

Identification_Information:

Citation:

Citation_Information:

Originator: Charles Monnett, Minerals Management Service

Publication_Date: Annually 1979-2007

Title: bwasp_metadata.txt

Geospatial_Data_Presentation_Form: tabular digital data

Other_Citation_Details: Previous survey reports (e.g., Treacy, S.D. and Monnett, C. 2005.

Aerial surveys of endangered whales in the Beaufort Sea, Fall 2002 - 2004. OCS Study MMS 2005-037. 153 pp.) are available from the Minerals Management Service, Office of Public Information, 3801 Centerpoint Drive, Suite 500, Anchorage, Alaska 99508-4363. Copies are available free of charge, as long as the supply lasts, from the above address. Telephone requests may be placed at 1-800-764-2627 or (907) 334-5282. E-mail requests may be posted to akwebmaster@mms.gov. Once the limited supply is gone, copies will be available from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161, or may be inspected at selected Federal Depository Libraries.

Online_Linkage: \\col umbi a\LE_GIS\projects\bwasp\Archi ve_CD\9_NODC\NODC_Aeri al_Master.MDB

Description:

Abstract:

The Minerals Management Service (MMS), previously Bureau of Land Management, has funded fall bowhead whale aerial surveys in this area each year since 1978, using a repeatable protocol from 1982 to the present. Bowhead monitoring by MMS Environmental Studies Section, Alaska Outer Continental Shelf (OCS) Region, normally overlaps the September-October "open-water" season when offshore drilling and geophysical exploration are feasible and when the fall subsistence hunt for bowhead whales takes place near Kaktovik, Nuiqsut, and Barrow, Alaska.

The primary survey aircraft was a de Havilland Twin Otter Series 300. The aircraft was equipped with three medium-size bubble windows that afforded complete viewing of the track-line.

Geographic positions of the aircraft were logged onto a laptop computer from a Global Navigation System (1982-1991) or a Global Positioning System (1992-2000). Prior to 1992, many surveys in Block 12 (See Browse Graphic) were conducted from a Grumman Turbo Goose Model G21G.

All bowhead (and beluga) whales observed were recorded, along with incidental sightings of other marine mammals. Particular emphasis was placed on regional surveys to assess large-area shifts in the migration pathway of bowhead whales and on the coordination of effort and management of data necessary to support seasonal offshore-drilling and seismic-exploration regulations. The selection of survey blocks to be flown on a given day was nonrandom, based primarily on criteria such as observed and predicted weather conditions over the study area and offshore oil-industry activities. Otherwise, the project attempted to distribute effort fairly evenly east-to-west across the entire study area. Aerial coverage favored inshore survey blocks (See Browse Graphic), since bowheads were rarely sighted north of these blocks in previous surveys (1979-1986). Surveys were flown at a target altitude of 458 m in order to maximize visibility and to minimize potential disturbance to marine mammals. Flights were normally aborted when cloud ceilings were consistently less than 305 m or the wind force was consistently above Beaufort 4.

Daily flight patterns were based on sets of non-repeating transect grids computer-generated for each survey block. Transect grids were derived by dividing each survey block into sections 30 minutes of longitude across. One of the minute marks along the northern edge of each section was selected at random then connected by a straight line to a similarly selected endpoint along the southern edge of that same section. This procedure was followed for all sections of that survey block. These transect legs were then connected alternately at their northernmost or southernmost ends to produce one continuous flight grid within each survey block. Gridlines were occasionally lengthened to cover both an inshore block and the block north of it. Lines were occasionally truncated due to extended poor visibility or to avoid potential interference with subsistence whaling activities. For bowheads encountered "on transect", the aircraft sometimes circled for a brief (< 10 min) period to observe behavior, obtain better estimates of their numbers, and/or determine whether calves were present. Any new groups sighted when circling were recorded as "on search".

Purpose:

The goals of the ongoing study Bowhead Whale Aerial Survey Project (BWASP) are:

1. Define the annual bowhead fall migration, significant inter-year differences, and long-term trends in distance from shore and water depth at which whales migrate.
2. Monitor temporal and spatial trends in the distribution, relative abundance, habitat, and behaviors (especially feeding) of endangered whales in arctic waters.
3. Provide real-time data to MMS and the National Marine Fisheries Service (NMFS) on the general progress of the fall migration of bowhead whales across the Alaskan Beaufort Sea for use in protection of this Endangered Species.
4. Provide an objective area-wide context for management interpretation of bowhead migrations and site-specific study results.

