North Slope, Alaska ESI: 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 and the Alaska Department of Environmental Conservation
Publication_Date: 200006
Title: North Slope, Alaska ESI: Hydrology
Edition: First
Geospatial_Data_Presentation_Form: Atlas
Series_Information:

Series_Name: None
Issue_Identification: North Slope, 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 and the Alaska Department of Environmental Conservation

Description:

Abstract:
This data set comprises the Environmental Sensitivity Index (ESI) data for the North Slope of Alaska from Point Barrow to the Canadian Border. 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.
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: -156.581
East_Bounding_Coordinate: -140.309
North_Bounding_Coordinate: 71.479
South_Bounding_Coordinate: 67.917

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: North Slope, Alaska
Place_Keyword: Point Barrow
Place_Keyword: Beaufort sea
Place_Keyword: NPR-A
Place_Keyword: Arctic NWR
Place_Keyword: Prudhoe Bay

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.

Data_Set_Credit:

This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and the Alaska Department of Environmental Conservation

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 7.2.1) and ORACLE(r) RDBMS (version 6.0.36.1.1). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with

UNIX operating system (HP-UX Release A.09.01). The following files are included in the data set: bio_lut.e00, biofile.e00, biores.e00, birds.e00, breed.e00, breed_dt.e00, esi.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, socecon.e00, sources.e00, species.e00, status.e00, t_mammal.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:
Digital hydrography data were obtained from various sources. These data were not checked for accuracy; however, minimal edge matching was done on the imported data and they were cleaned to be topologically correct. 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 was checked using a standardized form by two GIS personnel (a technician and the GIS manager), and each attribute database was 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 was made by the GIS manager, where the data were written to tape and the metadata were written.

Completeness_Report:
Digital hydrography was obtained from various sources (see Source_Information). This shoreline was based on 1:63,360 USGS topographical quadrangles. The hydrography layer was used as is, with little or no effort to correct any problems in the spatial data.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:
The hydrology data uses USGS 1:63,360 topographic quadrangles as the base map. It is estimated that the hydrology has an accuracy of 100 feet.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: K.Ambrosius
Publication_Date: 1998
Title: BP's Hydrology polygons
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Anchorage, AK
Publisher: BP Exploration (Alaska), Inc

Source_Scale_Denominator: 63360
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:

Time_Period_Information:

Multiple_Dates/Times:

Single_Date/Time:

Calendar_Date: 1954
Single_Date/Time:

Calendar_Date: 1955
Single_Date/Time:

Calendar_Date: 1993
Single_Date/Time:

Calendar_Date: 1994
Single_Date/Time:

Calendar_Date: 1995
Source_Currentness_Reference: Content time period
Source_Citation_Abbreviation: None
Source_Contribution: Hydrology arcs and polygons
Source_Information:

Source_Citation:

Citation_Information:

Originator: D. Bieganski
Publication_Date: 1997
Title: BLM NPR-A IAP/EIS
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Anchorage, AK
Publisher: U.S. DOI BLM Northern District Office
Source_Scale_Denominator: 63360
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1954
Ending_Date: 1993
Source_Currentness_Reference: Content time period
Source_Citation_Abbreviation: None
Source_Contribution: Hydrology arcs and polygons
Source_Information:

Source_Citation:

Citation_Information:

Originator: RPI
Publication_Date: 1990
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: Hydrology Arcs
Source_Information:

Source_Citation:

Citation_Information:

Originator: USGS DLG's
Publication_Date: 1993-1999
Title: USGS DLG's
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Anchorage, AK
Publisher: USGS
Source_Scale_Denominator: 63360
Type_of_Source_Media: Online
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: Varies
Source_Currentness_Reference: Content time period
Source_Citation_Abbreviation: None
Source_Contribution: Hydrology arcs and polygons
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: 1997-199909
Process_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

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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: 25529
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Area point
Point_and_Vector_Object_Count: 25529
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Complete chain
Point_and_Vector_Object_Count: 83020
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 1657821
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Label point
Point_and_Vector_Object_Count: 127
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Node, planar graph

Point_and_Vector_Object_Count: 77034

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 socio-economic 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: 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: S
Enumerated_Domain_Value_Definition: Shoreline
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Beginning_Date_of_Attribute_Values: 199811
Ending_Date_of_Attribute_Values: 199906
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: British Petroleum's HYD_ARC coverage
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 3
Enumerated_Domain_Value_Definition: BLM's NSB/LAKE coverage
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 4
Enumerated_Domain_Value_Definition: BLM's AK_OUTPOLY6 coverage
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 5
Enumerated_Domain_Value_Definition: BLM's NSB/NRIV coverage
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 7
Enumerated_Domain_Value_Definition: USGS/BRD's DLGHYD coverage
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 12
Enumerated_Domain_Value_Definition: RPI's INDEX coverage
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 13
Enumerated_Domain_Value_Definition: USGS DLG Hydro
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Beginning_Date_of_Attribute_Values: 199811
Ending_Date_of_Attribute_Values: 199906
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 socio-economic 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: 199811
Ending_Date_of_Attribute_Values: 199906

Distribution_Information:

Distributor:

Contact_Information:

Contact_Person_Primary:

Contact_Person: John Kaperick
Contact_Organization: NOAA, Office of Response and Restoratio
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 North Slope, 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: 200006
Metadata_Review_Date: 200006
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

North slope, Alaska ESI: Environmentally Sensitive Areas

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 and the Alaska Department of Environmental Conservation
Publication_Date: 199909
Title: North slope, Alaska ESI: Environmentally Sensitive Areas
Edition: First
Geospatial_Data_Presentation_Form: Atlas
Series_Information:

Series_Name: None
Issue_Identification: North Slope, 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 and the Alaska Department of Environmental Conservation

Description:

Abstract:
This data set comprises the Environmental Sensitivity Index (ESI) data for the North Slope of Alaska from Point Barrow to the Canadian Border. 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.

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: -156.581
East_Bounding_Coordinate: -140.309
North_Bounding_Coordinate: 71.479
South_Bounding_Coordinate: 67.917

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: North Slope, Alaska
Place_Keyword: Point Barrow
Place_Keyword: Beaufort sea
Place_Keyword: NPR-A
Place_Keyword: Arctic NWR
Place_Keyword: Prudhoe Bay

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.

Data_Set_Credit:

This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and the Alaska Department of Environmental Conservation

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 7.2.1) and ORACLE(r) RDBMS (version 6.0.36.1.1). The hardware

configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.09.01). The following files are included in the data set: bio_lut.e00, biofile.e00, biores.e00, birds.e00, breed.e00, breed_dt.e00, esi.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, socecon.e00, sources.e00, species.e00, status.e00, t_mammal.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:

Digital ESI shorelines were obtained from BP Exploration (Alaska) and included in the product. However, no effort was made to match up the digital ESI shoreline with the hydrography basemaps. 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 and human-use layers. 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 1:250,000 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. 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 also distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats. The section Spatial_Data_Organization_Information refers to the source files in ARC export format only.

Completeness_Report:

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.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

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

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: K. Ambrosius
Publication_Date: 1998
Title: BP's ESI Coverage
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Anchorage, AK
Publisher: BP Exploration (Alaska), Inc

Source_Scale_Denominator: 63360
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1997

Source_Currentness_Reference: Content time period

Source_Citation_Abbreviation: None
Source_Contribution: Hydrology arcs and polygons
Source_Information:

Source_Citation:

Citation_Information:

Originator: D. Bieganski
Publication_Date: 1997
Title: BLM NPR-A IAP/EIS
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Anchorage, AK
Publisher: U.S. DOI BLM Northern District Office
Source_Scale_Denominator: 63360
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1954
Ending_Date: 1993
Source_Currentness_Reference: Content time period
Source_Citation_Abbreviation: None
Source_Contribution: Hydrology arcs and polygons
Source_Information:

Source_Citation:

Citation_Information:

Originator: USFWS
Publication_Date: 1999
Title: Coastal Marshes of Arctic NWR
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Fairbanks, AK
Publisher: USFWS
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: Content time period
Source_Citation_Abbreviation: None
Source_Contribution: Marsh polygons
Source_Information:

Source_Citation:

Citation_Information:

Originator: USGS DLG's
Publication_Date: 1999
Title: USGS DLG's
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Anchorage, AK
Publisher: USGS
Source_Scale_Denominator: 63360
Type_of_Source_Media: Online
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: Varies
Source_Currentness_Reference: Content time period
Source_Citation_Abbreviation: None
Source_Contribution: Hydrology arcs and polygons
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: 1997-199909
Process_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

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: 952
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Area point
Point_and_Vector_Object_Count: 952
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Complete chain
Point_and_Vector_Object_Count: 2497
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 204975
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 2539

