merged to form the study-wide layers that are described in the document. The data merging included a final quality control check where topological consistency, rules for geography, and database to geography were checked and validated for all relationships.
Process_Date: 20000824
Process_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: NOAA, Office of Response and Restoration
Contact_Person: Jill Petersen
Contact_Address:

Address_Type: Physical address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: jill_petersen@hazmat.noaa.gov.us

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Spatial_Data_Organization_Information:

Direct_Spatial_Reference_Method: Vector
Point_and_Vector_Object_Information:

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: GT-polygon composed of rings
Point_and_Vector_Object_Count: 1606
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Area point
Point_and_Vector_Object_Count: 1606
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Complete chain
Point_and_Vector_Object_Count: 14382
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 296061
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 14015

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

Geographic:

Latitude_Resolution: 0.00005
Longitude_Resolution: 0.00005
Geographic_Coordinate_Units: Decimal degrees
Geodetic_Model:

Horizontal_Datum_Name: North American Datum of 1927
Ellipsoid_Name: Clarke 1866
Semi-major_Axis: 6378206.4
Denominator_of_Flattening_Ratio: 294.98

Entity_and_Attribute_Information:

Detailed_Description:

Entity_Type:

Entity_Type_Label: Complete Chain
Entity_Type_Definition:
The data layer ESI contains arc (Complete Chain) features for the ESI shoreline classification and is based on Environmental Sensitivity Index Guidelines, Version 2.0 (Halls, J., J. Michel, S. Zengel, J. Dahlin, and J. Petersen, 1997, Hazardous Materials Response and Assessment Division, NOAA). The ESI classification was performed in February 1997.
Entity_Type_Definition_Source: Research Planning, Inc.
Attribute:

Attribute_Label: ESI

Attribute_Definition:

The intertidal habitats of Prince William Sound and the Copper River Delta were mapped during overflights conducted by an experienced coastal geologist during 14-19 May 1999. The shoreline classifications were denoted onto 1:63,360 U.S. Geological Survey (USGS) topographic maps. The shoreline classifications were then transferred onto maps on which the shorelines derived from both National Wetlands Inventory (NWI) data and USGS Digital Line Graph (DLG) were plotted. The DLG shoreline was used in most cases; the NWI shoreline and polygons for tidal flats and marshes were used when they best represented the current shoreline conditions, especially in the Copper River Delta and other areas of extensive flats and marshes. Prediction of the behavior and persistence of oil on intertidal habitats is based on an understanding of the dynamics of the coastal environments, not just the substrate type and grain size. The sensitivity of a particular intertidal habitat is an integration of the following factors: 1) Shoreline type (substrate, grain size, tidal elevation, origin); 2) Exposure to wave and tidal energy; 3) Biological productivity and sensitivity; 4) Ease of cleanup. All of these factors are used to determine the relative sensitivity of intertidal habitats. Key to the sensitivity ranking is an understanding of the relationships between: physical processes; substrate; shoreline type; product type; fate and effect; and sediment transport patterns. The intensity of energy expended upon a shoreline by wave action, tidal currents, and river currents directly affects the persistence of stranded oil. The need for shoreline cleanup activities is determined, in part, by the slowness of natural processes in removal of oil stranded on the shoreline. These concepts have been used in the development of the ESI, which ranks shoreline environments as to their relative sensitivity to oil spills, potential biological injury, and ease of cleanup. Generally speaking, areas exposed to high levels of physical energy, such as wave action and tidal currents, and low biological activity rank low on the scale, whereas sheltered areas with associated high biological activity have the highest ranking. A comprehensive shoreline habitat ranking system has been developed for the entire United States. The shoreline habitats delineated in Prince William Sound and the Copper River Delta are listed below in order of increasing sensitivity to spilled oil: 1A) Exposed Rocky Shores; 1B) Exposed, solid man-made materials; 2A) Exposed Wave-Cut Platforms in Bedrock, Mud, or Clay; 3A) Fine- to Medium-Grained Sand Beaches; 4) Coarse-Grained Sand Beaches; 5) Mixed Sand and Gravel Beaches; 6A) Gravel Beaches; 6B) Riprap; 7) Exposed Tidal Flats; 8A) Sheltered Rocky Shores and Sheltered Scarps in Bedrock, Mud or Clay; 8B) Sheltered, Solid Man-Made Structures; 8C) Sheltered Riprap; 8D) Vegetated, Steeply-Sloping Bluffs; 9A) Sheltered Tidal Flats; 10A) Salt- and Brackish-Water Marshes. In many cases, the shorelines are also ranked with multiple codes, such as 6A/7. The first number is the most landward shoreline type (6A=gravel beach), with exposed tidal flats (7) being the shoreline type closest to the water.

Attribute_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 1A
Enumerated_Domain_Value_Definition: Exposed rocky shores
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 1A/6A
Enumerated_Domain_Value_Definition: Exposed rocky shores/Gravel beaches
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 1B
Enumerated_Domain_Value_Definition: Exposed, solid man-made materials
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 1B/7
Enumerated_Domain_Value_Definition: Exposed, solid man-made materials/Exposed tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 2A
Enumerated_Domain_Value_Definition: Exposed wave-cut platforms in bedrock, mud, or clay
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 2A/6A
Enumerated_Domain_Value_Definition:
Exposed wave-cut platforms in bedrock, mud, or clay/Gravel beaches
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 2A/7
Enumerated_Domain_Value_Definition:
Exposed wave-cut platforms in bedrock, mud, or clay/Exposed tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 2A/9A
Enumerated_Domain_Value_Definition:
Exposed wave-cut platforms in bedrock, mud, or clay/Sheltered tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 3A
Enumerated_Domain_Value_Definition: Fine- to medium-grained sand beaches
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 3A/2A
Enumerated_Domain_Value_Definition:
Fine- to medium-grained sand beaches/Exposed wave-cut platforms in bedrock, mud, or clay
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 3A/7
Enumerated_Domain_Value_Definition: Fine- to medium-grained sand beaches/Exposed tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 4
Enumerated_Domain_Value_Definition: Coarse-grained sand beaches
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 4/7
Enumerated_Domain_Value_Definition: Coarse-grained sand beaches/Exposed tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 5
Enumerated_Domain_Value_Definition: Mixed sand and gravel beaches
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 5/2A
Enumerated_Domain_Value_Definition:
Mixed sand and gravel beaches/Exposed wave-cut platforms in bedrock, mud, or clay
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 5/7
Enumerated_Domain_Value_Definition: Mixed sand and gravel beaches/Exposed tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 5/8A
Enumerated_Domain_Value_Definition:
Mixed sand and gravel beaches/Sheltered, rocky shores and sheltered scarps in bedrock, mud or clay
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 5/9A
Enumerated_Domain_Value_Definition: Mixed sand and gravel beaches/Sheltered tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 6A
Enumerated_Domain_Value_Definition: Gravel beaches
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 6A/1A
Enumerated_Domain_Value_Definition: Gravel beaches/Exposed rocky shores
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 6A/2A
Enumerated_Domain_Value_Definition:
Gravel beaches/Exposed wave-cut platforms in bedrock, mud, or clay
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 6A/2A/7
Enumerated_Domain_Value_Definition:
Gravel beaches/Exposed wave-cut platforms in bedrock, mud, or clay/Exposed tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 6A/7
Enumerated_Domain_Value_Definition: Gravel beaches/Exposed tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 6A/8A

Enumerated_Domain_Value_Definition:
Gravel beaches/Sheltered, rocky shores and sheltered scarps in bedrock, mud or clay
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 6A/8A/7
Enumerated_Domain_Value_Definition:
Gravel beaches/Sheltered, rocky shores and sheltered scarps in bedrock, mud or clay/Exposed tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 6A/8A/9A
Enumerated_Domain_Value_Definition:
Gravel beaches/Sheltered, rocky shores and sheltered scarps in bedrock, mud or clay/Sheltered tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 6A/9A
Enumerated_Domain_Value_Definition: Gravel beaches/Sheltered tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 6A/9A/7
Enumerated_Domain_Value_Definition: Gravel beaches/Sheltered tidal flats/Exposed tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 6A/10A
Enumerated_Domain_Value_Definition: Gravel beaches/Salt- and brackish-water marshes
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 6B
Enumerated_Domain_Value_Definition: Riprap
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 6B/7

Enumerated_Domain_Value_Definition: Riprap/Exposed tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 6B/9A
Enumerated_Domain_Value_Definition: Riprap/Sheltered tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 7
Enumerated_Domain_Value_Definition: Exposed tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 7/6A
Enumerated_Domain_Value_Definition: Exposed tidal flats/Gravel beaches
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 7/9A
Enumerated_Domain_Value_Definition: Exposed tidal flats/Sheltered tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 8A
Enumerated_Domain_Value_Definition:
Sheltered, rocky shores and sheltered scarps in bedrock, mud or clay
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 8A/5
Enumerated_Domain_Value_Definition:
Sheltered, rocky shores and sheltered scarps in bedrock, mud or clay/Mixed sand and gravel beaches
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 8A/6A
Enumerated_Domain_Value_Definition:
Sheltered, rocky shores and sheltered scarps in bedrock, mud or clay/Gravel beaches
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 8A/6A/7
Enumerated_Domain_Value_Definition:
Sheltered, rocky shores and sheltered scarps in bedrock, mud or clay/Gravel beaches/Exposed tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 8A/7
Enumerated_Domain_Value_Definition:
Sheltered, rocky shores and sheltered scarps in bedrock, mud or clay/Exposed tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 8A/9A
Enumerated_Domain_Value_Definition:
Sheltered, rocky shores and sheltered scarps in bedrock, mud or clay/Sheltered tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 8A/10A
Enumerated_Domain_Value_Definition:
Sheltered, rocky shores and sheltered scarps in bedrock, mud or clay/Salt- and brackish- water marshes
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 8B
Enumerated_Domain_Value_Definition: Sheltered, solid man-made structures
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 8C
Enumerated_Domain_Value_Definition: Sheltered riprap
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 8D
Enumerated_Domain_Value_Definition: Vegetated, steeply-sloping bluffs
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 8D/6
Enumerated_Domain_Value_Definition: Vegetated, steeply-sloping bluffs/Gravel beaches
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 8D/7
Enumerated_Domain_Value_Definition: Vegetated, steeply-sloping bluffs/Exposed tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 8D/9A
Enumerated_Domain_Value_Definition: Vegetated, steeply-sloping bluffs/Sheltered tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 9A
Enumerated_Domain_Value_Definition: Sheltered tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 9A/7
Enumerated_Domain_Value_Definition: Sheltered tidal flats/Exposed tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 10A
Enumerated_Domain_Value_Definition: Salt- and brackish- water marshes
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 10A/3A
Enumerated_Domain_Value_Definition:
Salt- and brackish- water marshes/Fine- to medium-grained sand beaches
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 10A/3A/7
Enumerated_Domain_Value_Definition:
Salt- and brackish- water marshes/Fine- to medium-grained sand beaches/Exposed tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 10A/5
Enumerated_Domain_Value_Definition: Salt- and brackish- water marshes/Mixed sand and gravel beaches
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 10A/5/7
Enumerated_Domain_Value_Definition:
Salt- and brackish- water marshes/Mixed sand and gravel beaches/Exposed tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 10A/5/9A
Enumerated_Domain_Value_Definition:
Salt- and brackish- water marshes/Mixed sand and gravel beaches/Sheltered tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 10A/6A
Enumerated_Domain_Value_Definition: Salt- and brackish- water marshes/Gravel beaches
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 10A/6A/7
Enumerated_Domain_Value_Definition:
Salt- and brackish- water marshes/Gravel beaches/Exposed tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 10A/6A/9A
Enumerated_Domain_Value_Definition:
Salt- and brackish- water marshes/Gravel beaches/Sheltered tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 10A/7
Enumerated_Domain_Value_Definition: Salt- and brackish- water marshes/Exposed tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 10A/9A
Enumerated_Domain_Value_Definition: Salt- and brackish- water marshes/Sheltered tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 10A/9A/7
Enumerated_Domain_Value_Definition:
Salt- and brackish- water marshes/Sheltered tidal flats/Exposed tidal flats
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Beginning_Date_of_Attribute_Values: 199905
Ending_Date_of_Attribute_Values: 200002
Attribute:

Attribute_Label: Line
Attribute_Definition: Type of geographical feature
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: F
Enumerated_Domain_Value_Definition: Flat
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: G
Enumerated_Domain_Value_Definition: Glacier
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: H
Enumerated_Domain_Value_Definition: Hydrography or stream features
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: I
Enumerated_Domain_Value_Definition: Index

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: M
Enumerated_Domain_Value_Definition: Marsh
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: S
Enumerated_Domain_Value_Definition: Shoreline
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Beginning_Date_of_Attribute_Values: 199905
Ending_Date_of_Attribute_Values: 200002
Attribute:

Attribute_Label: Source_id
Attribute_Definition: Data source for the ESI
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 1
Enumerated_Domain_Value_Definition: British Petroleum's HYD_POLY coverage
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 2
Enumerated_Domain_Value_Definition: Research Planning ESI Codes from overflight
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 5
Enumerated_Domain_Value_Definition: Digitized from scanned 1:24,000 USGS topographic quadrangle
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 6
Enumerated_Domain_Value_Definition: National Wildlife Inventory shoreline
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 7
Enumerated_Domain_Value_Definition: Research Planning - index
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 8
Enumerated_Domain_Value_Definition: Digitized from digital National Wildlife Inventory shorelines
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 10
Enumerated_Domain_Value_Definition: Ed Owens digital, coded shoreline
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Beginning_Date_of_Attribute_Values: 199905
Ending_Date_of_Attribute_Values: 200002
Attribute:

Attribute_Label: Envir
Attribute_Definition: Regional environment
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: E
Enumerated_Domain_Value_Definition: Estuarine
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Beginning_Date_of_Attribute_Values: 199905
Ending_Date_of_Attribute_Values: 200002
Detailed_Description:

Entity_Type:

Entity_Type_Label: GT-polygon
Entity_Type_Definition:
The data layer ESI contains polygonal water and land features, as well as linear features for rivers and streams. The ESI 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.
Entity_Type_Definition_Source: Research Planning, Inc.
Attribute:

Attribute_Label: Water_code
Attribute_Definition: Specifies a polygon as either water or land
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: L
Enumerated_Domain_Value_Definition: Land

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: W
Enumerated_Domain_Value_Definition: Water
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Beginning_Date_of_Attribute_Values: 199905
Ending_Date_of_Attribute_Values: 200002

Distribution_Information:

Distributor:

Contact_Information:

Contact_Person_Primary:

Contact_Person: John Kaperick
Contact_Organization: NOAA, Office of Response and Restoration
Contact_Address:

Address_Type: Physical Address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6400
Contact_Facsimile_Telephone: (206) 526-6329
Resource_Description: ESI Atlas for Prince William Sound, Alaska
Distribution_Liability:
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer-input peripherals, or when the physical medium is delivered in damaged condition.
Custom_Order_Process:
Contact NOAA for distribution options (see Distribution_Information).

Metadata_Reference_Information:

Metadata_Date: 200011
Metadata_Review_Date: 200011
Metadata_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Jill Petersen
Contact_Organization: NOAA, Office of Response and Restoration
Contact_Position: GIS Manager
Contact_Address:

Address_Type: Physical Address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: jill_petersen@hazmat.noaa.gov.us
Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998

Prince William Sound, Alaska ESI: INDEX

Metadata:

Identification_Information:

Citation:

Citation_Information:

Originator:
National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.
Publication_Date: 200011
Title: Prince William Sound, Alaska ESI: INDEX
Edition: Second
Geospatial_Data_Presentation_Form: Atlas
Series_Information:

Series_Name: None
Issue_Identification: Prince William Sound, Alaska
Publication_Information:

Publication_Place: Seattle, Washington
Publisher:
National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington
Other_Citation_Details:
Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.

Description:

Abstract:

This data set comprises the Environmental Sensitivity Index (ESI) data for Prince William Sound, Alaska. ESI data characterize estuarine environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources. This data set contains the study area Index.

Purpose:

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

Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1999

Currentness_Reference: Project time span

Status:

Progress: Complete

Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -148.875
East_Bounding_Coordinate: -144.000
North_Bounding_Coordinate: 61.292
South_Bounding_Coordinate: 54.393

Keywords:

Theme:

Theme_Keyword_Thesaurus: None
Theme_Keyword: Sensitivity maps
Theme_Keyword: ESI
Theme_Keyword: Coastal resources
Theme_Keyword: Oil spill planning
Theme_Keyword: Coastal zone management

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: Prince William Sound
Place_Keyword: Alaska
Place_Keyword: Copper River Delta
Place_Keyword: Blying Sound

Access_Constraints: None

Use_Constraints:

DO NOT USE 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 Data_Set_Credit (below) would be appreciated in products derived from these data.