5. Record and map beluga whale distribution and incidental sightings of other marine mammals; and

6. Determine seasonal distribution of endangered whales in other planning areas of interest to MMS.

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: April, 1979

Ending_Date: October, 2007

Currentness_Reference: ground condition

Status:

Progress: In work

Maintenance_and_Update_Frequency: Annually

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -174.0134

East_Bounding_Coordinate: -125.2533

North_Bounding_Coordinate: 76.146

South_Bounding_Coordinate: 57.725

Keywords:

Theme:

Theme_Keyword_Thesaurus: BLM-State Keyword Thesaurus

Theme_Keyword: bowhead whale

Theme_Keyword: gray whale

Theme_Keyword: *Balaena mysticetus*

Theme_Keyword: *Eschrichtius robustus*

Theme_Keyword: endangered whales

Theme_Keyword: marine mammals

Theme_Keyword: wildlife

Theme_Keyword: Alaska

Place:

Place_Keyword: Beaufort Sea

Place_Keyword: Chuckchi Sea

Place_Keyword: Bering Sea

Access_Constraints: Discretionary, contains no sensitive information - generally considered releasable

Use_Constraints:

Any hardcopies or published data using these data shall clearly indicate their source.

Any users wishing to modify these data are obligated to report the extent of their modifications to the Minerals Management Service. User specifically agrees not to misrepresent modifications made to these data.

Point_of_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Charles Monnett

Contact_Organization: Minerals Management Service

Contact_Position: Research Manager, Bowhead Whale Aerial Survey Project

Contact_Voice_Telephone: 907-334-5282

Contact_Facsimile_Telephone: 907-334-5242

Contact_Electronic_Mail_Address: Charles.Monnett@MMS.Gov

Contact_Instructions: Previous survey reports (e.g., Treacy, S.D. and Monnett, C. 2005. Aerial surveys of endangered whales in the Beaufort Sea, Fall 2002 - 2004. OCS Study MMS 2005-037. 153 pp.) are available from the Minerals Management Service, Office of Public Information, 3801 Centerpoint Drive, Suite 500, Anchorage, Alaska 99508-4363. Copies are available free of charge, as long as the supply lasts, from the above address. Telephone requests may be placed at 1-800-764-2627 or (907) 334-5282. E-mail requests may be posted to akwebmaster@mms.gov. Once the limited supply is gone, copies will be available from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161, or may be inspected at selected Federal Depository Libraries.

Browse_Graphic:

Browse_Graphic_File_Name: G:\LE\ESS\BWASP\NODC_Browse_Graphic.doc

Browse_Graphic_File_Description: Block Areas

Native_Data_Set_Environment: Microsoft Windows 2000 Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog 8.3.0.800

Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report: On 7/7/2006 all values in the field Swimdir_True were corrected from previous inaccurate values. Values in Swimdir_True are the swim direction of whales corrected for magnetic declination. Swim directions are taken as a clock position in relation to magnetic compass direction, and need to be corrected for magnetic declination. Previous versions used a correct distance of declination, but incorrect direction of declination. All versions prior to this 2006 version of the BWASP database have inaccurate true swim directions.

bwasp_metadata

Logical Consistency Report: On 4/6/2006 for the 1979 to 2005 BWASP Aerial Survey Database duplicate records were removed. Previous versions of the BWASP Aerial Survey Database may include these duplicate records. The duplicate records were in 1979 flight Number eight, which should have only 20 records, and in 1982 flight number 3, which should have only 39 records.

Lineage:

Process Step:

Process Description: Metadata imported.

Process Step:

Process Description: Metadata imported.

Source Used Citation_Abbreviation: C:\DOCUMENTS\maddend\LOCALS-1\Temp\xml 22. tmp

Process Step:

Process Description: Metadata imported.

Source Used Citation_Abbreviation: G:\LE\ESS\BWASP\NODC\Aerial_Master_metadata.xml

Process Step:

Process Description: Metadata imported.

Source Used Citation_Abbreviation: C:\DOCUMENTS\hellerm\LOCALS-1\Temp\xml 43. tmp

Process Step:

Process Description: Metadata imported.

Source Used Citation_Abbreviation: C:\DOCUMENTS\Haym\Local Settings\Temp\xml 23A. tmp

Process Step:

Process Description: Metadata imported.

Source Used Citation_Abbreviation: C:\DOCUMENTS\haym\Local Settings\Temp\xml 1A. tmp

Process Step:

Process Description: On 7/7/2006 all values in the field Swmdir_True were corrected from previous inaccurate values. Values in Swmdir_True are the swim direction of whales corrected for magnetic declination. Swim directions are taken as a clock position in relation to magnetic compass direction, and need to be corrected for magnetic declination. Previous versions used a correct distance of declination, but incorrect direction of declination. All versions prior to this 2006 version of the BWASP database have inaccurate true swim directions.