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 1997, by Owens Coastal Consulting.
Entity_Type_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: ESI
Attribute_Definition:
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 North Slope, Alaska are listed below in order of increasing sensitivity to spilled oil: 3A) Fine- to Medium-grained Sand Beaches, 3C) Tundra Cliffs, 5) Mixed Sand and Gravel Beaches, 6A) Gravel Beaches, 7) Exposed Tidal Flats, 8B) Sheltered, Solid Man-made Structures, 8E) Peat Shorelines, 9A) Sheltered Tidal Flats, 10A) Salt- and Brackish- water Marshes, 10E) Inundated Low-lying Tundra, U) Unranked. The item ESI contains values according to the ESI ranking of the shorelines and polygons. The ESI rankings progress from low to high susceptibility to oil spills. In many cases, the shorelines are also ranked with multiple codes such as 10E/7. The first number is the most landward shoreline type, salt marsh, with exposed tidal flats being the shoreline type closest to the water.
Attribute_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: 3C
Enumerated_Domain_Value_Definition: Tundra Cliffs
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: 6A
Enumerated_Domain_Value_Definition: Gravel Beaches
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: 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: 8E
Enumerated_Domain_Value_Definition: Peat Shorelines
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: 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/3C
Enumerated_Domain_Value_Definition: Salt- and Brackish- Water Marshes/Tundra Cliffs
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/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/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/8E
Enumerated_Domain_Value_Definition: Salt- and Brackish- Water Marshes/Peat Shoreline
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/10E
Enumerated_Domain_Value_Definition: Salt- and Brackish- Water Marshes/Inundated Low-lying Tundra
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 10E
Enumerated_Domain_Value_Definition: Inundated Low-lying Tundra
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: U
Enumerated_Domain_Value_Definition: Unranked
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Beginning_Date_of_Attribute_Values: 199811
Ending_Date_of_Attribute_Values: 199906

Attribute:

Attribute_Label: Line
Attribute_Definition: Type of geographical feature
Attribute_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: 199811
Ending_Date_of_Attribute_Values: 199906

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: British Petroleum's HYD_ARC coverage
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 3
Enumerated_Domain_Value_Definition: BLM's NSB/LAKE coverage
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 4
Enumerated_Domain_Value_Definition: BLM's AK_OUTPOLY6 coverage
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 13
Enumerated_Domain_Value_Definition: USGS DLG Hydro
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 14
Enumerated_Domain_Value_Definition: USFWS Marsh Arcs
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.

Beginning_Date_of_Attribute_Values: 199811
Ending_Date_of_Attribute_Values: 199906

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: 199811
Ending_Date_of_Attribute_Values: 199906

Detailed_Description:

Entity_Type:

Entity_Type_Label: GT Polygon

Entity_Type_Definition:
The data layer ESI contains polygonal (GT-Polygon) 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 character item ESI contains values according to the ESI ranking of the polygons. The ESI rankings progress from low to high susceptibility to oil spills. The ESI rankings of polygons are similar to the ESI rankings of shorelines (see Complete Chain attribute ESI).
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 10A
Enumerated_Domain_Value_Definition: Salt- Brackish- Water Marshes
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: U
Enumerated_Domain_Value_Definition: Unranked
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Beginning_Date_of_Attribute_Values: 199811
Ending_Date_of_Attribute_Values: 199906
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: 199811
Ending_Date_of_Attribute_Values: 199906

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 North Slope, 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: 200006
Metadata_Review_Date: 200006
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

North Slope, 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 and the Alaska Department of Environmental Conservation
Publication_Date: 200006
Title: North Slope, Alaska ESI: Index
Edition: First
Geospatial_Data_Presentation_Form: Atlas
Series_Information:

Series_Name: None
Issue_Identification: North Slope, 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 and the Alaska Department of Environmental Conservation

Description:

Abstract:
This data set comprises the Environmental Sensitivity Index (ESI) data for the North Slope of Alaska from Point Barrow to the Canadian Border. 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.
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: -156.581
East_Bounding_Coordinate: -140.309
North_Bounding_Coordinate: 71.479
South_Bounding_Coordinate: 67.917

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: Index

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: North Slope, Alaska
Place_Keyword: Point Barrow
Place_Keyword: Beaufort sea
Place_Keyword: NPR-A
Place_Keyword: Arctic NWR
Place_Keyword: Prudhoe Bay

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.

Data_Set_Credit:

This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and the Alaska Department of Environmental Conservation.

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 7.2.1) and ORACLE(r) RDBMS (version 6.0.36.1.1). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with

UNIX operating system (HP-UX Release A.09.01). The following files are included in the data set: bio_lut.e00, biofile.e00, biores.e00, birds.e00, breed.e00, breed_dt.e00, esi.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, socecon.e00, sources.e00, species.e00, status.e00, t_mammal.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 data are written to tape and metadata are written.

Completeness_Report:
The INDEX map coverage was generated based on the ability to cover the entire study area in four 1:250,00 scale maps, with map size being limited to under 36x36 inches. As a result of the angle of orientation of each of the maps, there is overlap between each of the indexes. In the INDEX coverage, the overlapping polygons' attributes identify them as belonging to each of the individual maps.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: RPI
Publication_Date: 1999
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: 1997-199909
Process_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

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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: 7
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Area point
Point_and_Vector_Object_Count: 7

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Complete chain
Point_and_Vector_Object_Count: 12
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 461
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 6

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 4.

Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 1
Range_Domain_Maximum: 4
Beginning_Date_of_Attribute_Values: 199811
Ending_Date_of_Attribute_Values: 199906
Attribute:

Attribute_Label: Topo-name
Attribute_Definition:
Topographic map names were not used in this product because the maps did not correspond to topographic maps.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Not Applicable
Enumerated_Domain_Value_Definition: Not Applicable
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Beginning_Date_of_Attribute_Values: 199811
Ending_Date_of_Attribute_Values: 199906
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: 250,000
Enumerated_Domain_Value_Definition: Map scale = 1:250,000
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Beginning_Date_of_Attribute_Values: 199811
Ending_Date_of_Attribute_Values: 199906
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: 199811
Ending_Date_of_Attribute_Values: 199906
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: 36,34.5
Enumerated_Domain_Value_Definition: Pagesize = 36" by 34.5"
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 34.5,36
Enumerated_Domain_Value_Definition: Pagesize = 34.5" by 36"
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Beginning_Date_of_Attribute_Values: 199811
Ending_Date_of_Attribute_Values: 199906

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 North Slope, 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: 200006
Metadata_Review_Date: 200006
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

North Slope, 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 and the Alaska Department of Environmental Conservation
Publication_Date: 200006
Title: North Slope, Alaska ESI: Birds
Edition: First
Geospatial_Data_Presentation_Form: Atlas
Series_Information:

Series_Name: None
Issue_Identification: North Slope, 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 and the Alaska Department of Environmental Conservation

Description:

Abstract:
This data set comprises the Environmental Sensitivity Index (ESI) data for the North Slope of Alaska from Point Barrow to the Canadian Border. 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.
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: -156.581
East_Bounding_Coordinate: -140.309
North_Bounding_Coordinate: 71.479
South_Bounding_Coordinate: 67.917

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: Bird

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: North Slope, Alaska
Place_Keyword: Point Barrow
Place_Keyword: Beaufort sea
Place_Keyword: NPR-A
Place_Keyword: Arctic NWR
Place_Keyword: Prudhoe Bay

Access_Constraints: None

Use_Constraints:

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

Data_Set_Credit:

This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and the Alaska Department of Environmental Conservation

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 7.2.1) and ORACLE(r) RDBMS (version 6.0.36.1.1). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with

UNIX operating system (HP-UX Release A.09.01). The following files are included in the data set: bio_lut.e00, biofile.e00, biores.e00, birds.e00, breed.e00, breed_dt.e00, esi.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, socecon.e00, sources.e00, species.e00, status.e00, t_mammal.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 and human-use layers. 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 1:250,000 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. 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 also distributed both in the NOAA

standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats. 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. Five major categories, or ELEMENTs, of biological resources were considered during data compilation: birds; fish; habitats; marine mammals; and terrestrial mammals. The ELEMENTs generally correspond to the coverage or geographic data layer names. There are also six attribute, or data tables, BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS, that are used to store the complex biological data. The biological polygon coverage (BIRDS) is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or it can be linked directly using RARNUM. [The ID is a unique combination of the atlas number (for North Slope this is 70), 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), the date the list of Natural Heritage Program (NHP) ranks was published (DATE_PUB), biological element (ELEMENT), biological subelement (SUBELEMENT), and the NHP global conservation status rank. The item SUBELEMENT refers to the grouping of the species: (ELEMENT, subelement): BIRD: 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, and EL_SPE. The SEASONAL data table stores the monthly presence of each species where each species is defined as three-character monthly abbreviations. The BIORES table is linked to the SEASONAL table using either the combination of SPECIES_ID, ELEMENT, and SEASON_ID items, or the item EL_SPE_SEA, which contains the concatenation of these items. The BREED data table contains the life stage or life history data for each unique combination of ELEMENT, SPECIES_ID, and SEASON_ID (or EL_SPE_SEA), and up to 12 records (corresponding to each month of the year) can have different attributes and therefore separate records. The categories for each element of the items BREED1 through BREED5 are: BIRD: nesting, laying, hatching, fledging (BREED1 through BREED4 respectively). 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 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 to link to RARNUM, or it may be linked directly to the RARNUM in each of the biology cover's attribute files. As mentioned, BREED_DT is an auxiliary support file to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item. A second supporting data file is SOURCE. 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 base map 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: W. Horowitz, MMS
Publication_Date: 1998
Title: Bowhead Whale Locations
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Anchorage, AK
Publisher: MMS
Type_of_Source_Media: Electronic bulletin board
Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1985
Ending_Date: 1998
Source_Currentness_Reference: Ground surveys
Source_Citation_Abbreviation: None
Source_Contribution: Waterbird polygons
Source_Information:

Source_Citation:

Citation_Information:

Originator: T. Tiplady, USFWS
Publication_Date: Unpublished material
Title: Steller's eider Concentration Areas
Geospatial_Data_Presentation_Form: Expert knowledge
Source_Scale_Denominator: 250000
Type_of_Source_Media: Personal communication
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1998
Source_Currentness_Reference: Working knowledge
Source_Citation_Abbreviation: None
Source_Contribution: Polygons for Steller eider
Source_Information:

Source_Citation:

Citation_Information:

Originator: J. Johnson, USFWS
Publication_Date: 1998
Title: Tundra Swan Distribution
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Anchorage, AK
Publisher: U.S. Department of Interior, U.S. Fish and Wildlife Service
Type_of_Source_Media: Electronic mail
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: Unknown
Source_Currentness_Reference: Ground surveys
Source_Citation_Abbreviation: None
Source_Contribution: Polygons for Tundra Swan
Source_Information:

Source_Citation:

Citation_Information:

Originator: P. Martin, USFWS
Publication_Date: Unpublished material
Title: Oldsquaw, Common Eider, and Phalarope Concentration Areas
Geospatial_Data_Presentation_Form: Expert knowledge
Type_of_Source_Media: Personal communication

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: Unknown
Source_Currentness_Reference: Ground surveys
Source_Citation_Abbreviation: None
Source_Contribution: Oldsquaw, Common Eider, and Phalarope concentration polygons
Source_Information:

Source_Citation:

Citation_Information:

Originator: K. Ambrosius, BP Exploration
Publication_Date: 1998
Title: High Concentration Areas of Snow Goose
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Anchorage, AK
Publisher: BP Exploration (Alaska) Inc.
Source_Scale_Denominator: 63360
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1980
Ending_Date: 1995
Source_Currentness_Reference: Ground Surveys
Source_Citation_Abbreviation: None
Source_Contribution: Snow geese polygons
Source_Information:

Source_Citation:

Citation_Information:

Originator: D. Bieganski, BLM
Publication_Date: 1997
Title: Spectacled Eider Densities 1992 - 1996
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Fairbanks, AK
Publisher: Northeast NPR-A IAP/EIS, U.S. DOI, BLM Northern District Office
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1992
Ending_Date: 1996
Source_Currentness_Reference: Ground Surveys
Source_Citation_Abbreviation: None
Source_Contribution: Spectacled eider polygons
Source_Information:

Source_Citation:

Citation_Information:

Originator: D. Bieganski, BLM
Publication_Date: 1997
Title: King Eider Densities
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Fairbanks, AK
Publisher: Northeast NPR-A IAP/EIS, U.S. DOI, BLM Northern District Office
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: Unknown
Source_Currentness_Reference: Publication date
Source_Citation_Abbreviation: None
Source_Contribution: King eider polygons
Source_Information:

Source_Citation:

Citation_Information:

Originator: D. Bieganski, BLM
Publication_Date: 1998
Title: Lakes Surveyed by USFWS for Molting Geese
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Fairbanks, AK
Publisher: Northeast NPR-A IAP/EIS, U.S. DOI, BLM Northern District Office
Source_Scale_Denominator: 250000
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1982

Ending_Date: 1996
Source_Currentness_Reference: Ground Surveys
Source_Citation_Abbreviation: None
Source_Contribution: Geese polygons
Source_Information:

Source_Citation:

Citation_Information:

Originator: K. Ambrosius, BP Exploration
Publication_Date: 1998
Title: Oldsquaw, Eider, and Phalarope Concentrations
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Anchorage, AK
Publisher: BP Exploration (Alaska) Inc.
Source_Scale_Denominator: 63360
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: Unknown
Source_Currentness_Reference: Publication date
Source_Citation_Abbreviation: None
Source_Contribution: Oldsquaw, Eider and Phalarope concentration polygons
Source_Information:

Source_Citation:

Citation_Information:

Originator: USFWS, Fairbanks-Review Edits
Publication_Date: Unpublished material
Title: Spectacled Eider Concentration
Geospatial_Data_Presentation_Form: map
Source_Scale_Denominator: 250000
Type_of_Source_Media: paper
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1999
Source_Currentness_Reference: Review edits
Source_Citation_Abbreviation: None
Source_Contribution: Spectacled eider polygons
Source_Information:

Source_Citation:

Citation_Information:

Originator: ADF&G - Review Edits
Publication_Date: Unpublished material
Title: Snow Goose Concentrations
Geospatial_Data_Presentation_Form: map
Source_Scale_Denominator: 250000
Type_of_Source_Media: paper
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1999
Source_Currentness_Reference: Review edits
Source_Citation_Abbreviation: None
Source_Contribution: Snow geese polygons
Source_Information:

Source_Citation:

Citation_Information:

Originator: ADF&G - Review Edits
Publication_Date: Unpublished material
Title: Brant Concentration Areas
Geospatial_Data_Presentation_Form: map
Source_Scale_Denominator: 250000
Type_of_Source_Media: paper
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1999
Source_Currentness_Reference: Review edits
Source_Citation_Abbreviation: None
Source_Contribution: Brant polygons
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: 1997-199909
Process_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

---

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: 245
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Area point
Point_and_Vector_Object_Count: 245
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Complete chain
Point_and_Vector_Object_Count: 538
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 20645
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 338

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:
Nesting sites are of particular concern due to high concentrations of birds in adjacent waters, contamination of eggs and young by oiled adults and prey, and the potential for disturbance from response activities. Waterfowl nesting areas - The vast majority of the North Slope is used by nesting waterfowl. Coastal nesting areas for threatened species and species of special concern (Steller's eider, spectacled eider, king eider, yellow-billed loon, and oldsquaw) are delineated on the map. The waterfowl nesting season is from June through September. The ranges provided for the Steller's eider and spectacled eider are based on a limited number of observations. Other species of waterfowl nesting on the North Slope are northern pintail, greater white-fronted goose, Pacific loon, red-throated loon, scaup, tundra swan, scooter and snow goose. Waterfowl molting areas - The coastal waters behind the barrier islands and in the bays are high-concentration molting areas for oldsquaw, common eider and phalaropes. There may be additional species present in these areas, but data from the surveys are in the preliminary compilation stages and were not available for this project. The lakes between Teshekpuk Lake and the coast are host to over 30,000 molting geese in June and August. Waterfowl are particularly vulnerable during molting.
Entity_Type_Definition_Source: Research Planning, Inc.
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: 1
Range_Domain_Maximum: N
Attribute:

Attribute_Label: ID
Attribute_Definition:
A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas

number (70), 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 North Slope ESI Atlas (SPECIES ID, NAME): 11, Tundra; 12, Canada goose; 13, Brant; 14, Greater whitefronted goose; 15, Snow goose; 27, Oldsquaw; 80, Arctic tern; 81, Horned puffin; 82, Glaucous gull; 103, Common eider; 112, Black guillemot; 114, Sabine's gull; 158, King eider; 159, Steller's eider; 396, Phalaropes; 408, Yellow-billed loon; 415, Spectacled eider; 1003, Waterfowl.

Attribute_Definition_Source: NOAA
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 700100001
Range_Domain_Maximum: 700199999

Beginning_Date_of_Attribute_Values: 199811
Ending_Date_of_Attribute_Values: 199906

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_Cod*e: 98115-6349

Contact_Voice_Telephone: (206) 526-6400
Contact_Facsimile_Telephone: (206) 526-6329

Resource_Description: ESI Atlas for North Slope, 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: 200006
Metadata_Review_Date: 200006
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

North Slope, Alaska ESI: 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 and the Alaska Department of Environmental Conservation
Publication_Date: 200006
Title: North Slope, Alaska ESI: Nests
Edition: First
Geospatial_Data_Presentation_Form: Atlas
Series_Information:

Series_Name: None
Issue_Identification: North Slope, 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 and the Alaska Department of Environmental Conservation

Description:

Abstract:
This data set comprises the Environmental Sensitivity Index (ESI) data for the North Slope of Alaska from Point Barrow to the Canadian Border. 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.
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: -156.581
East_Bounding_Coordinate: -140.309
North_Bounding_Coordinate: 71.479
South_Bounding_Coordinate: 67.917

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: Nesting colonies

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: North Slope, Alaska
Place_Keyword: Point Barrow
Place_Keyword: Beaufort sea
Place_Keyword: NPR-A
Place_Keyword: Arctic NWR
Place_Keyword: Prudhoe Bay

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.

Data_Set_Credit:

This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and Alaska Department of Environmental Conservation

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 7.2.1) and ORACLE(r) RDBMS (version 6.0.36.1.1). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with

UNIX operating system (HP-UX Release A.09.01). The following files are included in the data set: bio_lut.e00, biofile.e00, biores.e00, birds.e00, breed.e00, breed_dt.e00, esi.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, socecon.e00, sources.e00, species.e00, status.e00, t_mammal.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 bird nesting colony information was obtained in digital format or data tables. 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 and human-use layers. 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 1:250,000 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. 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 also distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats. 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. Five major categories, or ELEMENTs, of biological resources were considered during data compilation: birds; fish; habitats; marine mammals; and terrestrial mammals. The ELEMENTs generally correspond to the coverage or geographic data layer names. There are also six attribute, or data tables, BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS, that are used to store the complex biological data. The point coverage (NESTS) is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or it can be linked directly using RARNUM. [The ID is a unique combination of the atlas number (for North Slope this is 70), 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), the 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: artic tern; Horned puffin; glaucous gull; Common eider; Black guillemot; Sabine's gull. The STATUS data table contains records for each species that is threatened or endangered on state or federal lists. The items include: ELEMENT, SPECIES_ID, STATE (two-letter state abbreviations), S_F (state or federal status), T_E (threatened or endangered status), DATE_PUB, and EL_SPE. The SEASONAL data table stores the monthly presence of each species where each species is defined as three-character monthly abbreviations. The BIORES table is linked to the SEASONAL table using either the combination of SPECIES_ID, ELEMENT, and SEASON_ID items, or the item EL_SPE_SEA, which contains the concatenation of these items. The BREED data table contains the life stage or life history data for each unique combination of ELEMENT, SPECIES_ID, and SEASON_ID (or EL_SPE_SEA), and up to 12 records (corresponding to each month of the year) can have different attributes and therefore separate records. The categories for each element of the items BREED1 through BREED5 are: BIRD: nesting, laying, hatching, fledging (BREED1 through BREED4 respectively). 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 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 to link to RARNUM, or it may be linked directly to the RARNUM in each of the biology cover's attribute files. As mentioned, BREED_DT is an auxiliary support file to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item. A second supporting data file is SOURCE. 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 nesting data set is based on survey data. The accuracy is < 105 feet.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: Shawn Stephensen, USFWS
Publication_Date: 1996
Title: Migratory Birds Database
Geospatial_Data_Presentation_Form: Tabular digital data
Publication_Information:

Publication_Place: Anchorage, AK
Publisher: U.S. Department of Interior, U.S. Fish and Wildlife Service

Type_of_Source_Media: Electronic bulletin board
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1996

Source_Currentness_Reference: Ground surveys
Source_Citation_Abbreviation: None
Source_Contribution: Seabird nesting colony point data

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: 1997-199909
Process_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

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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: 58

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:
Nesting sites are of particular concern due to high concentrations of birds in adjacent waters, contamination of eggs and young by oiled adults and prey, and the potential for disturbance from response activities. Marine bird nesting sites - Locations are shown where marine birds have been documented as nesting. The nesting colonies range in size from 2 to 518 nests and average around 60 nests. This information was derived from the USFWS database dated January 1997. The USFWS is constantly updating this database, but this region had not been updated as of June 1998.
Entity_Type_Definition_Source: Research Planning, Inc.

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: 1
Range_Domain_Maximum: N

Attribute:

Attribute_Label: ID
Attribute_Definition:
A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas number (70), element number (5), and record number. The following BIRD NEST species are found in the North Slope ESI Atlas (SPECIES ID, NAME): 80, artic tern; 81, Horned puffin; 82, glaucous gull; 103, Common eider; 112, Black guillemot; 114, Sabine's gull.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 700500001
Range_Domain_Maximum: 700599999
Beginning_Date_of_Attribute_Values: 199811
Ending_Date_of_Attribute_Values: 199906

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 North Slope, 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: 200006
Metadata_Review_Date: 200006
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

North Slope, Alaska ESI: Fishl

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 and the Alaska Department of Environmental Conservation
Publication_Date: 200006
Title: North Slope, Alaska ESI: Fishl
Edition: First
Geospatial_Data_Presentation_Form: Atlas
Series_Information:

Series_Name: None
Issue_Identification: North Slope, 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:
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Description:

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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: -156.581
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North_Bounding_Coordinate: 71.479
South_Bounding_Coordinate: 67.917

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

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: North Slope, Alaska
Place_Keyword: Point Barrow
Place_Keyword: Beaufort sea
Place_Keyword: NPR-A
Place_Keyword: Arctic NWR
Place_Keyword: Prudhoe Bay

Access_Constraints: None

Use_Constraints:

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UNIX operating system (HP-UX Release A.09.01). The following files are included in the data set: bio_lut.e00, biofile.e00, biores.e00, birds.e00, breed.e00, breed_dt.e00, esi.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, socecon.e00, sources.e00, species.e00, status.e00, t_mammal.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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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. Five major categories, or ELEMENTs, of biological resources were considered during data compilation: birds; fish; habitats; marine mammals; and terrestrial mammals. The ELEMENTs generally correspond to the coverage or geographic data layer names. There are also six attribute, or data tables, BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS, that are used to store the complex biological data. The biological line coverage (FISH) is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or it can be linked directly using RARNUM. [The ID is a unique combination of the atlas number (for North Slope this is 70), 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), the 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): FISH: diadromous; freshwater. The STATUS data table contains records for each species that is threatened or endangered on state or federal lists. The items include: ELEMENT, SPECIES_ID, STATE (two-letter state abbreviations), S_F (state or federal status), T_E (threatened or endangered status), DATE_PUB, and EL_SPE. The SEASONAL data table stores the monthly presence of each species where each species is defined as three-character monthly abbreviations. The BIORES table is linked to the SEASONAL table using either the combination of SPECIES_ID, ELEMENT, and SEASON_ID items, or the item EL_SPE_SEA, which contains the concatenation of these items. The BREED data table contains the life stage or life history data for each unique combination of ELEMENT, SPECIES_ID, and SEASON_ID (or EL_SPE_SEA), and up to 12 records (corresponding to each month of the year) can have different attributes and therefore separate records. The categories for each element of the items BREED1 through BREED5 are: FISH: spawning, eggs, larvae, juveniles, adults (BREED1 through BREED5 respectively). 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 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 to link to RARNUM, or it may be linked directly to the RARNUM in each of the biology cover's attribute files. As mentioned, BREED_DT is an auxiliary support file to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item. A second supporting data file is SOURCE. 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 base map 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: 1992
Title: An Atlas to the Catalog of Waters Important for Anadromous Fish: Arctic Region
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Juneau, AK
Publisher: Alaska Department of Fish and Game, Division of Habitat
Type_of_Source_Media: Electronic mail
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1991
Source_Currentness_Reference: Ground surveys
Source_Citation_Abbreviation: None
Source_Contribution: Fish streams
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: 1997-199909
Process_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

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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: 211
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 25876
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 249

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: Chain
Entity_Type_Definition:
Anadromous fish streams - The streams shown are those which have been classified by Alaska Department of Fish and Game as anadromous streams. The anadromous species include pink salmon, chum salmon, Arctic char (dolly varden), cisco (least and Arctic cisco, broad and humpback whitefish), and Arctic grayling. Spawning starts in August (salmon) and extends through November (Arctic char). The juveniles outmigrate back to the ocean from May through June. Juvenile fish concentrate in shallow nearshore habitats. Because of the potential for higher exposures and increased sensitivity to oil when first entering seawater, these juveniles are especially susceptible to oil impacts.
Entity_Type_Definition_Source: Research Planning, Inc.
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: 1
Range_Domain_Maximum: N
Attribute:

Attribute_Label: ID
Attribute_Definition:
A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas

number (70), element number (2), and record number. The following FISH species are found in the North Slope ESI Atlas (SPECIES ID, NAME):70, Pink salmon (humpy); 72, Chum salmon (dog); 164, Cisco; 189, Artic char; 503, Artic greyling; 1022, Anadromous fish.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 700200001
Range_Domain_Maximum: 700299999
Beginning_Date_of_Attribute_Values: 199811
Ending_Date_of_Attribute_Values: 199906

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 North Slope, 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: 200006
Metadata_Review_Date: 200006

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

North Slope, Alaska ESI: Habitat

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 and the Alaska Department of Environmental Conservation
Publication_Date: 200006
Title: North Slope, Alaska ESI: Habitat
Edition: First
Geospatial_Data_Presentation_Form: Atlas
Series_Information:

Series_Name: None
Issue_Identification: North Slope, 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 and the Alaska Department of Environmental Conservation

Description:

Abstract:
This data set comprises the Environmental Sensitivity Index (ESI) data for the North Slope of Alaska from Point Barrow to the Canadian Border. 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.
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: -156.581
East_Bounding_Coordinate: -140.309
North_Bounding_Coordinate: 71.479
South_Bounding_Coordinate: 67.917

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: Kelp

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: North Slope, Alaska
Place_Keyword: Point Barrow
Place_Keyword: Beaufort sea
Place_Keyword: NPR-A
Place_Keyword: Arctic NWR
Place_Keyword: Prudhoe Bay

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.

Data_Set_Credit:

This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and the Alaska Department of Environmental Conservation

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 7.2.1) and ORACLE(r) RDBMS (version 6.0.36.1.1). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with

UNIX operating system (HP-UX Release A.09.01). The following files are included in the data set: bio_lut.e00, biofile.e00, biores.e00, birds.e00, breed.e00, breed_dt.e00, esi.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, socecon.e00, sources.e00, species.e00, status.e00, t_mammal.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 and human-use layers. 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 1:250,000 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. 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 also distributed both in the NOAA

standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats. 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. Five major categories, or ELEMENTs, of biological resources were considered during data compilation: birds; fish; habitats; marine mammals; and terrestrial mammals. The ELEMENTs generally correspond to the coverage or geographic data layer names. There are also six attribute, or data tables, BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS, that are used to store the complex biological data. The biological polygon coverage (HABITATS) is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or it can be linked directly using RARNUM. [The ID is a unique combination of the atlas number (for North Slope this is 70), 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), the 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): HABITAT: kelp. The STATUS data table contains records for each species that is threatened or endangered on state or federal lists. The items include: ELEMENT, SPECIES_ID, STATE (two-letter state abbreviations), S_F (state or federal status), T_E (threatened or endangered status), DATE_PUB, and EL_SPE. The SEASONAL data table stores the monthly presence of each species where each species is defined as three-character monthly abbreviations. The BIORES table is linked to the SEASONAL table using either the combination of SPECIES_ID, ELEMENT, and SEASON_ID items, or the item EL_SPE_SEA, which contains the concatenation of these items. The 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 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 to link to RARNUM, or it may be linked directly to the RARNUM in each of the biology cover's attribute files. As mentioned, BREED_DT is an auxiliary support file to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item. A second supporting data file is SOURCE. 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 base map 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: J. Winters, ADFG
Publication_Date: 1998
Title: Kelp communities
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Anchorage, AK
Publisher:
Most Environmentally Sensitive Areas (MESAs), ADFG, Habitat and Restoration Division
Type_of_Source_Media: Electronic bulletin board
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: Unknown
Source_Currentness_Reference: Unknown
Source_Citation_Abbreviation: None
Source_Contribution: Kelp polygons
Source_Information:

Source_Citation:

Citation_Information:

Originator: K. Ambrosius, BP Exploration
Publication_Date: 1998
Title: Kelp Beds and Boulder Patches
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Anchorage, AK
Publisher: BP Exploration (Alaska) Inc.
Source_Scale_Denominator: 63360
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: Unknown
Source_Currentness_Reference: Unknown
Source_Citation_Abbreviation: None
Source_Contribution: Kelp polygons
Source_Information:

Source_Citation:

Citation_Information:

Originator: USFWS, Fairbanks, Review edits
Publication_Date: Unpublished material
Title: Kelp Bed Locations
Geospatial_Data_Presentation_Form: map
Source_Scale_Denominator: 250000
Type_of_Source_Media: Paper
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1999
Source_Currentness_Reference: Review edits
Source_Citation_Abbreviation: None
Source_Contribution: Kelp polygons
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: 1997-199909
Process_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

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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: 23
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Area point
Point_and_Vector_Object_Count: 23
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Complete chain
Point_and_Vector_Object_Count: 30
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 5777
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 30

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:
Boulder fields/kelp beds - These areas are of special concern in the Beaufort Sea, since they are the only known areas with a hard substrate. The hard substrate allows the growth of kelp, soft corals, and anemones. As a result, numerous fish and invertebrates are associated with this habitat, prompting the state to classify the boulder fields as a Most Environmentally Sensitive Area.
Entity_Type_Definition_Source: Research Planning, Inc.
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: 1
Range_Domain_Maximum: N
Attribute:

Attribute_Label: ID
Attribute_Definition:
A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas number (70), element number (3), and record number. ID values of 9999 are holes in polygons and do not contain information. The following HABITAT is found in the North Slope ESI Atlas (SPECIES ID, NAME): 413, Kelp.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 700300001

Range_Domain_Maximum: 700399999
Beginning_Date_of_Attribute_Values: 199811
Ending_Date_of_Attribute_Values: 199906

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 North Slope, 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: 200006
Metadata_Review_Date: 200006
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

North Slope, Alaska ESI: Marine Mammals

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 and the Alaska Department of Environmental Conservation
Publication_Date: 200006
Title: North Slope, Alaska ESI: Marine Mammals
Edition: First
Geospatial_Data_Presentation_Form: Atlas
Series_Information:

Series_Name: None
Issue_Identification: North Slope, 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 and the Alaska Department of Environmental Conservation

Description:

Abstract:
This data set comprises the Environmental Sensitivity Index (ESI) data for the North Slope of Alaska from Point Barrow to the Canadian Border. ESI data characterize estuarine environments and wildlife by their sensitivity to spilled oil. The ESI data includes information for three main components: shoreline habitat, sensitive biological resources, and human-use resources.
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: -156.581
East_Bounding_Coordinate: -140.309
North_Bounding_Coordinate: 71.479
South_Bounding_Coordinate: 67.917

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: Marine mammal

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: North Slope, Alaska
Place_Keyword: Point Barrow
Place_Keyword: Beaufort sea
Place_Keyword: NPR-A
Place_Keyword: Arctic NWR
Place_Keyword: Prudhoe Bay

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.

Data_Set_Credit:

This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and Alaska Department of Environmental Conservation

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 7.2.1) and ORACLE(r) RDBMS (version 6.0.36.1.1). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with

UNIX operating system (HP-UX Release A.09.01). The following files are included in the data set: bio_lut.e00, biofile.e00, biores.e00, birds.e00, breed.e00, breed_dt.e00, esi.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, socecon.e00, sources.e00, species.e00, status.e00, t_mammal.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 and human-use layers. 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 1:250,000 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. 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 also distributed both in the NOAA

standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats. 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. Five major categories, or ELEMENTs, of biological resources were considered during data compilation: birds; fish; habitats; marine mammals; and terrestrial mammals. The ELEMENTs generally correspond to the coverage or geographic data layer names. There are also six attribute, or data tables, BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS, that are used to store the complex biological data. The biological polygon coverage (M_MAMMAL) is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or it can be linked directly using RARNUM. [The ID is a unique combination of the atlas number (for North Slope this is 70), 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), the 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): MARINE MAMMAL: pinniped; polar bear; 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, and EL_SPE. The SEASONAL data table stores the monthly presence of each species where each species is defined as three-character monthly abbreviations. The BIORES table is linked to the SEASONAL table using either the combination of SPECIES_ID, ELEMENT, and SEASON_ID items, or the item EL_SPE_SEA, which contains the concatenation of these items. The BREED data table contains the life stage or life history data for each unique combination of ELEMENT, SPECIES_ID, and SEASON_ID (or EL_SPE_SEA), and up to 12 records (corresponding to each month of the year) can have different attributes and therefore separate records. The categories for each element of the items BREED1 through BREED5 are: M_MAMMAL: mating, calving, den/pupping, molting (BREED1 through BREED4 respectively). 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 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 to link to RARNUM, or it may be linked directly to the RARNUM in each of the biology cover's attribute files. As mentioned, BREED_DT is an auxiliary support file to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item. A second supporting data file is SOURCE. 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 base map 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: Tracy, S. MMS
Publication_Date: 1998
Title: Marine Mammal locations
Geospatial_Data_Presentation_Form: Tabular digital data
Publication_Information:

Publication_Place: Anchorage, AK
Publisher: MMS
Type_of_Source_Media: Electronic mail
Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1985
Ending_Date: 1998
Source_Currentness_Reference: Aerial survey data
Source_Citation_Abbreviation: None
Source_Contribution: Whale and seal polygons
Source_Information:

Source_Citation:

Citation_Information:

Originator: W. Horowitz, MMS
Publication_Date: 1998
Title: Bowhead Whale Locations
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Anchorage, AK
Publisher: MMS
Type_of_Source_Media: Electronic mail
Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1985
Ending_Date: 1998
Source_Currentness_Reference: Aerial survey dates
Source_Citation_Abbreviation: None
Source_Contribution: Bowhead whale polygons
Source_Information:

Source_Citation:

Citation_Information:

Originator: ADF&G - Review Edits
Publication_Date: Unpublished material
Title: Spotted Seal Haulouts
Geospatial_Data_Presentation_Form: Map
Source_Scale_Denominator: 250,000
Type_of_Source_Media: Paper
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1999
Source_Currentness_Reference: Review edits
Source_Citation_Abbreviation: None
Source_Contribution: Spotted seal polygons
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: 1997-199909
Process_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: 98115-0070
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: 27
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Area point
Point_and_Vector_Object_Count: 27
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Complete chain
Point_and_Vector_Object_Count: 68
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 1550
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 45

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:
Ringed seal - Ringed seals are associated with the floating shorefast-ice zone. They use this zone for pupping and breeding, with the pups being born in late March and April. The pups are extremely sensitive to oil contamination for the first 6 to 8 weeks, since their primary insulation is from fur and not from a thick layer of blubber. Spotted seal - This species is a summer resident of the area. They arrive in the summer and haulout on sandy beaches and spits, and leave before freeze-up in October. There are no pupping activities in the study area. Bearded seal - This species can generally be found in the deeper waters and is associated with the pack ice. There is very little information on pupping in the study area, though it may occur. Beluga whale - This whale is found normally in the deeper waters off the continental shelf. In June and July they migrate along the ice leads from the Bering Sea to Canada. The summer concentration areas are east of the study area near the mouth of the Mackenzie River. The fall migration route of the whales follows the continental shelf, even though some whales may be seen closer to shore. Bowhead whales - These whales are a federally endangered species, and their primary fall migration corridor is in the relatively shallow (20-50 m) waters near the shoreline. Bowhead whales are even sited in many of the bays along the shoreline during the fall migration. They follow the ice leads during both spring and fall migrations.
Entity_Type_Definition_Source: Research Planning, Inc.
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: 1
Range_Domain_Maximum: N

Attribute:

Attribute_Label: ID
Attribute_Definition:
A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas number (70), element number (4), and record number. ID values of 9999 are holes in polygons and do not contain information. The following MARINE MAMMAL species are found in the North Slope ESI Atlas (SPECIES ID, NAME): 9, Beluga whale; 15, Bearded seal; 91, Spotted seal; 92, Ringed seal; 95, Bowhead whale.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 700400001
Range_Domain_Maximum: 700499999
Beginning_Date_of_Attribute_Values: 199811
Ending_Date_of_Attribute_Values: 199906

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 North Slope, 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: 200006
Metadata_Review_Date: 200006
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

North Slope, Alaska ESI: Marine Mammal Point

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 and the Alaska Department of Environmental Conservation
Publication_Date: 200006
Title: North Slope, Alaska ESI: Marine Mammal Point
Edition: First
Geospatial_Data_Presentation_Form: Atlas
Series_Information:

Series_Name: None
Issue_Identification: North Slope, 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 and the Alaska Department of Environmental Conservation

Description:

Abstract:
This data set comprises the Environmental Sensitivity Index (ESI) data for the North Slope of Alaska from Point Barrow to the Canadian Border. 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.