Browse_Graphic:

Browse_Graphic_File_Name: pwsdatafig.jpg

Browse_Graphic_File_Description:

Relationships between the biology data layers and the attribute files for the Prince William Sound data.

Browse_Graphic_File_Type: JPEG

Data_Set_Credit:

This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20). The following files are included in the data set: bio_lut.e00, biofile.e00, biores.e00, birds.e00, breed.e00, breed_dt.e00, esi.e00, fish.e00, fishl.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, m_mampt.e00, nests.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, socecon.e00, sources.e00, species.e00, status.e00.

Data_Quality_Information:

Attribute_Accuracy:

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.

Logical_Consistency_Report:

The INDEX map coverage was generated at Research Planning, Inc. (RPI) based on the corner coordinates of the desired map areas. Under this project, new digital data sources were imported, projected, checked for quality control, and integrated into the spatial data structure (for selected resources). The data were checked using both digital and on-screen procedures. To finalize the data checking process, each coverage is checked using a standardized form by two GIS personnel (a technician and the GIS manager), and each attribute database is checked using several programs that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and ORACLE(r) to ARC/INFO(r) consistencies. A final review is made by the GIS manager, where the data are written to tape and the metadata are written. ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI_Viewer product are also included on the CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats. The section Spatial_Data_Organization_Information refers to the source files in ARC export format only.

Completeness_Report:

The INDEX map coverage was generated based on USGS 1:63,360 scale topographic maps. In some areas, the index was shifted or enlarged slightly so that it would encompass a small sliver of shoreline on an adjacent topographic map to optimize the number of maps generated. Names and dates of publication of the original topographic maps are included in the attribute information for each INDEX polygon.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: RPI
Publication_Date: 2000
Title: RPI Index Coverage
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Columbia, SC
Publisher: Research Planning, Inc.
Source_Scale_Denominator: 63360
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1998
Source_Currentness_Reference: Content time period
Source_Citation_Abbreviation: None
Source_Contribution: Map index
Process_Step:

Process_Description:
All the digital data were checked using both digital and on-screen procedures, plotted, checked by the biological expert, edited to remove any errors, and plotted for review by the regional specialists. The reviewed maps were updated on the computer, checked once again, and plotted at final map scale. A team of specialists reviewed the entire series of maps, checked all data, and made final edits. The data were merged to form the study-wide layers that are described in the document. The data merging included a final quality control check where topological consistency, rules for geography, and database to geography were checked and validated for all relationships.
Process_Date: 1999
Process_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: NOAA, Office of Response and Restoration
Contact_Person: Jill Petersen
Contact_Address:

Address_Type: Physical address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: jill_petersen@hazmat.noaa.gov.us

Spatial_Data_Organization_Information:

Direct_Spatial_Reference_Method: Vector
Point_and_Vector_Object_Information:

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: GT-polygon composed of rings
Point_and_Vector_Object_Count: 48
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Area point
Point_and_Vector_Object_Count: 48
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Complete chain
Point_and_Vector_Object_Count: 138
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 152
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 92

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

Geographic:

Latitude_Resolution: 0.00005
Longitude_Resolution: 0.00005
Geographic_Coordinate_Units: Decimal degrees
Geodetic_Model:

Horizontal_Datum_Name: North American Datum of 1927
Ellipsoid_Name: Clarke 1866
Semi-major_Axis: 6378206.4
Denominator_of_Flattening_Ratio: 294.98

Entity_and_Attribute_Information:

Detailed_Description:

Entity_Type:

Entity_Type_Label: GT-polygon
Entity_Type_Definition:
The data layer INDEX contains the map or polygon boundaries for each map in the atlas.
Entity_Type_Definition_Source: Research Planning, Inc.
Attribute:

Attribute_Label: Tile-name
Attribute_Definition:
The TILE-NAME contains the map number according to the specified layout of the atlas. During the map production process, the value of TILE-NAME is plotted on the map product to order the maps in a coherent manner. The values for each polygon are unique and range from 1 through 48
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 1
Range_Domain_Maximum: 48
Beginning_Date_of_Attribute_Values: 1999
Ending_Date_of_Attribute_Values: 1999
Attribute:

Attribute_Label: Topo-name
Attribute_Definition:
USGS 1:63,360 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.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: ANCHORAGE (B-3), AK (1969); ANCHORAGE (B-2), AK (1966)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: ANCHORAGE (A-2), AK (1960)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: ANCHORAGE (A-3), AK (1960)

Enumerated_Domain_Value: SEWARD (D-2), AK (1987)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: CORDOVA (D-8), AK (1973)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: CORDOVA (D-7), AK (1994)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: CORDOVA (D-6), AK (1994)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: SEWARD (C-5), AK (1970)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: SEWARD (C-4), AK (1987)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: SEWARD (C-3), AK (1987)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: SEWARD (C-2), AK (1987)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: SEWARD (C-1), AK (1987)

Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: CORDOVA (C-8), AK (1987)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
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Enumerated_Domain_Value: CORDOVA (C-7), AK (1987)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: CORDOVA (C-6), AK (1987)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

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Enumerated_Domain_Value: CORDOVA (C-5), AK (1979)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

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Enumerated_Domain_Value: SEWARD (B-5), AK (1973)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

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Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

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Enumerated_Domain_Value: SEWARD (B-3), AK (1987)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: SEWARD (B-2), AK (1987)
Enumerated_Domain_Value_Definition: USGS Topographical Map

Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

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Enumerated_Domain_Value: SEWARD (B-1), AK (1987)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

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Enumerated_Domain_Value: CORDOVA (B-8), AK (1987)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: CORDOVA (B-7), AK (1988)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

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Enumerated_Domain_Value: CORDOVA (B-6), AK (1987)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: CORDOVA (B-5), AK (1988)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: CORDOVA (B-2), AK (1988)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: CORDOVA (B-4), AK (1994); CORDOVA (A-4), AK (1988)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: CORDOVA (B-3), AK (1988); CORDOVA (A-3), AK (1988)

Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: SEWARD (A-4), AK (1988)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: SEWARD (A-3), AK (1988)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: SEWARD (A-2), AK (1988)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: SEWARD (A-1), AK (1988)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: CORDOVA (A-7 & A-8), AK (1988)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: CORDOVA (A-2), AK (1988)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: CORDOVA (A-1), AK (1988)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: SEWARD (A-5), AK (1988); BLYING SOUND (D-5), AK (1988)

Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: BLYING SOUND (D-1 & D-2), AK (1988)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: BLYING SOUND (D-4), AK (1988)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: BLYING SOUND (D-3), AK (1988)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: MIDDLETON ISLAND (D-1 & D-2), AK (1988)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: MIDDLETON ISLAND (B-7), AK (1985)
Enumerated_Domain_Value_Definition: USGS Topographical Map
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Beginning_Date_of_Attribute_Values: 1999
Ending_Date_of_Attribute_Values: 1999
Attribute:

Attribute_Label: Scale
Attribute_Definition:
SCALE contains the value of the denominator of the scale at which the map is plotted in the final map product.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 8,500
Enumerated_Domain_Value_Definition: Map scale = 1:8,500
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 8,700
Enumerated_Domain_Value_Definition: Map scale = 1:8,700
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 100,000
Enumerated_Domain_Value_Definition: Map scale = 1:100,000
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 110,000
Enumerated_Domain_Value_Definition: Map scale = 1:110,000
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 95,000
Enumerated_Domain_Value_Definition: Map scale = 1:95,000
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Beginning_Date_of_Attribute_Values: 1960
Ending_Date_of_Attribute_Values: 1994
Attribute:

Attribute_Label: Mapangle
Attribute_Definition:
MAPANGLE contains a value to rotate the final map product so that it is situated straight up and down.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: -90.00
Range_Domain_Maximum: 90.00
Beginning_Date_of_Attribute_Values: 1999
Ending_Date_of_Attribute_Values: 1999
Attribute:

Attribute_Label: Pagesize
Attribute_Definition:
PAGESIZE contains the value of the width and height of the map in the final map product.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 17,11
Enumerated_Domain_Value_Definition: Pagesize = 11" by 17"
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Beginning_Date_of_Attribute_Values: 1999

Ending_Date_of_Attribute_Values: 1999

Distribution_Information:

Distributor:

Contact_Information:

Contact_Person_Primary:

Contact_Person: John Kaperick
Contact_Organization: NOAA, Office of Response and Restoration
Contact_Address:

Address_Type: Physical Address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6400
Contact_Facsimile_Telephone: (206) 526-6329
Resource_Description: ESI Atlas for Prince William Sound, Alaska
Distribution_Liability:
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer-input peripherals, or when the physical medium is delivered in damaged condition.
Custom_Order_Process:
Contact NOAA for distribution options (see Distribution_Information).

Metadata_Reference_Information:

Metadata_Date: 200011
Metadata_Review_Date: 200011
Metadata_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Jill Petersen
Contact_Organization: NOAA, Office of Response and Restoration
Contact_Position: GIS Manager
Contact_Address:

Address_Type: Physical Address

Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: jill_petersen@hazmat.noaa.gov.us
Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998

Prince William Sound, Alaska ESI: BIRDS

Metadata:

Identification_Information:

Citation:

Citation_Information:

Originator:
National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.
Publication_Date: 200011
Title: Prince William Sound, Alaska ESI: BIRDS
Edition: Second
Geospatial_Data_Presentation_Form: Atlas
Series_Information:

Series_Name: None
Issue_Identification: Prince William Sound, Alaska
Publication_Information:

Publication_Place: Seattle, Washington
Publisher:
National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington
Other_Citation_Details:
Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.

Description:

Abstract:

This data set comprises the Environmental Sensitivity Index (ESI) data for Prince William Sound, Alaska. ESI data characterize estuarine environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources. This data set contains sensitive biological resource data for birds.

Purpose:

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

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1989
Ending_Date: 1999

Currentness_Reference: Project time span

Status:

Progress: Complete
Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -148.875
East_Bounding_Coordinate: -144.000
North_Bounding_Coordinate: 61.292
South_Bounding_Coordinate: 54.393

Keywords:

Theme:

Theme_Keyword_Thesaurus: None
Theme_Keyword: ESI
Theme_Keyword: Sensitivity maps
Theme_Keyword: Coastal resources
Theme_Keyword: Oil spill planning
Theme_Keyword: Coastal zone management
Theme_Keyword: Birds
Theme_Keyword: Waterfowl
Theme_Keyword: Shorebirds
Theme_Keyword: Seabirds

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: Prince William Sound
Place_Keyword: Alaska
Place_Keyword: Copper River Delta
Place_Keyword: Blying Sound

Access_Constraints: None

Use_Constraints:

DO NOT USE 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 Data_Set_Credit (below) would be appreciated in products derived from these data.

Browse_Graphic:

Browse_Graphic_File_Name: pwsdatafig.jpg
Browse_Graphic_File_Description:
Relationships between the biology data layers and the attribute files for the Prince William Sound data.
Browse_Graphic_File_Type: JPEG
Data_Set_Credit:
This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.
Native_Data_Set_Environment:
The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20). The following files are included in the data set: bio_lut.e00, biofile.e00, biores.e00, birds.e00, breed.e00, breed_dt.e00, esi.e00, fish.e00, fishl.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, m_mampt.e00, nests.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, socecon.e00, sources.e00, species.e00, status.e00.

Data_Quality_Information:

Attribute_Accuracy:

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.
Logical_Consistency_Report:
The digitization of shoreline types, biological resources, and human-use resources is a complex and highly quality-controlled process. Existing digital shoreline and wetlands data are integrated into a study-wide basemap. The first layer of information digitized is the ESI shoreline classification. The ESI habitat ranking is compiled onto 1:63,360 USGS topographic quadrangles by a geomorphologist. The hardcopy maps are then digitized and checked, using both on-screen and hardcopy reviews. The edited maps are updated, checked once again for completeness and topological and logical consistency. Any errors in the shoreline classification are updated prior to digitization of the biological reference so that there are no slivers in the geographic coordinates. The hardcopy biological information is compiled onto 1:250,000 USGS topographic quadrangles by a biological expert using data from regional specialists in the form of maps, tables, charts, written descriptions of wildlife distributions, and personal interviews. Concurrently, digital data sources are imported, projected, checked for quality control, and integrated into the data structure. The hardcopy data are digitized, checked using both digital and on-screen procedures, integrated with existing data, plotted, and sent out for review by the regional specialists. The edited maps are updated, checked once again, and the final product plotted (at approximately 1:87,00 scale). A team of specialists reviews the entire series of maps, checks all data, and makes final edits. The data are then merged to form the study-wide layers. The data merging includes a final quality control check where labels, chains, and polygons are checked for attribute accuracy. To finalize the data checking process, each coverage is checked using a standardized form by two GIS personnel (a technician and the GIS manager), and each attribute database is checked using several programs that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and ORACLE (r) and ARC/INFO (r) consistencies. A final review is made

by the GIS manager, where the data are written to tape and the metadata are written. After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks. In the process of checking for topological and database consistencies, new IDs and RARNUMs or HUNUMs are also generated. The new IDs are a combination of atlas numer, element number, and record number. In addition, the value used to represent the element is modified to reflect the type of feature being mapped. In the case of an element that is normally represented by a point or polygon, a value of 20 is added to the standard element value for mapping of linear features. In the case where an element usually mapped as a polygon is represented by a point, a value of 30 is added to the regular element value. The RARNUMs are also modified to include the atlas number, so multiple atlases can be combined and RARNUMs remain unique. RARNUMs are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUMs are also modified to include the atlas number. ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI_Viewer product are also included on the CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats. The section Spatial_Data_Organization_Information refers to the source files in ARC export format only.

Completeness_Report:

Biological information presented in this atlas was collected and compiled with the assistance of biologists from the U.S. Fish and Wildlife Service, Alyeska Pipeline Company, Alaska Department of Fish and Game, and various other agencies, organizations, and groups. Information collected and depicted on the maps denotes the key biological resources that are most likely at risk in the event of an oil spill. Four major categories, or ELEMENTs, of biological resources were considered during data compilation: birds; fish; invertebrates; and marine mammals. The ELEMENTs generally correspond to the coverage or geographic data layer names. There are also six attribute, or data tables, BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS, that are used to store the complex biological data. The biological polygons (BIRDS) are linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or they can be linked directly using RARNUM. [The ID is a unique combination of the atlas number (for Prince William Sound this is 59), an element specific number (birds are layer 1, fish are layer 2, etc.), and a unique record number. The RARNUM represents a unique combination of species, seasonalities, concentrations, and source information. For each of these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases.] The items in BIORES include: RARNUM, SPECIES_ID, CONC, SEASON_ID, G_SOURCE, S_SOURCE, ELEMENT, EL_SPE, and EL_SPE_SEA. SPECIES_ID is the numeric identifier of each species and is unique within each ELEMENT. CONC is the concentration of the species and can be descriptive (LOW, MEDIUM, HIGH, etc.) or an actual count of the number of individuals or nests associated with a polygon or point. SEASON_ID contains a numeric identifier for the unique monthly presence and life history characteristics of each species at a given location. There can be one seasonality record per species, or the same species can have different monthly presence or breeding activities at different sites. When this occurs, a new record with a different SEASON_ID is referenced. G_SOURCE contains the SOURCE_ID for geographic information, and S_SOURCE contains the SOURCE_ID for seasonality information. Both items link to the SOURCES data table. EL_SPE is a concatenation of ELEMENT and SPECIES_ID and links to other data tables (primarily the SPECIES table). 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): BIRDS: bird; alcid; diving; gull_turn; shorebird; waterfowl. The STATUS data table contains records for each species that is threatened or endangered on state or federal lists. The items include: ELEMENT, SPECIES_ID, STATE (two-letter state abbreviations), S_F (state or federal status), T_E (threatened or endangered status), DATE_PUB (the date the atlas was published when the given state and federal listings were in effect), and EL_SPE. The SEASONAL data table indicates the presence

of a particular species in a particular location by month (JAN-DEC). The BIORES table is linked to the SEASONAL table using the item EL_SPE_SEA (a concatenation of the first letter of the ELEMENT, SPECIES_ID, and SEASON_ID). The BREED data table contains the life stage or life history data for each unique combination of ELEMENT, SPECIES_ID, and SEASON_ID (or EL_SPE_SEA). It contains up to 12 records corresponding to each month of the year that the species is present in that location. The items BREED1-BREED5 will reflect different life activities, depending on the ELEMENT referenced. For BIRDS, BREED1 = nesting, BREED2 = laying, BREED3 = hatching, and BREED4 = fledging. There is no BREED5 activity for BIRDS, so this column is populated with a dash (-). The SOURCES data table contains metadata for each biological and human-use source listed in the ESI atlas. The items in SOURCES include: SOURCE_ID; ORIGINATOR (author); DATE_PUB (date of publication); TITLE (title of the data set); DATA_FORMAT (digital type, hardcopy maps, etc.); PUBLICATION (additional citation); SCALE (source scale denominator); and TIME_PERIOD (beginning and ending dates of original data collection). The SOURCES data table is linked to all biological data at the feature plus species-level and human-use data at the feature-level. Due to the complexity of the relational database model, the biological data items are also 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, BREED5, RARNUM, G_SOURCE, S_SOURCE, and BREED. All of these items are the same as their counterparts in the individual files described above, except the BREED1-BREED5 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-BREED5 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, or it may be linked directly from the RARNUM in each of the biology cover's attribute files. As mentioned, BREED_DT is an auxiliary support file to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item. A second supporting data file is SOURCES. This is the same as the source file described above, and the link from the flat file is both G_SOURCE and S_SOURCE. It should be noted that although the flat file eases data query, it is not a normalized database structure, and actual updates performed by the states and other responsible agencies should be done using the relational files.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:
The biological data sets are developed primarily using regional experts who estimate concentration areas. Unlike shorelines, which maintain relative spatial stability through time, the biological data by nature vary in distribution across the landscape. Therefore, the 1:250,000 USGS quadrangles are used as a basemap in gathering the data but the data have "fuzzy" boundaries which must be understood when utilizing this information.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: Doug Wilson
Publication_Date: 1998
Title: Graphical Resource Database
Geospatial_Data_Presentation_Form: Map
Publication_Information:

Publication_Place: Anchorage, Alaska
Publisher: EMCON
Source_Scale_Denominator: 63360
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1992
Ending_Date: 1997
Source_Currentness_Reference: Survey date
Source_Citation_Abbreviation: None
Source_Contribution: Waterfowl and shorebirds
Source_Information:

Source_Citation:

Citation_Information:

Originator: Shawn Stephensen
Publication_Date: 1999
Title: Beringian Seabird Colony Catalog
Geospatial_Data_Presentation_Form: Spreadsheet
Publication_Information:

Publication_Place: Anchorage, Alaska
Publisher: United States Fish and Wildlife Service
Type_of_Source_Media: Electronic mail
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1998
Source_Currentness_Reference: Date of publication
Source_Citation_Abbreviation: None
Source_Contribution: Seabird nesting colonies
Source_Information:

Source_Citation:

Citation_Information:

Originator: Steve Kendell
Publication_Date: 1999
Title: Prince William Sound Waterbird Surveys
Geospatial_Data_Presentation_Form: Map
Publication_Information:

Publication_Place: Anchorage, Alaska
Publisher: United States Fish and Wildlife Service
Source_Scale_Denominator: 63360
Type_of_Source_Media: Electronic mail

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1999
Source_Currentness_Reference: Date of publication
Source_Citation_Abbreviation: None
Source_Contribution: Seabird concentration areas
Source_Information:

Source_Citation:

Citation_Information:

Originator: K. Weaverling
Publication_Date: Unpublished
Title: Shorebirds
Geospatial_Data_Presentation_Form: Map
Source_Scale_Denominator: 63360
Type_of_Source_Media: Paper
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1999
Source_Currentness_Reference: Observation date
Source_Citation_Abbreviation: None
Source_Contribution: Shorebird concentration areas
Source_Information:

Source_Citation:

Citation_Information:

Originator: David Irons
Publication_Date: 1999
Title: Coastal Aerial survey of Prince William Sound Seabirds
Geospatial_Data_Presentation_Form: Map
Publication_Information:

Publication_Place: Anchorage, Alaska
Publisher: United States Fish and Wildlife Service
Source_Scale_Denominator: 250000
Type_of_Source_Media: Paper
Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1989
Ending_Date: 1990
Source_Currentness_Reference: Observation date

Source_Citation_Abbreviation: None
Source_Contribution: Seabird concentration areas
Process_Step:

Process_Description:
All the digital data were checked using both digital and on-screen procedures, plotted, checked by the biological expert, edited to remove any errors, and plotted for review by the regional specialists. The reviewed maps were updated on the computer, checked once again, and plotted at final map scale. A team of specialists reviewed the entire series of maps, checked all data, and made final edits. The data were merged to form the study-wide layers that are described in the document. The data merging included a final quality control check where topological consistency, rules for geography, and database to geography were checked and validated for all relationships.
Process_Date: 20000810
Process_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: NOAA, Office of Response and Restoration
Contact_Person: Jill Petersen
Contact_Address:

Address_Type: Physical address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: jill_petersen@hazmat.noaa.gov.us

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Spatial_Data_Organization_Information:

Direct_Spatial_Reference_Method: Vector
Point_and_Vector_Object_Information:

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: GT-polygon composed of rings
Point_and_Vector_Object_Count: 3540
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Area point
Point_and_Vector_Object_Count: 3540
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Complete chain
Point_and_Vector_Object_Count: 7996
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 513929
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 5888

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

Geographic:

Latitude_Resolution: 0.00005
Longitude_Resolution: 0.00005
Geographic_Coordinate_Units: Decimal Degrees
Geodetic_Model:

Horizontal_Datum_Name: North American Datum of 1927
Ellipsoid_Name: Clarke 1866
Semi-major_Axis: 6378206.4
Denominator_of_Flattening_Ratio: 294.98

Entity_and_Attribute_Information:

Detailed_Description:

Entity_Type:

Entity_Type_Label: GT-polygon
Entity_Type_Definition:
Birds are divided into several species subgroups based on taxonomy, morphology, behavior, and oil spill vulnerability and sensitivity. The SPECIES table lists all the birds included on the maps, sorted by subgroup. These species were included either because of their likelihood of impact by an oil spill, or their special protection status as threatened or endangered. The major types of bird areas depicted in this atlas include: resident and migratory waterfowl concentration areas; migratory shorebird concentration areas; seabird concentration areas; and colonial waterbird nesting sites (for seabirds and shorebirds). Although birds are a major resource shown on the Prince William Sound ESI maps, distributions of seabirds are shown only in the areas where surveys have been conducted. Waterfowl concentration areas shown on the map are derived from survey data provided by Alaska Department of Fish and Game. Winter surveys were conducted in March and summer surveys were conducted in July. In addition to the concentrations mapped, waterfowl can be found in most areas that have marshes and tidal flats. The Copper River Delta is the most important concentration area for waterfowl and shorebirds, both migratory and resident birds.
Entity_Type_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: ID
Attribute_Definition:
A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas number (59), element number (1), and record number. ID values of 9999 are holes in polygons and do not contain information. The following BIRDS species are found in the Prince William Sound ESI data set (SPECIES ID, NAME): 1 Common loon, 3 Red-throated loon, 4 Red-necked grebe, 5 Horned grebe, 8 Double-crested cormorant, 10 Pelagic cormorant, 12 Canada goose, 16 Mallard, 17 Northern pintail, 18 Green-winged teal, 22 Greater scaup, 24 Common goldeneye, 25 Barrow's goldeneye, 26 Bufflehead, 27 Oldsquaw, 28 Harlequin duck, 29 White-winged scoter, 30 Surf scoter, 31 Pacific loon, 32 Common merganser, 33 Red-breasted merganser, 36 Glaucous-winged gull, 38 Herring gull, 41 Mew gull, 42 Bonaparte's gull, 46 Common murre, 47 Pigeon guillemot, 48 Marbled murrelet, 50 Rhinoceros auklet, 51 Tufted puffin, 53 Red-necked (Northern) phalarope, 54 Great blue heron, 55 Whimbrel, 57 Wandering tattler, 58 Greater yellowlegs, 68 Black oystercatcher, 72 Surfbird, 73 Ruddy turnstone, 74 Black turnstone, 76 Bald eagle, 79 Cormorant, 80 Arctic tern, 81 Horned puffin, 84 Parakeet auklet, 96 Leach's storm-petrel, 99 Red-faced cormorant, 100 Black-legged kittiwake, 101 Aleutian tern, 102 Fork-tailed storm-petrel, 104 Murre, 105 Thick-billed murre, 106 Ancient murrelet, 108 Kittlitz's murrelet, 129 Northern fulmar, 161 Rock sandpiper, 162 Gadwall, 169 American wigeon, 197 Black (common) scoter, 199 Pomarine jaeger, 299 Scaup, 300 Goldeneye, 301 Mergansers, 302 Scoters, 326 Jaegers, 345 Storm-petrels, 462 Loons, 1000 Birds, 1001 Gulls, 1002 Shorebirds, 1003 Waterfowl, 1008 Terns, 1009 Shearwaters, 1010 Pelagic birds, 1013 Dabbling ducks, 1014 Diving ducks, 1017 Sandpipers, 1020 Eiders, 1021 Ducks, 1023 Puffins, 1024 Alcids, 1025 Murrelets, 1026 Grebes
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 590100002
Range_Domain_Maximum: 590103910
Beginning_Date_of_Attribute_Values: 200011
Ending_Date_of_Attribute_Values: 200011

Attribute:

Attribute_Label: RARNUM
Attribute_Definition:
An identifier that links directly to the BIORES table or the flat format BIOFILE table.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 59000001
Range_Domain_Maximum: 59001402
Beginning_Date_of_Attribute_Values: 199901
Ending_Date_of_Attribute_Values: 200011

Distribution_Information:

Distributor:

Contact_Information:

Contact_Person_Primary:

Contact_Person: John Kaperick
Contact_Organization: NOAA, Office of Response and Restoration
Contact_Address:

Address_Type: Physical Address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6400
Contact_Facsimile_Telephone: (206) 526-6329
Resource_Description: ESI Atlas for Prince William Sound, Alaska
Distribution_Liability:
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer-input peripherals, or when the physical medium is delivered in damaged condition.
Custom_Order_Process:
Contact NOAA for distribution options (see Distribution_Information).

Metadata_Reference_Information:

Metadata_Date: 200011
Metadata_Review_Date: 200011
Metadata_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Jill Petersen
Contact_Organization: NOAA, Office of Response and Restoration
Contact_Position: GIS Manager
Contact_Address:

Address_Type: Physical Address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944

Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: jill_petersen@hazmat.noaa.gov.us
Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998

Prince William Sound, Alaska ESI: NESTS (Bird Nests)

Metadata:

Identification_Information:

Citation:

Citation_Information:

Originator:
National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.
Publication_Date: 200011
Title: Prince William Sound, Alaska ESI: NESTS (Bird Nests)
Edition: Second
Geospatial_Data_Presentation_Form: Atlas
Series_Information:

Series_Name: None
Issue_Identification: Prince William Sound, Alaska
Publication_Information:

Publication_Place: Seattle, Washington
Publisher:
National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington
Other_Citation_Details:
Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.

Description:

Abstract:

This data set comprises the Environmental Sensitivity Index (ESI) data for Prince William Sound, Alaska. ESI data characterize estuarine environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources. This data set contains sensitive biological resource data for bird nests.

Purpose:

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

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1989
Ending_Date: 1999

Currentness_Reference: Project time span

Status:

Progress: Complete
Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -148.875
East_Bounding_Coordinate: -144.000
North_Bounding_Coordinate: 61.292
South_Bounding_Coordinate: 54.393

Keywords:

Theme:

Theme_Keyword_Thesaurus: None
Theme_Keyword: ESI
Theme_Keyword: Sensitivity maps
Theme_Keyword: Coastal resources
Theme_Keyword: Oil spill planning
Theme_Keyword: Coastal zone management
Theme_Keyword: Nest
Theme_Keyword: Birds
Theme_Keyword: Waterfowl
Theme_Keyword: Shorebirds
Theme_Keyword: Seabirds

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: Prince William Sound
Place_Keyword: Alaska
Place_Keyword: Copper River Delta
Place_Keyword: Blying Sound

Access_Constraints: None

Use_Constraints:

DO NOT USE 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 Data_Set_Credit (below) would be appreciated in products derived from these data.

Browse_Graphic:

Browse_Graphic_File_Name: pwsdatafig.jpg

Browse_Graphic_File_Description:

Relationships between the biology data layers and the attribute files for the Prince William Sound data.

Browse_Graphic_File_Type: JPEG

Data_Set_Credit:

This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20). The following files are included in the data set: bio_lut.e00, biofile.e00, biores.e00, birds.e00, breed.e00, breed_dt.e00, esi.e00, fish.e00, fishl.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, m_mampt.e00, nests.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, socecon.e00, sources.e00, species.e00, status.e00.

Data_Quality_Information:

Attribute_Accuracy:

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.

Logical_Consistency_Report:

The digitization of shoreline types, biological resources, and human-use resources is a complex and highly quality-controlled process. Existing digital shoreline and wetlands data are integrated into a study-wide basemap. The first layer of information digitized is the ESI shoreline classification. The ESI habitat ranking is compiled onto 1:63,360 USGS topographic quadrangles by a geomorphologist. The hardcopy maps are then digitized and checked, using both on-screen and hardcopy reviews. The edited maps are updated, checked once again for completeness and topological and logical consistency. Any errors in the shoreline classification are updated prior to digitization of the biological reference so that there are no slivers in the geographic coordinates. The hardcopy biological information is compiled onto 1:250,000 USGS topographic quadrangles by a biological expert using data from regional specialists in the form of maps, tables, charts, written descriptions of wildlife distributions, and personal interviews. Concurrently, digital data sources are imported, projected, checked for quality control, and integrated into the data structure. The hardcopy data are digitized, checked using both digital and on-screen procedures, integrated with existing data, plotted, and sent out for review by the regional specialists. The edited maps are updated, checked once again, and the final product plotted (at approximately 1:87,000 scale). A team of specialists reviews the entire series of maps, checks all data, and makes final edits. The data are then merged to form the study-wide layers. The data merging includes a final quality control check where labels, chains, and polygons are checked for attribute accuracy. To finalize the data checking process, each coverage is checked using a standardized form by two GIS personnel (a technician and the GIS

manager), and each attribute database is checked using several programs that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and ORACLE (r) and ARC/INFO (r) consistencies. A final review is made by the GIS manager, where the data are written to tape and the metadata are written. After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks. In the process of checking for topological and database consistencies, new IDs and RARNUMs or HUNUMs are also generated. The new IDs are a combination of atlas number, element number, and record number. In addition, the value used to represent the element is modified to reflect the type of feature being mapped. In the case of an element that is normally represented by a point or polygon, a value of 20 is added to the standard element value for mapping of linear features. In the case where an element usually mapped as a polygon is represented by a point, a value of 30 is added to the regular element value. The RARNUMs are also modified to include the atlas number, so multiple atlases can be combined and RARNUMs remain unique. RARNUMs are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUMs are also modified to include the atlas number. ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI_Viewer product are also included on the CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats. The section Spatial_Data_Organization_Information refers to the source files in ARC export format only.