Process Step:

Process Description: Metadata imported.

Source Used Citation_Abbreviation: C:\DOCUMENTS\haym\Local Settings\Temp\xml 1C. tmp

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

Geographic:

Geographic_Coordinate_Units: Decimal degrees

Geodetic_Model:

Horizontal_Datum_Name: North American Datum of 1983

Ellipsoid_Name: Geodetic Reference System 80

Entity_and_Attribute_Information:

Detailed_Description:

Entity_Type:

Entity_Type_Label: BWASP_Data

Attribute:

Attribute_Label: Event

Attribute_Definition: Sequential number representing data entry event. When ordering chronologically the Event field should be used in conjunction with the GMT_Minus8_DateTime field.

Attribute_Definition_Source: MMS

Attribute_Domain_Values:

Unrepresentable_Domain: Sequential unique whole numbers that are automatically generated.

Attribute_Value_Accuracy_Information:

Attribute_Value_Accuracy: High

Attribute_Value_Accuracy_Explanation: Occasionally Events cannot be logged at the actual time of the event. These events are logged after the fact and given an out-of-sequence event number. When ordering chronologically the Event field should be used in conjunction with the GMT_Minus8_DateTime field.

Attribute:

Attribute_Label: Flt_No

Attribute_Definition: Number indicating chronological order of flight for the season.

This value should be used in conjunction with the year value from GMT_Minus8_DateTime field to get a chronological ordering of all flights from all years.

Attribute:

Attribute_Label: GMT_Minus8_DateTime

Attribute_Definition: Date and time in Alaska Standard Time - 8 hours behind Greenwich Mean.

Attribute:

Attribute_Label: Lat

Attribute_Definition: Latitude of aircraft in Decimal Minutes (DDMM.MMM)

Attribute:

Attribute_Label: Long

Attribute_Definition: Longitude of aircraft in Decimal Minutes (DDMM.MMM)

Attribute:

Attribute_Label: ArcLat

Attribute_Definition: Latitude of aircraft in decimal degrees

Attribute:

Attribute_Label: ArcLong

Attribute_Definition: Longitude of aircraft in decimal degrees.

Attribute:

Attribute_Label: Alt

Attribute_Definition: Altitude of airplane, expressed in feet above sea level

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: tide rip

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: open water

Attribute:

Attribute_Label: Air_Head

Attribute_Definition: Direction of travel of aircraft.

Attribute:

Attribute_Label: Entry

Attribute_Definition: Indicates whether event was a sighting or other type of event and what flight type the event occurred during.

Attribute:

Attribute_Label: Species

Attribute_Definition: Indicates species sighted

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: s on search

Enumerated_Domain_Value_Definition: Indicates that this entry is a sighting made on the search leg of a flight, meaning that the airplane was en route to or from a target survey block or otherwise not along a transect grid

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: s on trans

Enumerated_Domain_Value_Definition: Indicates that the sighting was made on a transect leg of the flight (see abstract for details)

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: s on connect

Enumerated_Domain_Value_Definition: Indicates that the sighting occurred during a connect leg of the flight; i.e. a leg of the flight connecting two randomly generated transect legs

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: p on trans

Enumerated_Domain_Value_Definition: indicates that on this point of the transect the aircraft's position was recorded (not a sighting)

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: p on search

Enumerated_Domain_Value_Definition: indicates that at this point on the search leg the aircraft's position was recorded (not a sighting)

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: p on connect

Enumerated_Domain_Value_Definition: indicates that at this point on the "connect" leg of a flight, the aircraft's position was recorded (not a sighting)

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: start trans

Enumerated_Domain_Value_Definition: indicates the position where a transect flight began

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: end trans

Enumerated_Domain_Value_Definition: indicates the position where a transect flight ended

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: divert trans

Enumerated_Domain_Value_Definition: indicates position that transect leg was temporarily diverted from in order to closer investigate sightings

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: resume trans

Enumerated_Domain_Value_Definition: indicates position where transect leg was resumed after diverting

Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: deadhead
 Enumerated_Domain_Value_Definition: indicates position where no survey effort was made, e.g. when over land or when at high altitudes with heavy cloud cover

Attribute:
 Attribute_Label: Sightcue
 Attribute_Definition: Visual cue that caused observer to first notice the animal.