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: -156.581
East_Bounding_Coordinate: -140.309
North_Bounding_Coordinate: 71.479
South_Bounding_Coordinate: 67.917

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: Marine mammal

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: North Slope, Alaska
Place_Keyword: Point Barrow
Place_Keyword: Beaufort sea
Place_Keyword: NPR-A
Place_Keyword: Arctic NWR
Place_Keyword: Prudhoe Bay

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.

Data_Set_Credit:

This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and the Alaska Department of Environmental Conservation.

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's

ARC/INFO(r) (version 7.2.1) and ORACLE(r) RDBMS (version 6.0.36.1.1). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.09.01). The following files are included in the data set: bio_lut.e00, biofile.e00, biores.e00, birds.e00, breed.e00, breed_dt.e00, esi.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, socecon.e00, sources.e00, species.e00, status.e00, t_mammal.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 and human-use layers. 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 1:250,000 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. 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 also distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats. 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. Five major categories, or ELEMENTs, of biological resources were considered during data compilation: birds; fish; habitats; marine mammals; and terrestrial mammals. The ELEMENTs generally correspond to the coverage or geographic data layer names. There are also six attribute, or data tables, BIORES, BREED, SEASONAL, SOURCES, SPECIES, and STATUS, that are used to store the complex biological data. The point coverage for marine mammals (M_MAMPT) is linked to the Biological Resources table (BIORES) using the unique ID and the lookup table BIO_LUT, or it can be linked directly using RARNUM. [The ID is a unique combination of the atlas number (for North Slope this is 70), 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), the 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): MARINE MAMMAL: polar bear. The STATUS data table contains records for each species that is threatened or endangered on state or federal lists. The items include: ELEMENT, SPECIES_ID, STATE (two-letter state abbreviations), S_F (state or federal status), T_E (threatened or endangered status), DATE_PUB, and EL_SPE. The SEASONAL data table stores the monthly presence of each species where each species is defined as three-character monthly abbreviations. The BIORES table is linked to the SEASONAL table using either the combination of SPECIES_ID, ELEMENT, and SEASON_ID items, or the item EL_SPE_SEA, which contains the concatenation of these items. The BREED data table contains the life stage or life history data for each unique combination of ELEMENT, SPECIES_ID, and SEASON_ID (or EL_SPE_SEA), and up to 12 records (corresponding to each month of the year) can have different attributes and therefore separate records. The categories for each element of the items BREED1 through BREED5 are: M_MAMMAL: mating, calving, den/pupping, molting (BREED1 through BREED4 respectively). 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 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 to link to RARNUM, or it may be linked directly to the RARNUM in each of the biology cover's attribute files. As mentioned, BREED_DT is an auxiliary support file to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item. A second supporting data file is SOURCE. 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 base map 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: S. Kalxdorff, USFWS
Publication_Date: 1998
Title: Polar Bear Den Locations
Geospatial_Data_Presentation_Form: Tabular digital data
Publication_Information:

Publication_Place: Anchorage, AK
Publisher: U.S. Department Of Interior, U.S. Fish and Wildlife Service

Type_of_Source_Media: Electronic mail
Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1970
Ending_Date: 1998

Source_Currentness_Reference: Ground survey dates
Source_Citation_Abbreviation: None

Source_Contribution: Polar den points
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: 1997-199909
Process_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

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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: 113

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:
Polar bears are faithful to a den habitat type but not to a specific location. The point data on the map indicate historic locations of polar bear dens. The exact location of the dens cannot be predicted, since the dens are built into snowdrifts along bluffs or pressure ridges. On the ice, the den locations move from east to west with the floating ice. Only pregnant females den, starting in November and emerge in March or April. During the fall (October to November), polar bear feeding areas are concentrated on the shoreline, on barrier islands, and along the leads in the ice. Once the ocean is frozen over, the bears disperse onto the ice. Cross Island, Oliktok Point, Narwhal Island, Tigvariak Island, and Barter Island are areas where polar bears historically congregate to feed on carcasses.
Entity_Type_Definition_Source: Research Planning, Inc.
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: 1
Range_Domain_Maximum: N
Attribute:

Attribute_Label: ID
Attribute_Definition:
A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas number (70), element number (8), and record number. The following MARINE MAMMAL point species are found in the North Slope ESI Atlas (SPECIES ID, NAME): 90, Polar bear.
Attribute_Definition_Source: NOAA

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 700800001
Range_Domain_Maximum: 700899999
Beginning_Date_of_Attribute_Values: 199811
Ending_Date_of_Attribute_Values: 199906

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 North Slope, 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: 200006
Metadata_Review_Date: 200006
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

North Slope, Alaska ESI: Terrestrial Mammal

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 and the Alaska Department of Environmental Conservation
Publication_Date: 200006
Title: North Slope, Alaska ESI: Terrestrial Mammal
Edition: First
Geospatial_Data_Presentation_Form: Atlas
Series_Information:

Series_Name: None
Issue_Identification: North Slope, 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 and the Alaska Department of Environmental Conservation

Description:

Abstract:
This data set comprises the Environmental Sensitivity Index (ESI) data for the North Slope of Alaska from Point Barrow to the Canadian Border. 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.
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: -156.581
East_Bounding_Coordinate: -140.309
North_Bounding_Coordinate: 71.479
South_Bounding_Coordinate: 67.917

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: Terrestrial mammal

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: North Slope, Alaska
Place_Keyword: Point Barrow
Place_Keyword: Beaufort sea
Place_Keyword: NPR-A
Place_Keyword: Arctic NWR
Place_Keyword: Prudhoe Bay

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.

Data_Set_Credit:

This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and the Alaska Department of Environmental Conservation.

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 7.2.1) and ORACLE(r) RDBMS (version 6.0.36.1.1). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with

UNIX operating system (HP-UX Release A.09.01). The following files are included in the data set: bio_lut.e00, biofile.e00, biores.e00, birds.e00, breed.e00, breed_dt.e00, esi.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, socecon.e00, sources.e00, species.e00, status.e00, t_mammal.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.

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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 and human-use layers. 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 1:250,000 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. 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 also distributed both in the NOAA

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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 to link to RARNUM, or it may be linked directly to the RARNUM in each of the biology cover's attribute files. As mentioned, BREED_DT is an auxiliary support file to the flat file structure, which allows the user to do searches based on month for seasonal breeding activities. The link from the flat file to BREED_DT is the BREED item. A second supporting data file is SOURCE. 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:
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Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: P. Reynolds, USFWS
Publication_Date: 1998
Title: Caribou Calving Areas
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Anchorage, AK
Publisher: U.S. Department of Interior, U.S. Fish and Wildlife Service

Type_of_Source_Media: Electronic mail
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: Unknown
Source_Currentness_Reference: Publication date
Source_Citation_Abbreviation: None
Source_Contribution: Caribou polygons
Source_Information:

Source_Citation:

Citation_Information:

Originator: P. Reynolds, USFWS
Publication_Date: 1998
Title: Surveys for Caribou Calving
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Anchorage, AK
Publisher: U.S. Department of Interior, U.S. Fish and Wildlife Service

Type_of_Source_Media: Electronic mail
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: Unknown

Source_Currentness_Reference: Publication date
Source_Citation_Abbreviation: None
Source_Contribution: Caribou polygons

Source_Information:

Source_Citation:

Citation_Information:

Originator: P. Reynolds, USFWS
Publication_Date: 1997
Title: Moose Distributions
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Anchorage, AK
Publisher: U.S. Department of Interior, U.S. Fish and Wildlife Service

Type_of_Source_Media: Electronic mail
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: Unknown

Source_Currentness_Reference: Publication date
Source_Citation_Abbreviation: None
Source_Contribution: Moose polygons

Source_Information:

Source_Citation:

Citation_Information:

Originator: Bieganski, D. BLM
Publication_Date: 1997

Title: Locations for Caribou During Calving Season
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Fairbanks, AK
Publisher: Northeast NPR-A IAP/EIS, U.S. DOI, BLM Northern District Office
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1990
Ending_Date: 1996
Source_Currentness_Reference: Ground survey
Source_Citation_Abbreviation: None
Source_Contribution: Caribou polygons
Source_Information:

Source_Citation:

Citation_Information:

Originator: D. Bieganski,BLM
Publication_Date: 1997
Title: Distribution of Moose
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Fairbanks, AK
Publisher: Northeast NPR-A IAP/EIS, U.S. DOI, BLM Northern District Office
Source_Scale_Denominator: 1000000
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1978
Source_Currentness_Reference: Content date
Source_Citation_Abbreviation: None
Source_Contribution: Moose polygons
Source_Information:

Source_Citation:

Citation_Information:

Originator: ADF&G - Review Edits
Publication_Date: Unpublished material
Title: Moose Concentration Area
Geospatial_Data_Presentation_Form: Map
Source_Scale_Denominator: 250,000

Type_of_Source_Media: Paper
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1999
Source_Currentness_Reference: Review edits
Source_Citation_Abbreviation: None
Source_Contribution: Moose polygons
Source_Information:

Source_Citation:

Citation_Information:

Originator: USFWS, Fairbanks-Review Edits
Publication_Date: Unpublished material
Title: Dall Sheep Migration
Geospatial_Data_Presentation_Form: Map
Source_Scale_Denominator: 250,000
Type_of_Source_Media: Paper
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1999
Source_Currentness_Reference: Review edits
Source_Citation_Abbreviation: None
Source_Contribution: Dall sheep polygons
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: 1997-199909
Process_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

---

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: 28
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Area point
Point_and_Vector_Object_Count: 28
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Complete chain
Point_and_Vector_Object_Count: 43
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 3332
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 29

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 polygons
Entity_Type_Definition:
Caribou - Polygons on the map depict the caribou calving areas for three of the four major caribou herds on the North Slope. The caribou usually concentrate within these areas during calving (late May to June) but also may be found in other areas. The entire coastline is an insect-relief zone for the caribou. From mid-June through mid-August, when temperatures warm up and the wind dies down, insects force the caribou to seek refuge in and near the water. Moose - The Colville River is a winter concentration area for moose. As many as half of the moose present on the western North Slope overwinter along the Colville River.
Entity_Type_Definition_Source: Research Planning, Inc.