Completeness_Report:

Biological information presented in this atlas was collected and compiled with the assistance of biologists from the U.S. Fish and Wildlife Service and various other agencies, organizations, and groups. Information collected and depicted on the maps denotes the key biological resources that are most likely at risk in the event of an oil spill. Four major categories, or ELEMENTs, of biological resources were considered during data compilation: birds; fish; invertebrates; and marine mammals. The ELEMENTs generally correspond to the coverage or geographic data layer names. There are also six attribute, or data tables, BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS, that are used to store the complex biological data. The biological points (NESTS) are 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 Prince William Sound this is 59), an element specific number (birds are layer 1, fish are layer 2, etc.), and a unique record number. The RARNUM represents a unique combination of species, seasonalities, concentrations, and source information. For each of these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases.] The items in BIORES include: RARNUM, SPECIES_ID, CONC, SEASON_ID, G_SOURCE, S_SOURCE, ELEMENT, EL_SPE, and EL_SPE_SEA. SPECIES_ID is the numeric identifier of each species and is unique within each ELEMENT. CONC is the concentration of the species and can be descriptive (LOW, MEDIUM, HIGH, etc.) or an actual count of the number of individuals or nests associated with a polygon or point. SEASON_ID contains a numeric identifier for the unique monthly presence and life history characteristics of each species at a given location. There can be one seasonality record per species, or the same species can have different monthly presence or breeding activities at different sites. When this occurs, a new record with a different SEASON_ID is referenced. G_SOURCE contains the SOURCE_ID for geographic information, and S_SOURCE contains the SOURCE_ID for seasonality information. Both items link to the SOURCES data table. EL_SPE is a concatenation of ELEMENT and SPECIES_ID and links to other data tables (primarily the SPECIES table). 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): NESTS: bird; alcid; diving; gull_turn; shorebird; waterfowl. The STATUS data table contains records for each species that is threatened or endangered on state or federal lists. The items include: ELEMENT, SPECIES_ID, STATE (two-letter state abbreviations),

S_F (state or federal status), T_E (threatened or endangered status), DATE_PUB (the date the atlas was published when the given state and federal listings were in effect), and EL_SPE. The SEASONAL data table indicates the presence of a particular species in a particular location by month (JAN-DEC). The BIORES table is linked to the SEASONAL table using the item EL_SPE_SEA (a concatenation of the first letter of the ELEMENT, SPECIES_ID, and SEASON_ID). The BREED data table contains the life stage or life history data for each unique combination of ELEMENT, SPECIES_ID, and SEASON_ID (or EL_SPE_SEA). It contains up to 12 records corresponding to each month of the year that the species is present in that location. The items BREED1-BREED5 will reflect different life activities, depending on the ELEMENT referenced. For NESTS, BREED1 = nesting, BREED2 = laying, BREED3 = hatching, and BREED4 = fledging. There is no BREED5 activity for NESTS, so this column is populated with a dash (-). The SOURCES data table contains metadata for each biological and human-use source listed in the ESI atlas. The items in SOURCES include: SOURCE_ID; ORIGINATOR (author); DATE_PUB (date of publication); TITLE (title of the data set); DATA_FORMAT (digital type, hardcopy maps, etc.); PUBLICATION (additional citation); SCALE (source scale denominator); and TIME_PERIOD (beginning and ending dates of original data collection). The SOURCES data table is linked to all biological data at the feature plus species-level and human-use data at the feature-level. Due to the complexity of the relational database model, the biological data items are also 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, BREED5, RARNUM, G_SOURCE, S_SOURCE, and BREED. All of these items are the same as their counterparts in the individual files described above, except the BREED1-BREED5 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-BREED5 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, or it may be linked directly from the RARNUM in each of the biology cover's attribute files. As mentioned, BREED_DT is an auxiliary support file to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item. A second supporting data file is SOURCES. This is the same as the source file described above, and the link from the flat file is both G_SOURCE and S_SOURCE. It should be noted that although the flat file eases data query, it is not a normalized database structure, and actual updates performed by the states and other responsible agencies should be done using the relational files.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:
The biological data sets are developed primarily using regional experts who estimate concentration areas. Unlike shorelines, which maintain relative spatial stability through time, the biological data by nature vary in distribution across the landscape. Therefore, the 1:250,000 USGS quadrangles are used as a basemap in gathering the data but the data have "fuzzy" boundaries which must be understood when utilizing this information.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: Shawn Stephensen
Publication_Date: 1999
Title: Beringian Seabird Colony Catalog

Geospatial_Data_Presentation_Form: Spreadsheet
Publication_Information:

Publication_Place: Anchorage, Alaska
Publisher: United States Fish and Wildlife Service
Type_of_Source_Media: Electronic mail
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1998
Source_Currentness_Reference: Date of Publication
Source_Citation_Abbreviation: None
Source_Contribution: Seabird nests
Process_Step:

Process_Description:
All the digital data were checked using both digital and on-screen procedures, plotted, checked by the biological expert, edited to remove any errors, and plotted for review by the regional specialists. The reviewed maps were updated on the computer, checked once again, and plotted at final map scale. A team of specialists reviewed the entire series of maps, checked all data, and made final edits. The data were merged to form the study-wide layers that are described in the document. The data merging included a final quality control check where topological consistency, rules for geography, and database to geography were checked and validated for all relationships.
Process_Date: 20000810
Process_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: NOAA, Office of Response and Restoration
Contact_Person: Jill Petersen
Contact_Address:

Address_Type: Physical address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: jill_petersen@hazmat.noaa.gov.us

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Spatial_Data_Organization_Information:

Direct_Spatial_Reference_Method: Vector
Point_and_Vector_Object_Information:

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Entity point
Point_and_Vector_Object_Count: 1805

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

Geographic:

Latitude_Resolution: 0.00005
Longitude_Resolution: 0.00005
Geographic_Coordinate_Units: Decimal degrees
Geodetic_Model:

Horizontal_Datum_Name: North American Datum of 1927
Ellipsoid_Name: Clarke 1866
Semi-major_Axis: 6378206.4
Denominator_of_Flattening_Ratio: 294.98

Entity_and_Attribute_Information:

Detailed_Description:

Entity_Type:

Entity_Type_Label: Entity Points
Entity_Type_Definition:
There are approximately 256 colonial waterbird nesting sites. These sites area occupied mostly by seabirds and black oystercatchers. Eagle nest sites are found throughout the coastal zone of Prince William Sound. There are approximately 1549 nesting sites in the area covered by this atlas. Eagles are present in the Sound all year, but their most critical time is from May to July, when they are nesting.
Entity_Type_Definition_Source: Research Planning, Inc.
Attribute:

Attribute_Label: ID
Attribute_Definition:
A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas number (59), element number (5), and record number. The following bird species are found in the Prince William Sound NESTS data set (SPECIES ID, NAME): 8, Double-crested cormorant; 10, Pelagic cormorant; 36, Glaucous-winged gull; 38, Herring gull; 41, Mew gull; 46, Common murre; 47, Pigeon guillemot; 50, Rhinoceros auklet; 51, Tufted puffin; 68, Black oystercatcher; 79, Cormorant; 80, Arctic tern; 81, Horned puffin; 84, Parakeet auklet; 96, Leach's storm-petrel; 99, Red-faced cormorant; 100, Black-legged kittiwake; 101, Aleutian tern; 102, Fork-tailed

storm-petrel; 104, Murre; 105, Thick-billed murre; 106, Ancient murrelet; 129, Northern fulmar; 1001, Gulls
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 590500001
Range_Domain_Maximum: 590501805
Beginning_Date_of_Attribute_Values: 200011
Ending_Date_of_Attribute_Values: 200011
Attribute:

Attribute_Label: RARNUM
Attribute_Definition:
An identifier that links directly to the BIORES table or the flat format BIOFILE table.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 59000181
Range_Domain_Maximum: 59000348
Beginning_Date_of_Attribute_Values: 199901
Ending_Date_of_Attribute_Values: 200011

Distribution_Information:

Distributor:

Contact_Information:

Contact_Person_Primary:

Contact_Person: John Kaperick
Contact_Organization: NOAA, Office of Response and Restoration
Contact_Address:

Address_Type: Physical Address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6400
Contact_Facsimile_Telephone: (206) 526-6329
Resource_Description: ESI Atlas for Prince William Sound, Alaska
Distribution_Liability:
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer-input

peripherals, or when the physical medium is delivered in damaged condition.

Custom_Order_Process:

Contact NOAA for distribution options (see Distribution_Information).

Metadata_Reference_Information:

Metadata_Date: 200011
Metadata_Review_Date: 200011
Metadata_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Jill Petersen
Contact_Organization: NOAA, Office of Response and Restoration
Contact_Position: GIS Manager
Contact_Address:

Address_Type: Physical Address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: jill_petersen@hazmat.noaa.gov.us
Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998

Prince William Sound, Alaska ESI: FISH (Fish Polygons)

Metadata:

Identification_Information:

Citation:

Citation_Information:

Originator:
National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.
Publication_Date: 200011
Title: Prince William Sound, Alaska ESI: FISH (Fish Polygons)
Edition: Second
Geospatial_Data_Presentation_Form: Atlas
Series_Information:

Series_Name: None
Issue_Identification: Prince William Sound, Alaska
Publication_Information:

Publication_Place: Seattle, Washington
Publisher:
National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington
Other_Citation_Details:
Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.

Description:

Abstract:

This data set comprises the Environmental Sensitivity Index (ESI) data for Prince William Sound, Alaska. ESI data characterize estuarine environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources. This data set contains sensitive biological resource polygonal data for fish.

Purpose:

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

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1989
Ending_Date: 1999

Currentness_Reference: Project time span

Status:

Progress: Complete
Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -148.875
East_Bounding_Coordinate: -144.000
North_Bounding_Coordinate: 61.292
South_Bounding_Coordinate: 54.393

Keywords:

Theme:

Theme_Keyword_Thesaurus: None
Theme_Keyword: Sensitivity maps
Theme_Keyword: ESI
Theme_Keyword: Coastal resources
Theme_Keyword: Oil spill planning
Theme_Keyword: Coastal zone management
Theme_Keyword: Fish
Theme_Keyword: Benthic
Theme_Keyword: Nursery
Theme_Keyword: Juvenile
Theme_Keyword: Forage

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: Prince William Sound
Place_Keyword: Alaska
Place_Keyword: Copper River Delta
Place_Keyword: Blying Sound

Access_Constraints: None

Use_Constraints:

DO NOT USE 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

Data_Set_Credit (below) would be appreciated in products derived from these data.

Browse_Graphic:

Browse_Graphic_File_Name: pwsdatafig.jpg

Browse_Graphic_File_Description:

Relationships between the biology data layers and the attribute files for the Prince William Sound data.

Browse_Graphic_File_Type: JPEG

Data_Set_Credit:

This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20). The following files are included in the data set: bio_lut.e00, biofile.e00, biores.e00, birds.e00, breed.e00, breed_dt.e00, esi.e00, fish.e00, fishl.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, m_mampt.e00, nests.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, socecon.e00, sources.e00, species.e00, status.e00.

Data_Quality_Information:

Attribute_Accuracy:

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.

Logical_Consistency_Report:

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status), DATE_PUB (the date the atlas was published when the given state and federal listings were in effect), and EL_SPE. The SEASONAL data table indicates the presence of a particular species in a particular location by month (JAN-DEC). The BIORES table is linked to the SEASONAL table using the item EL_SPE_SEA (a concatenation of the first letter of the ELEMENT, SPECIES_ID, and SEASON_ID). The BREED data table contains the life stage or life history data for each unique combination of ELEMENT, SPECIES_ID, and SEASON_ID (or EL_SPE_SEA). It contains up to 12 records corresponding to each month of the year that the species is present in that location. The items BREED1-BREED5 will reflect different life activities, depending on the ELEMENT referenced. For FISH, BREED1 = spawning, BREED2 = eggs, BREED3 = larvae, and BREED4 = juveniles, BREED5 = adults. The SOURCES data table contains metadata for each biological and human-use source listed in the ESI atlas. The items in SOURCES include: SOURCE_ID; ORIGINATOR (author); DATE_PUB (date of publication); TITLE (title of the data set); DATA_FORMAT (digital type, hardcopy maps, etc.); PUBLICATION (additional citation); SCALE (source scale denominator); and TIME_PERIOD (beginning and ending dates of original data collection). The SOURCES data table is linked to all biological data at the feature plus species-level and human-use data at the feature-level. Due to the complexity of the relational database model, the biological data items are also 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, BREED5, RARNUM, G_SOURCE, S_SOURCE, and BREED. All of these items are the same as their counterparts in the individual files described above, except the BREED1-BREED5 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-BREED5 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, or it may be linked directly from the RARNUM in each of the biology cover's attribute files. As mentioned, BREED_DT is an auxiliary support file to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item. A second supporting data file is SOURCES. This is the same as the source file described above, and the link from the flat file is both G_SOURCE and S_SOURCE. It should be noted that although the flat file eases data query, it is not a normalized database structure, and actual updates performed by the states and other responsible agencies should be done using the relational files.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

The biological data sets are developed primarily using regional experts who estimate concentration areas. Unlike shorelines, which maintain relative spatial stability through time, the biological data by nature vary in distribution across the landscape. Therefore, the 1:250,000 USGS quadrangles are used as a basemap in gathering the data but the data have "fuzzy" boundaries which must be understood when utilizing this information.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: John Wilcock
Publication_Date: 1998
Title: Alaska Department of Fish and Game Herring Surveys
Geospatial_Data_Presentation_Form: Map

Publication_Information:

Publication_Place: Anchorage, Alaska
Publisher: Alaska Department of Fish and Game
Type_of_Source_Media: Electronic mail
Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1973
Ending_Date: 1998
Source_Currentness_Reference: Survey Date
Source_Citation_Abbreviation: None
Source_Contribution: Herring spawning areas
Source_Information:

Source_Citation:

Citation_Information:

Originator: Evelyn Brown
Publication_Date: 1999
Title: Forage Fish Concentration Areas
Geospatial_Data_Presentation_Form: Map
Publication_Information:

Publication_Place: Fairbanks, Alaska
Publisher: University of Alaska
Source_Scale_Denominator: 63360
Type_of_Source_Media: Electronic mail
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: Unknown
Source_Currentness_Reference: Survey date
Source_Citation_Abbreviation: None
Source_Contribution: Forage fish concentration areas
Source_Information:

Source_Citation:

Citation_Information:

Originator: Matthew Eagleton
Publication_Date: 1999
Title: Essential Fish Habitat
Geospatial_Data_Presentation_Form: Map
Publication_Information:

Publication_Place: Anchorage, Alaska
Publisher: National Marine Fisheries Service
Type_of_Source_Media: Electronic bulletin board

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: Unknown
Source_Currentness_Reference: Survey date
Source_Citation_Abbreviation: None
Source_Contribution: Marine benthic fish
Process_Step:

Process_Description:
All the digital data were checked using both digital and on-screen procedures, plotted, checked by the biological expert, edited to remove any errors, and plotted for review by the regional specialists. The reviewed maps were updated on the computer, checked once again, and plotted at final map scale. A team of specialists reviewed the entire series of maps, checked all data, and made final edits. The data were merged to form the study-wide layers that are described in the document. The data merging included a final quality control check where topological consistency, rules for geography, and database to geography were checked and validated for all relationships.
Process_Date: 20000810
Process_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: NOAA, Office of Response and Restoration
Contact_Person: Jill Petersen
Contact_Address:

Address_Type: Physical address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: jill_petersen@hazmat.noaa.gov.us

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Spatial_Data_Organization_Information:

Direct_Spatial_Reference_Method: Vector
Point_and_Vector_Object_Information:

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: GT-polygon composed of rings
Point_and_Vector_Object_Count: 1964
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Area point
Point_and_Vector_Object_Count: 1964
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Complete chain
Point_and_Vector_Object_Count: 3082
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 412513
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 2854

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

Geographic:

Latitude_Resolution: 0.00005
Longitude_Resolution: 0.00005
Geographic_Coordinate_Units: Decimal degrees
Geodetic_Model:

Horizontal_Datum_Name: North American Datum of 1927
Ellipsoid_Name: Clarke 1866
Semi-major_Axis: 6378206.4
Denominator_of_Flattening_Ratio: 294.98

Entity_and_Attribute_Information:

Detailed_Description:

Entity_Type:

Entity_Type_Label: GT-polygon
Entity_Type_Definition:
The fish polygons depicted in the FISH data layer include selected forage fish, marine benthic fish, and herring spawning grounds. Not all species of environmental, recreational, or commercial interest are depicted. The forage fish areas are for capelin, Pacific herring, and Pacific sand lance. The entire coastal area of Prince William Sound can be considered as important waters for anadromous fish (represented in the FISHL data set). In addition, the National Marine Fisheries Service has classified all waters of Prince William Sound as essential fish habitat for Walleye pollock, Pacific cod, yellowfin sole, rock sole, flathead sole, arrowtooth flounder, sablefish

(blackcod), sculpin spp., and pink, chum, chinook, coho, and sockeye salmon.
Entity_Type_Definition_Source: Research Planning, Inc.
Attribute:

Attribute_Label: ID
Attribute_Definition:
A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas number (59), element number (2), and record number. ID values of 9999 are holes in polygons and do not contain information. The following FISH species are depicted as polygons in the Prince William Sound ESI data set (SPECIES ID, NAME): 1 Sablefish (blackcod), 4 Arrowtooth flounder, 9 Rock sole, 16 Flathead sole, 19 Pacific cod, 22 Walleye Pollock, 66 Pacific herring, 78 Capelin, 80 Pacific sand lance, 461 Yellowfin sole, 567 Sculpin.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 590200002
Range_Domain_Maximum: 590201959
Beginning_Date_of_Attribute_Values: 200011
Ending_Date_of_Attribute_Values: 200011
Attribute:

Attribute_Label: RARNUM
Attribute_Definition:
An identifier that links directly to the BIORES table or the flat format BIOFILE table.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 59001061
Range_Domain_Maximum: 59001080
Beginning_Date_of_Attribute_Values: 199901
Ending_Date_of_Attribute_Values: 200011

Distribution_Information:

Distributor:

Contact_Information:

Contact_Person_Primary:

Contact_Person: John Kaperick
Contact_Organization: NOAA, Office of Response and Restoration
Contact_Address:

Address_Type: Physical Address
Address: 7600 Sand Point Way N.E.
City: Seattle

State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6400
Contact_Facsimile_Telephone: (206) 526-6329
Resource_Description: ESI Atlas for Prince William Sound, Alaska
Distribution_Liability:
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer-input peripherals, or when the physical medium is delivered in damaged condition.
Custom_Order_Process:
Contact NOAA for distribution options (see Distribution_Information).

Metadata_Reference_Information:

Metadata_Date: 200011
Metadata_Review_Date: 200011
Metadata_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Jill Petersen
Contact_Organization: NOAA, Office of Response and Restoration
Contact_Position: GIS Manager
Contact_Address:

Address_Type: Physical Address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: jill_petersen@hazmat.noaa.gov.us
Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998

Prince William Sound, Alaska ESI: FISHL (Fish Lines)

Metadata:

Identification_Information:

Citation:

Citation_Information:

Originator:
National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.
Publication_Date: 200011
Title: Prince William Sound, Alaska ESI: FISH (Fish Lines)
Edition: Second
Geospatial_Data_Presentation_Form: Atlas
Series_Information:

Series_Name: None
Issue_Identification: Prince William Sound, Alaska
Publication_Information:

Publication_Place: Seattle, Washington
Publisher:
National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington
Other_Citation_Details:
Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.

Description:

Abstract:

This data set comprises the Environmental Sensitivity Index (ESI) data for Prince William Sound, Alaska. ESI data characterize estuarine environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources. This data set contains sensitive biological resource line data for fish.

Purpose:

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

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1989
Ending_Date: 1999

Currentness_Reference: Project time span

Status:

Progress: Complete
Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -148.875
East_Bounding_Coordinate: -144.000
North_Bounding_Coordinate: 61.292
South_Bounding_Coordinate: 54.393

Keywords:

Theme:

Theme_Keyword_Thesaurus: None
Theme_Keyword: Sensitivity maps
Theme_Keyword: ESI
Theme_Keyword: Coastal resources
Theme_Keyword: Oil spill planning
Theme_Keyword: Coastal zone management
Theme_Keyword: Fish
Theme_Keyword: Anadromous
Theme_Keyword: Diadromous

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: Prince William Sound
Place_Keyword: Alaska
Place_Keyword: Copper River Delta
Place_Keyword: Blying Sound

Access_Constraints: None

Use_Constraints:

DO NOT USE 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 Data_Set_Credit (below) would be appreciated in products derived from these data.

Browse_Graphic:

Browse_Graphic_File_Name: pwsdatafig.jpg
Browse_Graphic_File_Description:
Relationships between the biology data layers and the attribute files for the Prince William Sound data.
Browse_Graphic_File_Type: JPEG

Data_Set_Credit:
This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.

Native_Data_Set_Environment:
The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20). The following files are included in the data set: bio_lut.e00, biofile.e00, biores.e00, birds.e00, breed.e00, breed_dt.e00, esi.e00, fish.e00, fishl.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, m_mampt.e00, nests.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, socecon.e00, sources.e00, species.e00, status.e00.

Data_Quality_Information:

Attribute_Accuracy:

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.

Logical_Consistency_Report:
The digitization of shoreline types, biological resources, and human-use resources is a complex and highly quality-controlled process. Existing digital shoreline and wetlands data are integrated into a study-wide basemap. The first layer of information digitized is the ESI shoreline classification. The ESI habitat ranking is compiled onto 1:63,360 USGS topographic quadrangles by a geomorphologist. The hardcopy maps are then digitized and checked, using both on-screen and hardcopy reviews. The edited maps are updated, checked once again for completeness and topological and logical consistency. Any errors in the shoreline classification are updated prior to digitization of the biological reference so that there are no slivers in the geographic coordinates. The hardcopy biological information is compiled onto 1:250,000 USGS topographic quadrangles by a biological expert using data from regional specialists in the form of maps, tables, charts, written descriptions of wildlife distributions, and personal interviews. Concurrently, digital data sources are imported, projected, checked for quality control, and integrated into the data structure. The hardcopy data are digitized, checked using both digital and on-screen procedures, integrated with existing data, plotted, and sent out for review by the regional specialists. The edited maps are updated, checked once again, and the final product plotted (at approximately 1:87,000 scale). A team of specialists reviews the entire series of maps, checks all data, and makes final edits. The data are then merged to form the study-wide layers. The data merging includes a final quality control check where labels, chains, and polygons are checked for attribute accuracy. To finalize the data checking process, each coverage is checked using a standardized form by two GIS personnel (a technician and the GIS manager), and each attribute database is checked using several programs that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles,

unnecessary nodes, etc.), and ORACLE (r) and ARC/INFO (r) consistencies. A final review is made by the GIS manager, where the data are written to tape and the metadata are written. After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks. In the process of checking for topological and database consistencies, new IDs and RARNUMs or HUNUMs are also generated. The new IDs are a combination of atlas number, element number, and record number. In addition, the value used to represent the element is modified to reflect the type of feature being mapped. In the case of an element that is normally represented by a point or polygon, a value of 20 is added to the standard element value for mapping of linear features. In the case where an element usually mapped as a polygon is represented by a point, a value of 30 is added to the regular element value. The RARNUMs are also modified to include the atlas number, so multiple atlases can be combined and RARNUMs remain unique. RARNUMs are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUMs are also modified to include the atlas number. ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI_Viewer product are also included on the CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats. The section Spatial_Data_Organization_Information refers to the source files in ARC export format only.

Completeness_Report:

Biological information presented in this atlas was collected and compiled with the assistance of biologists from the U.S. Fish and Wildlife Service, Alyeska Pipeline Company, Alaska Department of Fish and Game, and various other agencies, organizations, and groups. Information collected and depicted on the maps denotes the key biological resources that are most likely at risk in the event of an oil spill. Four major categories, or ELEMENTs, of biological resources were considered during data compilation: birds; fish; invertebrates; and marine mammals. The ELEMENTs generally correspond to the coverage or geographic data layer names. There are also six attribute, or data tables, BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS, that are used to store the complex biological data. The biological lines (FISHL) are linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or they can be linked directly using RARNUM. [The ID is a unique combination of the atlas number (for Prince William Sound this is 59), an element specific number (birds are layer 1, fish are layer 2, etc.), and a unique record number. The RARNUM represents a unique combination of species, seasonalities, concentrations, and source information. For each of these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases.] The items in BIORES include: RARNUM, SPECIES_ID, CONC, SEASON_ID, G_SOURCE, S_SOURCE, ELEMENT, EL_SPE, and EL_SPE_SEA. SPECIES_ID is the numeric identifier of each species and is unique within each ELEMENT. CONC is the concentration of the species and can be descriptive (LOW, MEDIUM, HIGH, etc.) or an actual count of the number of individuals or nests associated with a polygon or point. SEASON_ID contains a numeric identifier for the unique monthly presence and life history characteristics of each species at a given location. There can be one seasonality record per species, or the same species can have different monthly presence or breeding activities at different sites. When this occurs, a new record with a different SEASON_ID is referenced. G_SOURCE contains the SOURCE_ID for geographic information, and S_SOURCE contains the SOURCE_ID for seasonality information. Both items link to the SOURCES data table. EL_SPE is a concatenation of ELEMENT and SPECIES_ID and links to other data tables (primarily the SPECIES table). 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): FISHL: diadromous. The STATUS data table contains records for each species that is threatened or endangered on state or federal lists. The items include: ELEMENT, SPECIES_ID, STATE (two-letter state abbreviations), S_F (state or federal status), T_E (threatened or endangered status), DATE_PUB (the date the atlas was published when the given state and federal listings were in

effect), and EL_SPE. The SEASONAL data table indicates the presence of a particular species in a particular location by month (JAN-DEC). The BIORES table is linked to the SEASONAL table using the item EL_SPE_SEA (a concatenation of the first letter of the ELEMENT, SPECIES_ID, and SEASON_ID). The BREED data table contains the life stage or life history data for each unique combination of ELEMENT, SPECIES_ID, and SEASON_ID (or EL_SPE_SEA). It contains up to 12 records corresponding to each month of the year that the species is present in that location. The items BREED1-BREED5 will reflect different life activities, depending on the ELEMENT referenced. For FISHL, BREED1 = spawning, BREED2 = eggs, BREED3 = larvae, and BREED4 = juveniles, BREED5 = adults. The SOURCES data table contains metadata for each biological and human-use source listed in the ESI atlas. The items in SOURCES include: SOURCE_ID; ORIGINATOR (author); DATE_PUB (date of publication); TITLE (title of the data set); DATA_FORMAT (digital type, hardcopy maps, etc.); PUBLICATION (additional citation); SCALE (source scale denominator); and TIME_PERIOD (beginning and ending dates of original data collection). The SOURCES data table is linked to all biological data at the feature plus species-level and human-use data at the feature-level. Due to the complexity of the relational database model, the biological data items are also 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, BREED5, RARNUM, G_SOURCE, S_SOURCE, and BREED. All of these items are the same as their counterparts in the individual files described above, except the BREED1-BREED5 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-BREED5 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, or it may be linked directly from the RARNUM in each of the biology cover's attribute files. As mentioned, BREED_DT is an auxiliary support file to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item. A second supporting data file is SOURCES. This is the same as the source file described above, and the link from the flat file is both G_SOURCE and S_SOURCE. It should be noted that although the flat file eases data query, it is not a normalized database structure, and actual updates performed by the states and other responsible agencies should be done using the relational files.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:
The biological data sets are developed primarily using regional experts who estimate concentration areas. Unlike shorelines, which maintain relative spatial stability through time, the biological data by nature vary in distribution across the landscape. Therefore, the 1:250,000 USGS quadrangles are used as a basemap in gathering the data but the data have "fuzzy" boundaries which must be understood when utilizing this information.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: Alaska Department of Fish and Game
Publication_Date: 1999
Title: Waters Important to Anadromous Fish
Geospatial_Data_Presentation_Form: Map
Publication_Information:

Publication_Place: Anchorage, Alaska
Publisher: Alaska Department of Fish and Game
Source_Scale_Denominator: 63360
Type_of_Source_Media: Electronic mail
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: Unknown
Source_Currentness_Reference: Survey date
Source_Citation_Abbreviation: None
Source_Contribution: Anadromous fish
Process_Step:

Process_Description:
All the digital data were checked using both digital and on-screen procedures, plotted, checked by the biological expert, edited to remove any errors, and plotted for review by the regional specialists. The reviewed maps were updated on the computer, checked once again, and plotted at final map scale. A team of specialists reviewed the entire series of maps, checked all data, and made final edits. The data were merged to form the study-wide layers that are described in the document. The data merging included a final quality control check where topological consistency, rules for geography, and database to geography were checked and validated for all relationships.
Process_Date: 20000810
Process_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: NOAA, Office of Response and Restoration
Contact_Person: Jill Petersen
Contact_Address:

Address_Type: Physical address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: jill_petersen@hazmat.noaa.gov.us

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Spatial_Data_Organization_Information:

Direct_Spatial_Reference_Method: Vector
Point_and_Vector_Object_Information:

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Complete chain
Point_and_Vector_Object_Count: 1363
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 16355
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 2697

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

Geographic:

Latitude_Resolution: 0.00005
Longitude_Resolution: 0.00005
Geographic_Coordinate_Units: Decimal degrees
Geodetic_Model:

Horizontal_Datum_Name: North American Datum of 1927
Ellipsoid_Name: Clarke 1866
Semi-major_Axis: 6378206.4
Denominator_of_Flattening_Ratio: 294.98

Entity_and_Attribute_Information:

Detailed_Description:

Entity_Type:

Entity_Type_Label: Line
Entity_Type_Definition:
The anadromous streams depicted in FISHL are from the Alaska Department of Fish and Game database, Waters Important to Anadromous Fish. Species that are included in these streams are coho, chinook, chum, pink, and sockeye salmon, dolly varden, and cutthroat trout. While all of the anadromous streams in the database are shown, some of them are represented as a straight line, connecting the beginning point and endpoint of the stream, because the actual stream was not digitized. It is also cautioned that although this dataset is the best current representation of anadromous streams, it should not be considered definitive in determining the presence or absence of fish runs. Absence of anadromous streams on the maps for any particular location does not necessarily suggest that anadromous runs do not occur there.
Entity_Type_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: ID
Attribute_Definition:
A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas number (59), element number (22), and record number. The following FISHL species are depicted as lines in the Prince William Sound ESI data set (SPECIES ID, NAME): 45 Coastal Cutthroat trout, 68 Chinook salmon, 69 Coho salmon (silver), 70 Pink salmon (humpy), 71 Sockeye salmon (red), 72 Chum salmon (dog), 135 Dolly varden, 1022 Anadromous fish.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 592200001
Range_Domain_Maximum: 592201363
Beginning_Date_of_Attribute_Values: 200011
Ending_Date_of_Attribute_Values: 200011

Attribute:

Attribute_Label: RARNUM
Attribute_Definition:
An identifier that links directly to the BIORES table or the flat format BIOFILE table.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 59000957
Range_Domain_Maximum: 59001060
Beginning_Date_of_Attribute_Values: 199901
Ending_Date_of_Attribute_Values: 200011

Distribution_Information:

Distributor:

Contact_Information:

Contact_Person_Primary:

Contact_Person: John Kaperick
Contact_Organization: NOAA, Office of Response and Restoration
Contact_Address:

Address_Type: Physical Address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6400

Contact_Facsimile_Telephone: (206) 526-6329
Resource_Description: ESI Atlas for Prince William Sound, Alaska
Distribution_Liability:
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer-input peripherals, or when the physical medium is delivered in damaged condition.
Custom_Order_Process:
Contact NOAA for distribution options (see Distribution_Information).

Metadata_Reference_Information:

Metadata_Date: 200011
Metadata_Review_Date: 200011
Metadata_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Jill Petersen
Contact_Organization: NOAA, Office of Response and Restoration
Contact_Position: GIS Manager
Contact_Address:

Address_Type: Physical Address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: jill_petersen@hazmat.noaa.gov.us
Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998

Prince William Sound, Alaska ESI: M_MAMMAL (Marine Mammal Polygons)

Metadata:

Identification_Information:

Citation:

Citation_Information:

Originator:
National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.
Publication_Date: 200011
Title: Prince William Sound, Alaska ESI: M_MAMMAL (Marine Mammal Polygons)
Edition: Second
Geospatial_Data_Presentation_Form: Atlas
Series_Information:

Series_Name: None
Issue_Identification: Prince William Sound, Alaska
Publication_Information:

Publication_Place: Seattle, Washington
Publisher:
National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington
Other_Citation_Details:
Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.

Abstract:

This data set comprises the Environmental Sensitivity Index (ESI) data for Prince William Sound, Alaska. ESI data characterize estuarine environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources. This data set contains sensitive biological resource polygonal data for marine mammals.

Purpose:

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

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1989
Ending_Date: 1999

Currentness_Reference: Project time span

Status:

Progress: Complete
Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -148.875
East_Bounding_Coordinate: -144.000
North_Bounding_Coordinate: 61.292
South_Bounding_Coordinate: 54.393

Keywords:

Theme:

Theme_Keyword_Thesaurus: None
Theme_Keyword: ESI
Theme_Keyword: Sensitivity maps
Theme_Keyword: Coastal resources
Theme_Keyword: Oil spill planning
Theme_Keyword: Coastal zone management
Theme_Keyword: Marine mammals
Theme_Keyword: Whale
Theme_Keyword: Sea otter

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: Prince William Sound
Place_Keyword: Alaska
Place_Keyword: Copper River Delta
Place_Keyword: Blying Sound

Access_Constraints: None

Use_Constraints:

DO NOT USE 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 Data_Set_Credit (below) would be appreciated in products derived from these data.

Browse_Graphic:

Browse_Graphic_File_Name: pwsdatafig.jpg
Browse_Graphic_File_Description:
Relationships between the biology data layers and the attribute files for the Prince William Sound data.
Browse_Graphic_File_Type: JPEG

Data_Set_Credit:
This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.

Native_Data_Set_Environment:
The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20). The following files are included in the data set: bio_lut.e00, biofile.e00, biores.e00, birds.e00, breed.e00, breed_dt.e00, esi.e00, fish.e00, fishl.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, m_mampt.e00, nests.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, socecon.e00, sources.e00, species.e00, status.e00.

Data_Quality_Information:

Attribute_Accuracy:

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.