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: 1
Range_Domain_Maximum: N

Attribute:

Attribute_Label: ID
Attribute_Definition:
A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas number (70), element number (9), and record number. ID values of 9999 are holes in polygons and do not contain information. The following TERRESTRIAL MAMMAL species are found in the North Slope ESI Atlas (SPECIES ID, NAME): 117, Moose; 118, Caribou; 122, Dall's sheep.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 700900001
Range_Domain_Maximum: 70099999
Beginning_Date_of_Attribute_Values: 199811
Ending_Date_of_Attribute_Values: 199906

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 North Slope, 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: 200006
Metadata_Review_Date: 200006
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

North Slope, Alaska ESI: 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 and the Alaska Department of Environmental Conservation
Publication_Date: 200006
Title: North Slope, Alaska ESI: Socioeconomic Points
Edition: First
Geospatial_Data_Presentation_Form: Atlas
Series_Information:

Series_Name: None
Issue_Identification: North Slope, 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 and the Alaska Department of Environmental Conservation

Description:

Abstract:
This data set comprises the Environmental Sensitivity Index (ESI) data for the North Slope of Alaska from Point Barrow to the Canadian Border. 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.

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: -156.581
East_Bounding_Coordinate: -140.309
North_Bounding_Coordinate: 71.479
South_Bounding_Coordinate: 67.917

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: Human-use features
Theme_Keyword: Airport
Theme_Keyword: Road
Theme_Keyword: Pipeline
Theme_Keyword: Oil facility
Theme_Keyword: Mining

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: North Slope, Alaska
Place_Keyword: Point Barrow
Place_Keyword: Beaufort sea
Place_Keyword: NPR-A
Place_Keyword: Arctic NWR
Place_Keyword: Prudhoe Bay

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.

Data_Set_Credit:

This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and the Alaska Department of Environmental Conservation

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 7.2.1) and ORACLE(r) RDBMS (version 6.0.36.1.1). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with UNIX operating system (HP-UX Release A.09.01). The following files are included in the data set: bio_lut.e00, biofile.e00, biores.e00, birds.e00, breed.e00, breed_dt.e00, esi.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, socecon.e00, sources.e00, species.e00, status.e00, t_mammal.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 and human-use layers. 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 1:250,000 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. 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 also distributed both in the NOAA standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats. The section Spatial_Data_Organization_Information refers to the source files in ARC export format only.

Completeness_Report:

Human-Use Resources: Several human-use, or socio-economic, features are included in ESI atlases. Entity points and complete chains (arcs) are digitized into the coverage SOCECON and managed area polygonal data are stored in the MGT coverage. Both data sets are linked to the data table SOC_DAT using the SOC_LUT lookup table and the items HUNUM and ID. HUNUM is a unique reference number concatenated with the atlas number (70). ID is a concatenation of atlas number (70), element number (SOCECON = 10), and unique record number. The TYPE item for entity points may contain the following values: Airport, A; Mining, M2; Oil Facilities, OF. The TYPE item for complete chains may contain the following values: International Border, IB; Pipeline, PL; Roads, R; State Water Limit, SW. 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.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: K. Ambrosius, BP Exploration
Publication_Date: Unpublished material
Title: Infrastructure points
Geospatial_Data_Presentation_Form: Tabular digital data
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1998
Source_Currentness_Reference: Production date
Source_Citation_Abbreviation: None
Source_Contribution: Soc-econ points

Source_Information:

Source_Citation:

Citation_Information:

Originator: D. Mortenson, Alaska DNR
Publication_Date: 1998
Title: Airports and Runways

Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Anchorage, Alaska
Publisher: ADNR
Source_Scale_Denominator: 63360
Type_of_Source_Media: Electronic mail
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1995
Source_Currentness_Reference: Content date
Source_Citation_Abbreviation: None
Source_Contribution: Airport location points
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: 1997-199909
Process_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

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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: 1067
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 11761
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Entity point
Point_and_Vector_Object_Count: 157
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 2943

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 maps include other human-use resources and oceanographic features related to oil spill planning and response. Roads - All primary and secondary roads are shown. Pipelines - The major production pipelines, including the Trans Alaska Pipeline, are shown.

Entity_Type_Definition_Source: Research Planning, Inc.

Attribute:

Attribute_Label: Type
Attribute_Definition:
Identifies a line or point with a socio-economic, or human-use, feature. This attribute allows direct access to the type of feature instead of linking to the more detailed SOC_DAT table.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: IB
Enumerated_Domain_Value_Definition: International Border
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: PL
Enumerated_Domain_Value_Definition: Pipeline
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: R
Enumerated_Domain_Value_Definition: Road
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: SW
Enumerated_Domain_Value_Definition: State Water Limit
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Beginning_Date_of_Attribute_Values: 199811
Ending_Date_of_Attribute_Values: 199906
Detailed_Description:

Entity_Type:

Entity_Type_Label: Entity point
Entity_Type_Definition:
Airports - The airports depicted are all capable of handling small, twin-engine airplanes. Private, as well as public, airports have been included. Oil production facilities - Facilities related to oil production, as of November 1998, are depicted, including production wells, transfer facilities, and pumping stations.
Entity_Type_Definition_Source: Research Planning, Inc.
Attribute:

Attribute_Label: Type
Attribute_Definition:
Identifies a line or point with a socio-economic, or human-use, feature. This attribute allows direct access to the type of feature instead of linking to the more detailed SOC_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: M2
Enumerated_Domain_Value_Definition: Mine Site
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: OF
Enumerated_Domain_Value_Definition: Oil Facilities
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Beginning_Date_of_Attribute_Values: 199811
Ending_Date_of_Attribute_Values: 199906

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_Minimum: 1
Range_Domain_Maximum: N

Attribute:

Attribute_Label: ID
Attribute_Definition:
A unique identifier that links to the SOC_LUT table. ID is a concatenation of atlas number (70), element number (10), and record number.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Maximum: 701000001
Range_Domain_Minimum: 701099999
Beginning_Date_of_Attribute_Values: 199811
Ending_Date_of_Attribute_Values: 199906

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 North Slope, 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: 200006
Metadata_Review_Date: 200006
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

North Slope, Alaska ESI: Management Areas

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 and the Alaska Department of Environmental Conservation
Publication_Date: 200006
Title: North Slope, Alaska ESI: Management Areas
Edition: First
Geospatial_Data_Presentation_Form: Atlas
Series_Information:

Series_Name: None
Issue_Identification: North Slope, 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 and the Alaska Department of Environmental Conservation

Description:

Abstract:
This data set comprises the Environmental Sensitivity Index (ESI) data for the North Slope of Alaska from Point Barrow to the Canadian Border. 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
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: -156.581
East_Bounding_Coordinate: -140.309
North_Bounding_Coordinate: 71.479
South_Bounding_Coordinate: 67.917

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: Management area

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: North Slope, Alaska
Place_Keyword: Point Barrow
Place_Keyword: Beaufort sea
Place_Keyword: NPR-A
Place_Keyword: Arctic NWR
Place_Keyword: Prudhoe Bay

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.

Data_Set_Credit:

This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and the Alaska Department of Environmental Conservation

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 7.2.1) and ORACLE(r) RDBMS (version 6.0.36.1.1). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with

UNIX operating system (HP-UX Release A.09.01). The following files are included in the data set: bio_lut.e00, biofile.e00, biores.e00, birds.e00, breed.e00, breed_dt.e00, esi.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, socecon.e00, sources.e00, species.e00, status.e00, t_mammal.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 and human-use layers. 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 1:250,000 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. 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 also distributed both in the NOAA

standard relational database format (see NOAA Technical Memorandum NOS ORCA 115) and in a simplified desktop flat file format. This metadata document includes information on both of these database formats. The section Spatial_Data_Organization_Information refers to the source files in ARC export format only.

Completeness_Report:

Human-Use Resources: Several human-use, or socio-economic, features are included in ESI atlases. Entity points and complete chains (arcs) are digitized into the coverage SOCECON and managed area polygonal data are stored in the MGT coverage. Both data sets are linked to the data table SOC_DAT using the SOC_LUT lookup table and the items HUNUM and ID. HUNUM is a unique reference number concatenated with the atlas number (70). ID is a concatenation of atlas number (70), element number (MGT = 11), and unique record number. The TYPE item for polygons may contain the following values: Indian Reserve, IN; Management Area, MA; National Park, NP; Wildlife Refuge, WR. 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.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: K. Ambrosius, BP Exploration
Publication_Date: 1998
Title: Areas of Critical Environmental Concern
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Anchorage, AK
Publisher: BP Exploration (Alaska) Inc.