Logical_Consistency_Report:
The digitization of shoreline types, biological resources, and human-use resources is a complex and highly quality-controlled process. Existing digital shoreline and wetlands data are integrated into a study-wide basemap. The first layer of information digitized is the ESI shoreline classification. The ESI habitat ranking is compiled onto 1:63,360 USGS topographic quadrangles by a geomorphologist. The hardcopy maps are then digitized and checked, using both on-screen and hardcopy reviews. The edited maps are updated, checked once again for completeness and topological and logical consistency. Any errors in the shoreline classification are updated prior to digitization of the biological reference so that there are no slivers in the geographic coordinates. The hardcopy biological information is compiled onto 1:250,000 USGS topographic quadrangles by a biological expert using data from regional specialists in the form of maps, tables, charts, written descriptions of wildlife distributions, and personal interviews. Concurrently, digital data sources are imported, projected, checked for quality control, and integrated into the data structure. The hardcopy data are digitized, checked using both digital and on-screen procedures, integrated with existing data, plotted, and sent out for review by the regional specialists. The edited maps are updated, checked once again, and the final product plotted (at approximately 1:87,000 scale). A team of specialists reviews the entire series of maps, checks all data, and makes final edits. The data are then merged to form the study-wide layers. The data merging includes a final quality control check where labels, chains, and polygons are checked for attribute accuracy. To finalize the data checking process, each coverage is checked using a standardized form by two GIS personnel (a technician and the GIS manager), and each attribute database is checked using several programs that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and ORACLE (r) and ARC/INFO (r) consistencies. A final review is made

by the GIS manager, where the data are written to tape and the metadata are written. After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks. In the process of checking for topological and database consistencies, new IDs and RARNUMs or HUNUMs are also generated. The new IDs are a combination of atlas number, element number, and record number. In addition, the value used to represent the element is modified to reflect the type of feature being mapped. In the case of an element that is normally represented by a point or polygon, a value of 20 is added to the standard element value for mapping of linear features. In the case where an element usually mapped as a polygon is represented by a point, a value of 30 is added to the regular element value. The RARNUMs are also modified to include the atlas number, so multiple atlases can be combined and RARNUMs remain unique. RARNUMs are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUMs are also modified to include the atlas number. ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI_Viewer product are also included on the CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats. The section Spatial_Data_Organization_Information refers to the source files in ARC export format only.

Completeness_Report:

Biological information presented in this atlas was collected and compiled with the assistance of biologists from the U.S. Fish and Wildlife Service and various other agencies, organizations, and groups. Information collected and depicted on the maps denotes the key biological resources that are most likely at risk in the event of an oil spill. Four major categories, or ELEMENTs, of biological resources were considered during data compilation: birds; fish; invertebrates; and marine mammals. The ELEMENTs generally correspond to the coverage or geographic data layer names. There are also six attribute, or data tables, BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS, that are used to store the complex biological data. The biological polygons (M_MAMMAL) are linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or they can be linked directly using RARNUM. [The ID is a unique combination of the atlas number (for Prince William Sound this is 59), an element specific number (birds are layer 1, fish are layer 2, etc.), and a unique record number. The RARNUM represents a unique combination of species, seasonalities, concentrations, and source information. For each of these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases.] The items in BIORES include: RARNUM, SPECIES_ID, CONC, SEASON_ID, G_SOURCE, S_SOURCE, ELEMENT, EL_SPE, and EL_SPE_SEA. SPECIES_ID is the numeric identifier of each species and is unique within each ELEMENT. CONC is the concentration of the species and can be descriptive (LOW, MEDIUM, HIGH, etc.) or an actual count of the number of individuals or nests associated with a polygon or point. SEASON_ID contains a numeric identifier for the unique monthly presence and life history characteristics of each species at a given location. There can be one seasonality record per species, or the same species can have different monthly presence or breeding activities at different sites. When this occurs, a new record with a different SEASON_ID is referenced. G_SOURCE contains the SOURCE_ID for geographic information, and S_SOURCE contains the SOURCE_ID for seasonality information. Both items link to the SOURCES data table. EL_SPE is a concatenation of ELEMENT and SPECIES_ID and links to other data tables (primarily the SPECIES table). 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): M_MAMMAL: sea_otter, whale. The STATUS data table contains records for each species that is threatened or endangered on state or federal lists. The items include: ELEMENT, SPECIES_ID, STATE (two-letter state abbreviations), S_F (state or federal status), T_E (threatened or endangered status), DATE_PUB (the date the atlas was published when the given state and federal listings were in effect), and EL_SPE. The SEASONAL data table indicates the presence of a particular species in a particular location by month (JAN-DEC). The BIORES table is linked to

the SEASONAL table using the item EL_SPE_SEA (a concatenation of the first letter of the ELEMENT, SPECIES_ID, and SEASON_ID). The BREED data table contains the life stage or life history data for each unique combination of ELEMENT, SPECIES_ID, and SEASON_ID (or EL_SPE_SEA). It contains up to 12 records corresponding to each month of the year that the species is present in that location. The items BREED1-BREED5 will reflect different life activities, depending on the ELEMENT referenced. For M_MAMMAL, BREED1 = mating, BREED2 = calving, BREED3 = pupping, and BREED4 = molting. There is no BREED5 activity for M_MAMMAL, so this column is populated with a dash (-). The SOURCES data table contains metadata for each biological and human-use source listed in the ESI atlas. The items in SOURCES include: SOURCE_ID; ORIGINATOR (author); DATE_PUB (date of publication); TITLE (title of the data set); DATA_FORMAT (digital type, hardcopy maps, etc.); PUBLICATION (additional citation); SCALE (source scale denominator); and TIME_PERIOD (beginning and ending dates of original data collection). The SOURCES data table is linked to all biological data at the feature plus species-level and human-use data at the feature-level. Due to the complexity of the relational database model, the biological data items are also 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, BREED5, RARNUM, G_SOURCE, S_SOURCE, and BREED. All of these items are the same as their counterparts in the individual files described above, except the BREED1-BREED5 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-BREED5 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, or it may be linked directly from the RARNUM in each of the biology cover's attribute files. As mentioned, BREED_DT is an auxiliary support file to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item. A second supporting data file is SOURCES. This is the same as the source file described above, and the link from the flat file is both G_SOURCE and S_SOURCE. It should be noted that although the flat file eases data query, it is not a normalized database structure, and actual updates performed by the states and other responsible agencies should be done using the relational files.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:
The biological data sets are developed primarily using regional experts who estimate concentration areas. Unlike shorelines, which maintain relative spatial stability through time, the biological data by nature vary in distribution across the landscape. Therefore, the 1:250,000 USGS quadrangles are used as a basemap in gathering the data but the data have "fuzzy" boundaries which must be understood when utilizing this information.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: Doug Wilson
Publication_Date: 1998
Title: Graphical Resource Database
Geospatial_Data_Presentation_Form: Map
Publication_Information:

Publication_Place: Anchorage, Alaska
Publisher: EMCON
Source_Scale_Denominator: 63360
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1992
Ending_Date: 1997
Source_Currentness_Reference: Survey date
Source_Citation_Abbreviation: None
Source_Contribution: Whales, sea lion haulouts
Source_Information:

Source_Citation:

Citation_Information:

Originator: John Williams; Dave Sanka
Publication_Date: Unpublished material
Title: Sea Otter Concentration Areas
Geospatial_Data_Presentation_Form: Map
Source_Scale_Denominator: 63360
Type_of_Source_Media: Paper
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1999
Source_Currentness_Reference: Contact date
Source_Citation_Abbreviation: None
Source_Contribution: Sea otter concentration areas
Process_Step:

Process_Description:
All the digital data were checked using both digital and on-screen procedures, plotted, checked by the biological expert, edited to remove any errors, and plotted for review by the regional specialists. The reviewed maps were updated on the computer, checked once again, and plotted at final map scale. A team of specialists reviewed the entire series of maps, checked all data, and made final edits. The data were merged to form the study-wide layers that are described in the document. The data merging included a final quality control check where topological consistency, rules for geography, and database to geography were checked and validated for all relationships.
Process_Date: 20000810
Process_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: NOAA, Office of Response and Restoration

Contact_Person: Jill Petersen
Contact_Address:

Address_Type: Physical address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: jill_petersen@hazmat.noaa.gov.us

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Spatial_Data_Organization_Information:

Direct_Spatial_Reference_Method: Vector
Point_and_Vector_Object_Information:

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: GT-polygon composed of rings
Point_and_Vector_Object_Count: 2265
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Area point
Point_and_Vector_Object_Count: 2265
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Complete chain
Point_and_Vector_Object_Count: 4608
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 480021
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 3831

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

Geographic:

Latitude_Resolution: 0.00005
Longitude_Resolution: 0.00005
Geographic_Coordinate_Units: Decimal degrees
Geodetic_Model:

Horizontal_Datum_Name: North American Datum of 1927
Ellipsoid_Name: Clarke 1866
Semi-major_Axis: 6378206.4
Denominator_of_Flattening_Ratio: 294.98

Entity_and_Attribute_Information:

Detailed_Description:

Entity_Type:

Entity_Type_Label: GT-polygon
Entity_Type_Definition:
Marine mammals depicted as polygons in the Prince William Sound atlas include whales and sea otters. High concentration areas for whales are depicted in the atlas. Although only certain high concentration areas are depicted, whales are highly mobile species, and can occur throughout most of the waters of Prince William Sound. Humpback and killer whales are common residents of the sound, but other species of whales are also seen in the sound. Gray whales are most commonly found in the migration corridor along the outer coast, but they may occasionally be found in the sound. For sea otters, concentrations are shown where surveys have been conducted. Sea otters are present all year throughout the sound. Many of the whales included in this atlas are protected as threatened or endangered species, and all marine mammals are protected under the Marine Mammal Protection Act of 1972.
Entity_Type_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: ID
Attribute_Definition:
A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas number (59), element number (4), and record number. ID values of 9999 are holes in polygons and do not contain information. The following M_MAMMAL species are depicted as polygons in the Prince William Sound data set (SPECIES ID, NAME): 4, Killer whale; 7, Sea otter; 13, Humpback whale; 26, Gray whale
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 590400002
Range_Domain_Maximum: 590402462
Beginning_Date_of_Attribute_Values: 200011
Ending_Date_of_Attribute_Values: 200011

Attribute:

Attribute_Label: RARNUM
Attribute_Definition:
An identifier that links directly to the BIORES table or the flat format BIOFILE table.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 59001112
Range_Domain_Maximum: 59001213
Beginning_Date_of_Attribute_Values: 199901
Ending_Date_of_Attribute_Values: 200011

Distribution_Information:

Distributor:

Contact_Information:

Contact_Person_Primary:

Contact_Person: John Kaperick
Contact_Organization: NOAA, Office of Response and Restoration
Contact_Address:

Address_Type: Physical Address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6400
Contact_Facsimile_Telephone: (206) 526-6329
Resource_Description: ESI Atlas for Prince William Sound, Alaska
Distribution_Liability:
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer-input peripherals, or when the physical medium is delivered in damaged condition.
Custom_Order_Process:
Contact NOAA for distribution options (see Distribution_Information).

Metadata_Reference_Information:

Metadata_Date: 200011
Metadata_Review_Date: 200011
Metadata_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Jill Petersen

Contact_Organization: NOAA, Office of Response and Restoration
Contact_Position: GIS Manager
Contact_Address:

Address_Type: Physical Address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: jill_petersen@hazmat.noaa.gov.us
Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998

Prince William Sound, Alaska ESI: M_MAMPT (Marine Mammal Points)

Metadata:

Identification_Information:

Citation:

Citation_Information:

Originator:
National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.
Publication_Date: 200011
Title: Prince William Sound, Alaska ESI: M_MAMPT (Marine Mammal Points)
Edition: Second
Geospatial_Data_Presentation_Form: Atlas
Series_Information:

Series_Name: None
Issue_Identification: Prince William Sound, Alaska
Publication_Information:

Publication_Place: Seattle, Washington
Publisher:
National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington
Other_Citation_Details:
Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.

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Range_of_Dates/Times:

Beginning_Date: 1989
Ending_Date: 1999

Currentness_Reference: Project time span

Status:

Progress: Complete
Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

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Keywords:

Theme:

Theme_Keyword_Thesaurus: None
Theme_Keyword: ESI
Theme_Keyword: Sensitivity maps
Theme_Keyword: Coastal resources
Theme_Keyword: Oil spill planning
Theme_Keyword: Coastal zone management
Theme_Keyword: Marine mammals
Theme_Keyword: Whale
Theme_Keyword: Sea lion
Theme_Keyword: Sea otter
Theme_Keyword: Seal

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: Prince William Sound
Place_Keyword: Alaska
Place_Keyword: Copper River Delta
Place_Keyword: Blying Sound

Access_Constraints: None
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Browse_Graphic:

Browse_Graphic_File_Name: pwsdatafig.jpg

Browse_Graphic_File_Description:

Relationships between the biology data layers and the attribute files for the Prince William Sound data.

Browse_Graphic_File_Type: JPEG

Data_Set_Credit:

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Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report:

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Logical_Consistency_Report:

The digitization of shoreline types, biological resources, and human-use resources is a complex and highly quality-controlled process. Existing digital shoreline and wetlands data are integrated into a study-wide basemap. The first layer of information digitized is the ESI shoreline classification. The ESI habitat ranking is compiled onto 1:63,360 USGS topographic quadrangles by a geomorphologist. The hardcopy maps are then digitized and checked, using both on-screen and hardcopy reviews. The edited maps are updated, checked once again for completeness and topological and logical consistency. Any errors in the shoreline classification are updated prior to digitization of the biological reference so that there are no slivers in the geographic coordinates. The hardcopy biological information is compiled onto 1:250,000 USGS topographic quadrangles by a biological expert using data from regional specialists in the form of maps, tables, charts, written descriptions of wildlife distributions, and personal interviews. Concurrently, digital data sources are imported, projected, checked for quality control, and integrated into the data structure. The hardcopy data are digitized, checked using both digital and on-screen procedures, integrated with existing data, plotted, and sent out for review by the regional specialists. The edited maps are updated, checked once again, and the final product plotted (at approximately 1:87,000 scale). A team of specialists reviews the entire series of maps, checks all data, and makes final edits. The data are then merged to form the study-wide layers. The data merging includes a final quality control check where labels, chains, and polygons are checked for attribute accuracy. To finalize the data checking process, each coverage is checked using a standardized form by two GIS personnel (a technician and the GIS

manager), and each attribute database is checked using several programs that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and ORACLE (r) and ARC/INFO (r) consistencies. A final review is made by the GIS manager, where the data are written to tape and the metadata are written. After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks. In the process of checking for topological and database consistencies, new IDs and RARNUMs or HUNUMs are also generated. The new IDs are a combination of atlas number, element number, and record number. In addition, the value used to represent the element is modified to reflect the type of feature being mapped. In the case of an element that is normally represented by a point or polygon, a value of 20 is added to the standard element value for mapping of linear features. In the case where an element usually mapped as a polygon is represented by a point, a value of 30 is added to the regular element value. The RARNUMs are also modified to include the atlas number, so multiple atlases can be combined and RARNUMs remain unique. RARNUMs are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUMs are also modified to include the atlas number. ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI_Viewer product are also included on the CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats. The section Spatial_Data_Organization_Information refers to the source files in ARC export format only.

Completeness_Report:

Biological information presented in this atlas was collected and compiled with the assistance of biologists from the U.S. Fish and Wildlife Service, and various other agencies, organizations, and groups. Information collected and depicted on the maps denotes the key biological resources that are most likely at risk in the event of an oil spill. Four major categories, or ELEMENTs, of biological resources were considered during data compilation: birds; fish; invertebrates; and marine mammals. The ELEMENTs generally correspond to the coverage or geographic data layer names. There are also six attribute, or data tables, BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS, that are used to store the complex biological data. The biological points (M_MAMPT) are linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or they can be linked directly using RARNUM. [The ID is a unique combination of the atlas number (for Prince William Sound this is 59), an element specific number (birds are layer 1, fish are layer 2, etc.), and a unique record number. The RARNUM represents a unique combination of species, seasonalities, concentrations, and source information. For each of these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases.] The items in BIORES include: RARNUM, SPECIES_ID, CONC, SEASON_ID, G_SOURCE, S_SOURCE, ELEMENT, EL_SPE, and EL_SPE_SEA. SPECIES_ID is the numeric identifier of each species and is unique within each ELEMENT. CONC is the concentration of the species and can be descriptive (LOW, MEDIUM, HIGH, etc.) or an actual count of the number of individuals or nests associated with a polygon or point. SEASON_ID contains a numeric identifier for the unique monthly presence and life history characteristics of each species at a given location. There can be one seasonality record per species, or the same species can have different monthly presence or breeding activities at different sites. When this occurs, a new record with a different SEASON_ID is referenced. G_SOURCE contains the SOURCE_ID for geographic information, and S_SOURCE contains the SOURCE_ID for seasonality information. Both items link to the SOURCES data table. EL_SPE is a concatenation of ELEMENT and SPECIES_ID and links to other data tables (primarily the SPECIES table). 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): M_MAMPT: pinniped, sea otter, whale. The STATUS data table contains records for each species that is threatened or endangered on state or federal lists. The items include: ELEMENT, SPECIES_ID, STATE (two-letter state abbreviations), S_F (state or federal status), T_E

(threatened or endangered status), DATE_PUB (the date the atlas was published when the given state and federal listings were in effect), and EL_SPE. The SEASONAL data table indicates the presence of a particular species in a particular location by month (JAN-DEC). The BIORES table is linked to the SEASONAL table using the item EL_SPE_SEA (a concatenation of the first letter of the ELEMENT, SPECIES_ID, and SEASON_ID). The BREED data table contains the life stage or life history data for each unique combination of ELEMENT, SPECIES_ID, and SEASON_ID (or EL_SPE_SEA). It contains up to 12 records corresponding to each month of the year that the species is present in that location. The items BREED1-BREED5 will reflect different life activities, depending on the ELEMENT referenced. For M_MAMPT, BREED1 = mating, BREED2 = calving, BREED3 = pupping, and BREED4 = molting. There is no BREED5 activity for M_MAMPT, so this column is populated with a dash (-). The SOURCES data table contains metadata for each biological and human-use source listed in the ESI atlas. The items in SOURCES include: SOURCE_ID; ORIGINATOR (author); DATE_PUB (date of publication); TITLE (title of the data set); DATA_FORMAT (digital type, hardcopy maps, etc.); PUBLICATION (additional citation); SCALE (source scale denominator); and TIME_PERIOD (beginning and ending dates of original data collection). The SOURCES data table is linked to all biological data at the feature plus species-level and human-use data at the feature-level. Due to the complexity of the relational database model, the biological data items are also 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, BREED5, RARNUM, G_SOURCE, S_SOURCE, and BREED. All of these items are the same as their counterparts in the individual files described above, except the BREED1-BREED5 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-BREED5 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, or it may be linked directly from the RARNUM in each of the biology cover's attribute files. As mentioned, BREED_DT is an auxiliary support file to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item. A second supporting data file is SOURCES. This is the same as the source file described above, and the link from the flat file is both G_SOURCE and S_SOURCE. It should be noted that although the flat file eases data query, it is not a normalized database structure, and actual updates performed by the states and other responsible agencies should be done using the relational files.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:
The biological data sets are developed primarily using regional experts who estimate concentration areas. Unlike shorelines, which maintain relative spatial stability through time, the biological data by nature vary in distribution across the landscape. Therefore, the 1:250,000 USGS quadrangles are used as a basemap in gathering the data but the data have "fuzzy" boundaries which must be understood when utilizing this information.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: Doug Wilson
Publication_Date: 1998
Title: Graphical Resource Database

Geospatial_Data_Presentation_Form: Map
Publication_Information:

Publication_Place: Anchorage, Alaska
Publisher: EMCON
Source_Scale_Denominator: 63360
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1992
Ending_Date: 1997
Source_Currentness_Reference: Survey date
Source_Citation_Abbreviation: None
Source_Contribution: Whales, sea lion haulouts
Source_Information:

Source_Citation:

Citation_Information:

Originator: Cathryn J. Frost
Publication_Date: 1997
Title: Monitoring, Habitat Use and Trophic Interactions of Harbor Seals in Prince William Sound, Alaska
Geospatial_Data_Presentation_Form: Spreadsheet
Publication_Information:

Publication_Place: Anchorage, Alaska
Publisher: Alaska Department of Fish and Game
Type_of_Source_Media: Paper
Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1992
Ending_Date: 1996
Source_Currentness_Reference: Monitoring date
Source_Citation_Abbreviation: None
Source_Contribution: Harbor seal haulouts
Source_Information:

Source_Citation:

Citation_Information:

Originator: Dave Withrow
Publication_Date: 1998
Title: Harbor Seal Data Set
Geospatial_Data_Presentation_Form: Spreadsheet
Publication_Information:

Publication_Place: Seattle, Washington
Publisher: National Marine Fisheries Service
Type_of_Source_Media: Disk
Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1996
Ending_Date: 1997
Source_Currentness_Reference: Data collection
Source_Citation_Abbreviation: None
Source_Contribution: Harbor seal haulouts
Source_Information:

Source_Citation:

Citation_Information:

Originator: Brad Smith
Publication_Date: Unpublished material
Title: Harbor Seal and Sea Lion Haulouts
Geospatial_Data_Presentation_Form: Map
Source_Scale_Denominator: 63360
Type_of_Source_Media: Paper
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1999
Source_Currentness_Reference: Contact date
Source_Citation_Abbreviation: None
Source_Contribution: Harbor seal and Sea lion haulouts
Source_Information:

Source_Citation:

Citation_Information:

Originator: John Williams; Dave Sanka
Publication_Date: Unpublished material
Title: Sea Otter Concentration Areas
Geospatial_Data_Presentation_Form: Map
Source_Scale_Denominator: 63360
Type_of_Source_Media: Paper
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1999
Source_Currentness_Reference: Contact date
Source_Citation_Abbreviation: None

Source_Contribution: Sea otter concentration areas
Process_Step:

Process_Description:
All the digital data were checked using both digital and on-screen procedures, plotted, checked by the biological expert, edited to remove any errors, and plotted for review by the regional specialists. The reviewed maps were updated on the computer, checked once again, and plotted at final map scale. A team of specialists reviewed the entire series of maps, checked all data, and made final edits. The data were merged to form the study-wide layers that are described in the document. The data merging included a final quality control check where topological consistency, rules for geography, and database to geography were checked and validated for all relationships.
Process_Date: 20000810
Process_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: NOAA, Office of Response and Restoration
Contact_Person: Jill Petersen
Contact_Address:

Address_Type: Physical address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: jill_petersen@hazmat.noaa.gov.us

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Spatial_Data_Organization_Information:

Direct_Spatial_Reference_Method: Vector
Point_and_Vector_Object_Information:

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Entity Point
Point_and_Vector_Object_Count: 143

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

Geographic:

Latitude_Resolution: 0.00005
Longitude_Resolution: 0.00005
Geographic_Coordinate_Units: Decimal degrees
Geodetic_Model:

Horizontal_Datum_Name: North American Datum of 1927
Ellipsoid_Name: Clarke 1866
Semi-major_Axis: 6378206.4
Denominator_of_Flattening_Ratio: 294.98

Entity_and_Attribute_Information:

Detailed_Description:

Entity_Type:

Entity_Type_Label: Entity Point
Entity_Type_Definition:
Marine mammals depicted as points in the Prince William Sound atlas include pinnipeds (seals and sea lions), whales, and sea otters. For seals and sea lion, major haul-out sites for harbor seals and Steller sea lions are depicted. Although only haul-out sites are mapped, seals can occur throughout the nearshore waters of Prince William Sound. High concentration areas for whales are also depicted in the atlas. Although only certain high concentration areas are depicted, whales are highly mobile species, and can occur throughout most of the waters of Prince William Sound. Humpback and killer whales are common residents of the sound, but other species of whales are also seen in the sound. Gray whales are most commonly found in the migration corridor along the outer coast, but they may occasionally be found in the sound. For sea otters, concentrations are shown where surveys have been conducted. Sea otters are present all year throughout the sound. Many of the whales included in this atlas are protected as threatened or endangered species, and all marine mammals are protected under the Marine Mammal Protection Act of 1972.
Entity_Type_Definition_Source: Research Planning, Inc.
Attribute:

Attribute_Label: ID
Attribute_Definition:
A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas number (59), element number (34), and record number. The following M_MAMPT species are depicted as points in the Prince William Sound data set (SPECIES ID, NAME): 1, Northern (Steller) sea lion; 2, Harbor seal; 4, Killer whale; 7, Sea otter; 13, Humpback whale; 26, Gray whale.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 593400001
Range_Domain_Maximum: 593400143
Beginning_Date_of_Attribute_Values: 200011
Ending_Date_of_Attribute_Values: 200011

Attribute:

Attribute_Label: RARNUM
Attribute_Definition:
An identifier that links directly to the BIORES table or the flat format BIOFILE table.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 59001098
Range_Domain_Maximum: 59001185
Beginning_Date_of_Attribute_Values: 199901
Ending_Date_of_Attribute_Values: 200011

Distribution_Information:

Distributor:

Contact_Information:

Contact_Person_Primary:

Contact_Person: John Kaperick
Contact_Organization: NOAA, Office of Response and Restoration
Contact_Address:

Address_Type: Physical Address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6400
Contact_Facsimile_Telephone: (206) 526-6329
Resource_Description: ESI Atlas for Prince William Sound, Alaska
Distribution_Liability:
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer-input peripherals, or when the physical medium is delivered in damaged condition.
Custom_Order_Process:
Contact NOAA for distribution options (see Distribution_Information).

Metadata_Reference_Information:

Metadata_Date: 200011

Metadata_Review_Date: 200011
Metadata_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Jill Petersen
Contact_Organization: NOAA, Office of Response and Restoration
Contact_Position: GIS Manager
Contact_Address:

Address_Type: Physical Address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: jill_petersen@hazmat.noaa.gov.us
Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998

Prince William Sound, Alaska ESI: INVERT (Invertebrates)

Metadata:

Identification_Information:

Citation:

Citation_Information:

Originator:
National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.
Publication_Date: 200011
Title: Prince William Sound, Alaska ESI: INVERT (Invertebrates)
Edition: Second
Geospatial_Data_Presentation_Form: Atlas
Series_Information:

Series_Name: None
Issue_Identification: Prince William Sound, Alaska
Publication_Information:

Publication_Place: Seattle, Washington
Publisher:
National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington
Other_Citation_Details:
Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.

Description:

Abstract:

This data set comprises the Environmental Sensitivity Index (ESI) data for Prince William Sound, Alaska. ESI data characterize estuarine environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources. This data set contains sensitive biological resource data for invertebrates.

Purpose:

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

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1989
Ending_Date: 1999

Currentness_Reference: Project time span

Status:

Progress: Complete
Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -148.875
East_Bounding_Coordinate: -144.000
North_Bounding_Coordinate: 61.292
South_Bounding_Coordinate: 54.393

Keywords:

Theme:

Theme_Keyword_Thesaurus: None
Theme_Keyword: ESI
Theme_Keyword: Sensitivity maps
Theme_Keyword: Coastal resources
Theme_Keyword: Oil spill planning
Theme_Keyword: Coastal zone management
Theme_Keyword: Invertebrate
Theme_Keyword: Shellfish

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: Prince William Sound
Place_Keyword: Alaska
Place_Keyword: Copper River Delta
Place_Keyword: Blying Sound

Access_Constraints: None

Use_Constraints:

DO NOT USE 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 Data_Set_Credit (below) would be appreciated in products derived from these data.

Browse_Graphic:

Browse_Graphic_File_Name: pwsdatafig.jpg
Browse_Graphic_File_Description:
Relationships between the biology data layers and the attribute files for the Prince William Sound data.
Browse_Graphic_File_Type: JPEG
Data_Set_Credit:
This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.
Native_Data_Set_Environment:
The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20). The following files are included in the data set: bio_lut.e00, biofile.e00, biores.e00, birds.e00, breed.e00, breed_dt.e00, esi.e00, fish.e00, fishl.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, m_mampt.e00, nests.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, socecon.e00, sources.e00, species.e00, status.e00.

Data_Quality_Information:

Attribute_Accuracy:

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.
Logical_Consistency_Report:
The digitization of shoreline types, biological resources, and human-use resources is a complex and highly quality-controlled process. Existing digital shoreline and wetlands data are integrated into a study-wide basemap. The first layer of information digitized is the ESI shoreline classification. The ESI habitat ranking is compiled onto 1:63,360 USGS topographic quadrangles by a geomorphologist. The hardcopy maps are then digitized and checked, using both on-screen and hardcopy reviews. The edited maps are updated, checked once again for completeness and topological and logical consistency. Any errors in the shoreline classification are updated prior to digitization of the biological reference so that there are no slivers in the geographic coordinates. The hardcopy biological information is compiled onto 1:250,000 USGS topographic quadrangles by a biological expert using data from regional specialists in the form of maps, tables, charts, written descriptions of wildlife distributions, and personal interviews. Concurrently, digital data sources are imported, projected, checked for quality control, and integrated into the data structure. The hardcopy data are digitized, checked using both digital and on-screen procedures, integrated with existing data, plotted, and sent out for review by the regional specialists. The edited maps are updated, checked once again, and the final product plotted (at approximately 1:87,000 scale). A team of specialists reviews the entire series of maps, checks all data, and makes final edits. The data are then merged to form the study-wide layers. The data merging includes a final quality control check where labels, chains, and polygons are checked for attribute accuracy. To finalize the data checking process, each coverage is checked using a standardized form by two GIS personnel (a technician and the GIS manager), and each attribute database is checked using several programs that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and ORACLE (r) and ARC/INFO (r) consistencies. A final review is made

by the GIS manager, where the data are written to tape and the metadata are written. After the data are delivered to NOAA, they are again subjected to a number of quality and consistency checks. In the process of checking for topological and database consistencies, new IDs and RARNUMs or HUNUMs are also generated. The new IDs are a combination of atlas number, element number, and record number. In addition, the value used to represent the element is modified to reflect the type of feature being mapped. In the case of an element that is normally represented by a point or polygon, a value of 20 is added to the standard element value for mapping of linear features. In the case where an element usually mapped as a polygon is represented by a point, a value of 30 is added to the regular element value. The RARNUMs are also modified to include the atlas number, so multiple atlases can be combined and RARNUMs remain unique. RARNUMs are redefined on an element basis, so "resource at risk" groupings will contain only a single element. HUNUMs are also modified to include the atlas number. ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI_Viewer product are also included on the CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats. The section Spatial_Data_Organization_Information refers to the source files in ARC export format only.