Source_Scale_Denominator: 63360
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: Unknown

Source_Currentness_Reference: Publication date
Source_Citation_Abbreviation: None
Source_Contribution: Management area polygons

Source_Information:

Source_Citation:

Citation_Information:

Originator: D. Bieganski, BLM
Publication_Date: 1997
Title: Land Status
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Fairbanks, AK
Publisher: Northeast NPR-A IAP/EIS, U.S. DOI, BLM Northern District Office
Source_Scale_Denominator: 2000000
Type_of_Source_Media: CD-ROM
Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1994
Source_Currentness_Reference: Publication date
Source_Citation_Abbreviation: None
Source_Contribution: Management area polygons
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: 1997-199909
Process_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

---

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: 179
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Area point
Point_and_Vector_Object_Count: 179
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Complete chain
Point_and_Vector_Object_Count: 325
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 60638
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 292

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:
Management areas/parks - The boundaries of national parks, national wildlife refuges, and special management areas such as National Petroleum Reserve - Alaska (NPR-A)

are shown. Native lands - The boundaries of the native corporation lands are shown.
Entity_Type_Definition_Source: Research Planning, Inc.
Attribute:

Attribute_Label: Type
Attribute_Definition:
Identifies polygons with a socio-economic, or human-use, feature. This attribute allows direct access to the type of feature instead of linking to the more detailed SOC_DAT table.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: IR
Enumerated_Domain_Value_Definition: Indian Reservation
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: MA
Enumerated_Domain_Value_Definition: Management Area
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: NP
Enumerated_Domain_Value_Definition: National Park
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: WR
Enumerated_Domain_Value_Definition: Wildlife Refuge
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Beginning_Date_of_Attribute_Values: 199811
Ending_Date_of_Attribute_Values: 199906
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_Minimum: 1
Range_Domain_Maximum: N
Attribute:

Attribute_Label: ID
Attribute_Definition:
A unique identifier that links to the BIO_LUT table. ID is a concatenation of atlas

number (70), element number (11), and record number. ID values of 9999 are holes in polygons and do not contain information.
Attribute_Definition_Source: NOAA
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 701100001
Range_Domain_Maximum: 701199999
Beginning_Date_of_Attribute_Values: 199811
Ending_Date_of_Attribute_Values: 199906

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 North Slope, 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: 200006
Metadata_Review_Date: 200006
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

North Slope, Alaska ESI: Bathymetry

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 and the Alaska Department of Environmental Conservation
Publication_Date: 200006
Title: North Slope, Alaska ESI: Bathymetry
Edition: First
Geospatial_Data_Presentation_Form: Atlas
Series_Information:

Series_Name: None
Issue_Identification: North Slope, 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 and the Alaska Department of Environmental Conservation

Description:

Abstract:
This data set comprises the Environmental Sensitivity Index (ESI) data for the North Slope of Alaska from Point Barrow to the Canadian Border. 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.
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: -156.581
East_Bounding_Coordinate: -140.309
North_Bounding_Coordinate: 71.479
South_Bounding_Coordinate: 67.917

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: Bathymetry

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: North Slope, Alaska
Place_Keyword: Point Barrow
Place_Keyword: Beaufort sea
Place_Keyword: NPR-A
Place_Keyword: Arctic NWR
Place_Keyword: Prudhoe Bay

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.

Data_Set_Credit:

This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and the Alaska Department of Environmental Conservation

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 7.2.1) and ORACLE(r) RDBMS (version 6.0.36.1.1). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with

UNIX operating system (HP-UX Release A.09.01). The following files are included in the data set: bio_lut.e00, biofile.e00, biores.e00, birds.e00, breed.e00, breed_dt.e00, esi.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, socecon.e00, sources.e00, species.e00, status.e00, t_mammal.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:
Digital bathymetry was obtained from U.S. Geological Service, Biological Resource Division (USGS - BRD). Under this project, the 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.

Completeness_Report:
Bathymetry was obtained from U.S. Geological Service, Biological Resource Division (USGS - BRD) in Anchorage, AK. The data were only checked for topological and attribute accuracy. The data are in the 10, 20, 60, and 200 meter contours. These contour intervals are significant in that they can be used as guidelines for the distribution of marine mammals, and also the extent of shorefast ice.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:
The accuracy was tested using ARC/INFO's RMS Errors. When the digitized map is converted from table inches to real world coordinates, RMS errors averaged 150 m for the approximately 100 maps digitized.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: USGS/BRD
Publication_Date: 1997
Title: NOS Bathymetry
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:

Publication_Place: Anchorage, AK

Publisher: USGS BRD
Source_Scale_Denominator: 250000
Type_of_Source_Media: Online
Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1900
Ending_Date: 1971
Source_Currentness_Reference: Content time period
Source_Citation_Abbreviation: None
Source_Contribution: Bathymetery arcs
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: 1997-199909
Process_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

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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: 333
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 13218
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 1251

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:
Contours for 10, 20, 60 and 200 meters are shown. In addition to providing information for dispersant use, the contours correspond to marine mammal distributions and the extent of shorefast ice.
Entity_Type_Definition_Source: Research Planning, Inc.
Attribute:

Attribute_Label: Methods
Attribute_Definition: Method used to generate the contour interval.
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Digitize
Enumerated_Domain_Value_Definition: None
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Beginning_Date_of_Attribute_Values: 199811
Ending_Date_of_Attribute_Values: 199906
Attribute:

Attribute_Label: Elevation
Attribute_Definition: Depth below sea level in meters
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 0
Range_Domain_Maximum: 200
Attribute_Units_of_Measure: Meter
Beginning_Date_of_Attribute_Values: 199811
Ending_Date_of_Attribute_Values: 199906

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 North Slope, 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: 200006
Metadata_Review_Date: 200006
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

North Slope, Alaska ESI: Ice

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 and the Alaska Department of Environmental Conservation
Publication_Date: 200006
Title: North Slope, Alaska ESI: Ice
Edition: First
Geospatial_Data_Presentation_Form: Atlas
Series_Information:

Series_Name: None
Issue_Identification: North Slope, 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 and the Alaska Department of Environmental Conservation

Description:

Abstract:
This data set comprises the Environmental Sensitivity Index (ESI) data for the North Slope of Alaska from Point Barrow to the Canadian Border. 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.
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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: -156.581
East_Bounding_Coordinate: -140.309
North_Bounding_Coordinate: 71.479
South_Bounding_Coordinate: 67.917

Keywords:

Theme:

Theme_Keyword_Thesaurus: None
Theme_Keyword: Sensitivity Maps
Theme_Keyword: ESI
Theme_Keyword: Coastal resources
Theme_Keyword: Oil spill planning
Theme_Keyword: Ice Extent
Theme_Keyword: Coastal zone management

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: North Slope, Alaska
Place_Keyword: Point Barrow
Place_Keyword: Beaufort sea
Place_Keyword: NPR-A
Place_Keyword: Arctic NWR
Place_Keyword: Prudhoe Bay

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.

Data_Set_Credit:

This project was supported by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington and the Alaska Department of Environmental Conservation

Native_Data_Set_Environment:

The software packages used to develop the atlas are Environmental Systems Research Institute's ARC/INFO(r) (version 7.2.1) and ORACLE(r) RDBMS (version 6.0.36.1.1). The hardware configuration is Hewlett Packard workstations (models 715/50 and 712/80i with 4 X-terminals) with

UNIX operating system (HP-UX Release A.09.01). The following files are included in the data set: bio_lut.e00, biofile.e00, biores.e00, birds.e00, breed.e00, breed_dt.e00, esi.e00, fishl.e00, habitats.e00, hydro.e00, index.e00, m_mammal.e00, m_mampt.e00, mgt.e00, nests.e00, seasonal.e00, soc_dat.e00, soc_lut.e00, socecon.e00, sources.e00, species.e00, status.e00, t_mammal.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 average extent of 50% pack ice was digitized based on a 1-kilometer resolution coverage of pack ice extent provided by the National Ice Center. 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.

Completeness_Report:
The ice line represents the average extent of 50% pack ice coverage by month. For the months after September and before August, the 50% pack ice usually covers the entire area.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:
The ESI data uses USGS 1:63,360 topographic quadrangles as the base map. It is estimated that the ESI shoreline classification has a minimum mapping unit of 50 feet.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: National Ice Center
Publication_Date: 1999
Title: Monthly Mean Ice Edge Extent
Geospatial_Data_Presentation_Form: Raster digital data
Publication_Information:

Publication_Place: Washington, DC
Publisher: National Ice Center

Source_Scale_Denominator: 2000000
Type_of_Source_Media: Electronic mail

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: Unknown
Source_Currentness_Reference: Survey
Source_Citation_Abbreviation: None
Source_Contribution: Ice boundary lines
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: 1997-199909
Process_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

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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: 2

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Link
Point_and_Vector_Object_Count: 85
SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Node, planar graph
Point_and_Vector_Object_Count: 4

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 ice lines show the average extent of the 50 percent coverage of pack ice by month.
Entity_Type_Definition_Source: Research Planning, Inc.
Attribute:

Attribute_Label: Description
Attribute_Definition: None
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Pack Ice
Enumerated_Domain_Value_Definition: Leading edge of Pack Ice
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Beginning_Date_of_Attribute_Values: 199811

Ending_Date_of_Attribute_Values: 199906
Attribute:

Attribute_Label: Month
Attribute_Definition: Month of pack ice extent
Attribute_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: August
Enumerated_Domain_Value_Definition: None
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: September
Enumerated_Domain_Value_Definition: None
Enumerated_Domain_Value_Definition_Source: Research Planning, Inc.
Beginning_Date_of_Attribute_Values: 199811
Ending_Date_of_Attribute_Values: 199906

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
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Resource_Description: ESI Atlas for North Slope, Alaska
Distribution_Liability:
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Custom_Order_Process:
Contact NOAA for distribution options (see Distribution_Information).

Metadata_Reference_Information:

Metadata_Date: 200006
Metadata_Review_Date: 200006
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
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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