Completeness_Report:

Biological information presented in this atlas was collected and compiled with the assistance of biologists from the U.S. Fish and Wildlife Service, Alyeska Pipeline Company, Alaska Department of Fish and Game, and various other agencies, organizations, and groups. Information collected and depicted on the maps denotes the key biological resources that are most likely at risk in the event of an oil spill. Four major categories, or ELEMENTs, of biological resources were considered during data compilation: birds; fish; invertebrates; and marine mammals. The ELEMENTs generally correspond to the coverage or geographic data layer names. There are also six attribute, or data tables, BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS, that are used to store the complex biological data. The biological polygons (INVERT) are linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or they can be linked directly using RARNUM. [The ID is a unique combination of the atlas number (for Prince William Sound this is 59), an element specific number (birds are layer 1, fish are layer 2, etc.), and a unique record number. The RARNUM represents a unique combination of species, seasonalities, concentrations, and source information. For each of these groupings, a number is generated. That number is concatenated with the atlas number to create a "resource at risk" number that is unique across atlases.] The items in BIORES include: RARNUM, SPECIES_ID, CONC, SEASON_ID, G_SOURCE, S_SOURCE, ELEMENT, EL_SPE, and EL_SPE_SEA. SPECIES_ID is the numeric identifier of each species and is unique within each ELEMENT. CONC is the concentration of the species and can be descriptive (LOW, MEDIUM, HIGH, etc.) or an actual count of the number of individuals or nests associated with a polygon or point. SEASON_ID contains a numeric identifier for the unique monthly presence and life history characteristics of each species at a given location. There can be one seasonality record per species, or the same species can have different monthly presence or breeding activities at different sites. When this occurs, a new record with a different SEASON_ID is referenced. G_SOURCE contains the SOURCE_ID for geographic information, and S_SOURCE contains the SOURCE_ID for seasonality information. Both items link to the SOURCES data table. EL_SPE is a concatenation of ELEMENT and SPECIES_ID and links to other data tables (primarily the SPECIES table). 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): INVERT: crab. The STATUS data table contains records for each species that is threatened or endangered on state or federal lists. The items include: ELEMENT, SPECIES_ID, STATE (two-letter state abbreviations), S_F (state or federal status), T_E (threatened or endangered status), DATE_PUB (the date the atlas was published when the given state and federal listings were in effect), and EL_SPE. The SEASONAL data table indicates the presence of a particular species in a

particular location by month (JAN-DEC). The BIORES table is linked to the SEASONAL table using the item EL_SPE_SEA (a concatenation of the first letter of the ELEMENT, SPECIES_ID, and SEASON_ID). The BREED data table contains the life stage or life history data for each unique combination of ELEMENT, SPECIES_ID, and SEASON_ID (or EL_SPE_SEA). It contains up to 12 records corresponding to each month of the year that the species is present in that location. The items BREED1-BREED5 will reflect different life activities, depending on the ELEMENT referenced. For INVERT, BREED1 = spawn/mate, BREED2 = eggs, BREED3 = larvae, and BREED4 = juveniles, BREED5 = adults. The SOURCES data table contains metadata for each biological and human-use source listed in the ESI atlas. The items in SOURCES include: SOURCE_ID; ORIGINATOR (author); DATE_PUB (date of publication); TITLE (title of the data set); DATA_FORMAT (digital type, hardcopy maps, etc.); PUBLICATION (additional citation); SCALE (source scale denominator); and TIME_PERIOD (beginning and ending dates of original data collection). The SOURCES data table is linked to all biological data at the feature plus species-level and human-use data at the feature-level. Due to the complexity of the relational database model, the biological data items are also 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, BREED5, RARNUM, G_SOURCE, S_SOURCE, and BREED. All of these items are the same as their counterparts in the individual files described above, except the BREED1-BREED5 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-BREED5 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, or it may be linked directly from the RARNUM in each of the biology cover's attribute files. As mentioned, BREED_DT is an auxiliary support file to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item. A second supporting data file is SOURCES. This is the same as the source file described above, and the link from the flat file is both G_SOURCE and S_SOURCE. It should be noted that although the flat file eases data query, it is not a normalized database structure, and actual updates performed by the states and other responsible agencies should be done using the relational files.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

The biological data sets are developed primarily using regional experts who estimate concentration areas. Unlike shorelines, which maintain relative spatial stability through time, the biological data by nature vary in distribution across the landscape. Therefore, the 1:250,000 USGS quadrangles are used as a basemap in gathering the data but the data have "fuzzy" boundaries which must be understood when utilizing this information.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: Matthew Eagleton
Publication_Date: 1999
Title: Essential Fish Habitat
Geospatial_Data_Presentation_Form: Map
Publication_Information:

Publication_Place: Anchorage, Alaska
Publisher: Alaska Department of Fish and Game
Type_of_Source_Media: Electronic bulletin board
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: Unknown
Source_Currentness_Reference: Date of publication
Source_Citation_Abbreviation: None
Source_Contribution: Crab distribution and concentration
Process_Step:

Process_Description:
All the digital data were checked using both digital and on-screen procedures, plotted, checked by the biological expert, edited to remove any errors, and plotted for review by the regional specialists. The reviewed maps were updated on the computer, checked once again, and plotted at final map scale. A team of specialists reviewed the entire series of maps, checked all data, and made final edits. The data were merged to form the study-wide layers that are described in the document. The data merging included a final quality control check where topological consistency, rules for geography, and database to geography were checked and validated for all relationships.
Process_Date: 20000810
Process_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: NOAA, Office of Response and Restoration
Contact_Person: Jill Petersen
Contact_Address:

Address_Type: Physical address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: jill_petersen@hazmat.noaa.gov.us

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Spatial_Data_Organization_Information:

Direct_Spatial_Reference_Method: Vector
Point_and_Vector_Object_Information:

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: GT-polygon composed of rings
Point_and_Vector_Object_Count: 1545
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Area point
Point_and_Vector_Object_Count: 1545
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Complete chain
Point_and_Vector_Object_Count: 2511
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 363854
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 2386

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

Geographic:

Latitude_Resolution: 0.00005
Longitude_Resolution: 0.00005
Geographic_Coordinate_Units: Decimal degrees
Geodetic_Model:

Horizontal_Datum_Name: North American Datum of 1927
Ellipsoid_Name: Clarke 1866
Semi-major_Axis: 6378206.4
Denominator_of_Flattening_Ratio: 294.98

Entity_and_Attribute_Information:

Detailed_Description:

Entity_Type:

Entity_Type_Label: GT-polygon
Entity_Type_Definition:
King crab, tanner crab and dungeness crab can be found throughout the sound. Depicted on the maps are the concentration areas for these species. National Marine Fisheries Service Essential Fish Habitat (1999) report.
Entity_Type_Definition_Source: Research Planning, Inc.
Attribute:

Attribute_Label: ID
Attribute_Definition:
A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas number (59), element number (7), and record number. ID values of 9999 are holes in polygons and do not contain information. The following INVERT species are found in the Prince William Sound ESI data set (SPECIES ID, NAME): 14 Dungeness crab, 39 Red king crab, 40 Tanner crab, 75 Golden king crab, 192 Blue king crab, 203 Grooved tanner crab
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 590700002
Range_Domain_Maximum: 590701536
Beginning_Date_of_Attribute_Values: 200011
Ending_Date_of_Attribute_Values: 200011
Attribute:

Attribute_Label: RARNUM
Attribute_Definition:
An identifier that links directly to the BIORES table or the flat format BIOFILE table.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 59001081
Range_Domain_Maximum: 59001197
Beginning_Date_of_Attribute_Values: 199901
Ending_Date_of_Attribute_Values: 200011

Distribution_Information:

Distributor:

Contact_Information:

Contact_Person_Primary:

Contact_Person: John Kaperick
Contact_Organization: NOAA, Office of Response and Restoration
Contact_Address:

Address_Type: Physical Address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6400
Contact_Facsimile_Telephone: (206) 526-6329

Resource_Description: ESI Atlas for Prince William Sound, Alaska
Distribution_Liability:
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer-input peripherals, or when the physical medium is delivered in damaged condition.
Custom_Order_Process:
Contact NOAA for distribution options (see Distribution_Information).

Metadata_Reference_Information:

Metadata_Date: 200011
Metadata_Review_Date: 200011
Metadata_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Jill Petersen
Contact_Organization: NOAA, Office of Response and Restoration
Contact_Position: GIS Manager
Contact_Address:

Address_Type: Physical Address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: jill_petersen@hazmat.noaa.gov.us
Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998

Prince William Sound, Alaska ESI: SOCECON (Socioeconomic Points)

Metadata:

Identification_Information:

Citation:

Citation_Information:

Originator:
National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.
Publication_Date: 200011
Title: Prince William Sound, Alaska ESI: SOCECON (Socioeconomic Points)
Edition: Second
Geospatial_Data_Presentation_Form: Atlas
Series_Information:

Series_Name: None
Issue_Identification: Prince William Sound, Alaska
Publication_Information:

Publication_Place: Seattle, Washington
Publisher:
National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington
Other_Citation_Details:
Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.

Description:

Abstract:

This data set comprises the Environmental Sensitivity Index (ESI) data for Prince William Sound, Alaska. ESI data characterize estuarine environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources. This data set contains human-use resource data.

Purpose:

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

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1989
Ending_Date: 1999

Currentness_Reference: Project time span

Status:

Progress: Complete
Maintenance_and_Update_Frequency: None Scheduled

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -148.875
East_Bounding_Coordinate: -144.000
North_Bounding_Coordinate: 61.292
South_Bounding_Coordinate: 54.393

Keywords:

Theme:

Theme_Keyword_Thesaurus: None
Theme_Keyword: Sensitivity maps
Theme_Keyword: ESI
Theme_Keyword: Coastal resources
Theme_Keyword: Oil spill planning
Theme_Keyword: Coastal zone management
Theme_Keyword: Socioeconomic
Theme_Keyword: Human use
Theme_Keyword: Airport
Theme_Keyword: Aquaculture
Theme_Keyword: Hatchery
Theme_Keyword: Marina
Theme_Keyword: Anchorage

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: Prince William Sound
Place_Keyword: Alaska
Place_Keyword: Copper River Delta
Place_Keyword: Blying Sound

Access_Constraints: None

Use_Constraints:

DO NOT USE 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 Data_Set_Credit (below) would be appreciated in products derived from these data.

Browse_Graphic:

Browse_Graphic_File_Name: pwsdatafig.jpg

Browse_Graphic_File_Description:

Relationships between the biology data layers and the attribute files for the Prince William Sound data.

Browse_Graphic_File_Type: JPEG

Data_Set_Credit:

This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington; State of Alaska Department of Environmental Conservation; Exxon Valdez Oil Spill Trustee Council; United States Coast Guard; Prince William Sound Regional Citizens' Advisory Council; and Prince William Sound Oil Spill Recovery Institute.

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 8.0.2) and ORACLE(r) RDBMS (version 8.0.5.0.0). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.10.20). The following files are included in the data set: bio_lut.e00, biofile.e00, biores.e00, birds.e00, breed.e00, breed_dt.e00, esi.e00, fish.e00, fishl.e00, hydro.e00, index.e00, invert.e00, m_mammal.e00, m_mampt.e00, nests.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, socecon.e00, sources.e00, species.e00, status.e00.

Data_Quality_Information:

Attribute_Accuracy:

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.

Logical_Consistency_Report:

The human-use resources were obtained in either digital format or in hardcopy format on 1:63,360 and 1:250,000 scale maps. Under this project, new digital data sources were imported, projected, checked for quality control, and integrated into the spatial data structure (for selected resources). The data were checked using both digital and on-screen procedures. To finalize the data checking process, each coverage is checked using a standardized form by two GIS personnel (a technician and the GIS manager), and each attribute database is checked using several programs that test the files for missing or duplicate data, rules for proper coding, GIS topological consistencies (such as dangles, unnecessary nodes, etc.), and ORACLE(r) to ARC/INFO(r) consistencies. A final review is made by the GIS manager, where the data are written to tape and the metadata are written. ESI data are processed into multiple formats to make them useful to a wider community of GIS/mapping users. Distribution formats include ARC export, MOSS and Shape files, and MARPLOT map folders. An ArcView ESI project and ESI_Viewer product are also included on the CDs for ease of use of the ESI data. The database files are distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats. The section Spatial_Data_Organization_Information refers to the source files in ARC export format only.

Completeness_Report:

Several human-use, or socioeconomic, features are included in ESI atlases. Entity points are digitized into the data layer SOCECON. The data set is linked to the data table SOC_DAT using the SOC_LUT lookup table and the items HUNUM and ID. HUNUM is a unique reference number concatenated with the atlas number (for Prince William Sound this is 59). ID is a concatenation of atlas number (59), element number (SOCECON = 10), and a unique record number. The TYPE item for entity points may contain the following values: Airport, A; Aquaculture, AQ; Hatchery, S (for this atlas only); Marine/Anchorage, M. The table SOC_DAT contains the human-use number (HUNUM), feature type (TYPE), name of the facility (NAME), owner/manager or contact person (CONTACT), telephone number (PHONE), geographic source (G_SOURCE), and attribute source (A_SOURCE). Detailed contact information is only included for select management features, where available. Source information is included for all features.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:
The ESI data use USGS 1:63,360 topographic quadrangles as the basemap. It is estimated that the ESI shoreline classification has a minimum mapping unit of 100 feet.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: Doug Wilson
Publication_Date: 1998
Title: Graphical Resource Database
Geospatial_Data_Presentation_Form: Map
Publication_Information:

Publication_Place: Anchorage, Alaska
Publisher: EMCON
Source_Scale_Denominator: 63360
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1992
Ending_Date: 1997
Source_Currentness_Reference: Survey date
Source_Citation_Abbreviation: None
Source_Contribution: Marinas, Airport, Hatcheries, Aquaculture
Source_Information:

Source_Citation:

Citation_Information:

Originator: Jacqui Michel; Research Planning, Inc.
Publication_Date: Unpublished material
Title: ESI Overflight

Geospatial_Data_Presentation_Form: Map
Source_Scale_Denominator: 63360
Type_of_Source_Media: Paper
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1999
Source_Currentness_Reference: Date of overflight
Source_Citation_Abbreviation: None
Source_Contribution: Marinas, Aquaculture
Process_Step:

Process_Description:
All the digital data were checked using both digital and on-screen procedures, plotted, checked by the biological expert, edited to remove any errors, and plotted for review by the regional specialists. The reviewed maps were updated on the computer, checked once again, and plotted at final map scale. A team of specialists reviewed the entire series of maps, checked all data, and made final edits. The data were merged to form the study-wide layers that are described in the document. The data merging included a final quality control check where topological consistency, rules for geography, and database to geography were checked and validated for all relationships.
Process_Date: 20000810
Process_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: NOAA, Office of Response and Restoration
Contact_Person: Jill Petersen
Contact_Address:

Address_Type: Physical address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: jill_petersen@hazmat.noaa.gov.us

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Spatial_Data_Organization_Information:

Direct_Spatial_Reference_Method: Vector
Point_and_Vector_Object_Information:

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Entity point
Point_and_Vector_Object_Count: 39

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

Geographic:

Latitude_Resolution: 0.00005
Longitude_Resolution: 0.00005
Geographic_Coordinate_Units: Decimal degrees
Geodetic_Model:

Horizontal_Datum_Name: North American Datum of 1927
Ellipsoid_Name: Clarke 1866
Semi-major_Axis: 6378206.4
Denominator_of_Flattening_Ratio: 294.98

Entity_and_Attribute_Information:

Detailed_Description:

Entity_Type:

Entity_Type_Label: Entity point
Entity_Type_Definition:
Airport-Location of airports, airfields, landing strips, etc., whether they are manned or unmanned. These sites were mapped during the 1999 overflight. Aquaculture-Location of aquaculture sites and facilities. When known, the site name, owner/manager, emergency contact name, and telephone number are provided on the data tables for each map. The locations provided by the SERVS database were validated during the overflight. Hatchery-Location of salmon hatchery. When known, the site name, owner/manager, emergency contact name, and telephone number are provided on the data tables for each map. The location was provided by the SERVS database, and the contact information came from Prince William Sound Aquaculture Corporation. Marina/Anchorage-Location of marinas and anchorages. This information was gathered during the 1999 overflight observations, digital, and expert sources.
Entity_Type_Definition_Source: Research Planning, Inc.
Attribute:

Attribute_Label: Type
Attribute_Definition:
The human-use features depicted on the maps are those that could be impacted by an oil spill or could provide access for response operations. TYPE identifies a 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.

Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: A
Enumerated_Domain_Value_Definition: Airport
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: AQ
Enumerated_Domain_Value_Definition: Aquaculture
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: S
Enumerated_Domain_Value_Definition: Hatchery (note: This definition of "S" is for Prince William Sound Atlas only)
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: M
Enumerated_Domain_Value_Definition: Marina/Anchorage
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Beginning_Date_of_Attribute_Values: 1999
Ending_Date_of_Attribute_Values: 1999
Attribute:

Attribute_Label: ID
Attribute_Definition:
A unique identifier that links to the SOC_LUT table. ID is a concatenation of atlas number (59), element number (10), and record number.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Maximum: 591000001
Range_Domain_Minimum: 591000039
Beginning_Date_of_Attribute_Values: 2000
Ending_Date_of_Attribute_Values: 2000
Attribute:

Attribute_Label: HUNUM
Attribute_Definition: An identifier that links directly to the SOC_DAT table.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Maximum: 59000001

Range_Domain_Minimum: 59000010
Beginning_Date_of_Attribute_Values: 2000
Ending_Date_of_Attribute_Values: 2000

Distribution_Information:

Distributor:

Contact_Information:

Contact_Person_Primary:

Contact_Person: John Kaperick
Contact_Organization: NOAA, Office of Response and Restoration
Contact_Address:

Address_Type: Physical Address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6400
Contact_Facsimile_Telephone: (206) 526-6329
Resource_Description: ESI Atlas for Prince William Sound, Alaska
Distribution_Liability:
Although these data have been processed successfully on a computer system at the National Oceanic and Atmospheric Administration, no warranty, expressed or implied, is made by NOAA regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. NOAA warrants the delivery of this product in computer-readable format, and will offer a replacement copy of the product when the product is determined unreadable by computer-input peripherals, or when the physical medium is delivered in damaged condition.
Custom_Order_Process:
Contact NOAA for distribution options (see Distribution_Information).

Metadata_Reference_Information:

Metadata_Date: 200011
Metadata_Review_Date: 200011
Metadata_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Jill Petersen
Contact_Organization: NOAA, Office of Response and Restoration
Contact_Position: GIS Manager
Contact_Address:

Address_Type: Physical Address
Address: 7600 Sand Point Way N.E.
City: Seattle
State_or_Province: Washington
Postal_Code: 98115-6349
Contact_Voice_Telephone: (206) 526-6944
Contact_Facsimile_Telephone: (206) 526-6329
Contact_Electronic_Mail_Address: jill_petersen@hazmat.noaa.gov.us
Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998

Relationship between biology data layers and attribute files