Attribute:
 Attribute_Label: Habitat
 Attribute_Definition: Indicates habitat where animal was sighted

Attribute_Domain_Values:
 Attribute:
 Attribute_Label: Behavior
 Attribute_Definition: Indicates behavior of animal when it was first sighted

Attribute:
 Attribute_Label: Size
 Attribute_Definition: Indicates subjective size of animal as described by observer

Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: breach
 Enumerated_Domain_Value_Definition: Whale(s) launching upwards such that half to nearly all of the body is above the surface before falling back into the water, usually on its side, creating an obvious splash

Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: dive
 Enumerated_Domain_Value_Definition: Whale(s) changing swim direction or body orientation relative to the water surface, resulting in submergence; may or may not include lifting the tail out of the water

Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: underwater blow
 Enumerated_Domain_Value_Definition: Whale(s) exhaling while submerged, thus creating a visible bubble

Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: thrash
 Enumerated_Domain_Value_Definition: Whale(s) exhibiting rapid flexure or gyration in the water

Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: tail slap
 Enumerated_Domain_Value_Definition: Whale(s) floating horizontally or head-downward in the water, waving tail back and forth above the water and striking the surface; usually seen in group situations

Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: swim
 Enumerated_Domain_Value_Definition: Whale(s) proceeding forward through the water propelled by tail pushes

Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: spy hop
 Enumerated_Domain_Value_Definition: Whale(s) extending head vertically out of the water such that up to one-third of the body, including the eye, is above the surface

Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: roll
 Enumerated_Domain_Value_Definition: Whale(s) rotating on the longitudinal axis, sometimes associated with mating

Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: rest
 Enumerated_Domain_Value_Definition: Whale(s) floating at the surface with head, or head and back exposed, showing no movement; more commonly observed in heavy-ice conditions than in open water

Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: mill
 Enumerated_Domain_Value_Definition: Whale(s) swimming slowly at the surface in close proximity (within 100 m) to other whales, often with varying headings

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: mate

Enumerated_Domain_Value_Definition: Ventral-ventral orienting of two whales, often with one or more other whales present to stabilize the mating pair. Mating is often seen within a group of milling whales. Pairs may appear to hold each other with their pectoral flippers and may entwine their tails.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: log play

Enumerated_Domain_Value_Definition: Whale(s) milling or thrashing about in association with a floating log.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: flipper slap

Enumerated_Domain_Value_Definition: Whale(s) floating on side, striking the water surface with pectoral flipper one or many times; usually seen within groups or when the slapping whale is touching another whale.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: feed

Enumerated_Domain_Value_Definition: Whale(s) diving repeatedly in a fixed general area, sometimes with mud streaming from the mouth and/or defecation observed upon surfacing. Feeding behavior is further defined as synchronous diving and surfacing or echelon-formations at the surface with swaths of clearer water behind the whale(s), or as surface swimming with mouth agape

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: cow with calf

Enumerated_Domain_Value_Definition: calf nursing; cow-calf pairs swimming within 20 m of each other

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: run

Enumerated_Domain_Value_Definition: animal was running (generally polar bears)

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: slap

Enumerated_Domain_Value_Definition: behavior was either a tail slap or a flipper slap

Attribute:

Attribute_Label: Total no

Attribute_Definition: Total number of animals counted in a particular sighting. (Note: all entries to date equalling exactly 100 represent minimums; documentation of precise group size (>99) was not available; reports show daily totals)

Attribute:

Attribute_Label: Cal fno

Attribute_Definition: Total number of calves present in sighting; calf defn: less than half the length of the accompanying adult

Attribute:

Attribute_Label: Clinometer

Attribute_Definition: Clinometer angle: angle down from horizon to the spot where the animal was sighted when that spot is abeam the aircraft.

Attribute:

Attribute_Label: Sop

Attribute_Definition: Side of plane from which sighting was made; l = left, r = right

Attribute:

Attribute_Label: Swi mdi r

Attribute_Definition: Predominant magnetic swim direction or heading of group at initial sighting.

Attribute:

Attribute_Label: Swi mspeed

Attribute_Definition: Estimate of animals swimming speed.

Attribute:

Attribute_Label: Response

Attribute_Definition: Indicates whether or not animal responded to aircraft's presence

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: still

Enumerated_Domain_Value_Definition: animal was not moving

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: slow (<)

Enumerated_Domain_Value_Definition: indicates that animal was swimming between 0-2

km/hr

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: medium

Enumerated_Domain_Value_Definition: indicates that animal was swimming at 2-4 km/hr

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: fast (>)

Enumerated_Domain_Value_Definition: indicates that animal was swimming at >4 km/hr

Attribute_Value_Accuracy_Information:

Attribute_Value_Accuracy_Explanation: swimming speed was subjectively estimated by observing the time it took a whale to swim one body length. An observed swimming rate of one body length per minute corresponded to an estimated speed of 1 km/hr.

Attribute:

Attribute_Label: Repeat

Attribute_Definition: Indicates whether or not this was considered a same-day repeat sighting

Attribute:

Attribute_Label: Observer

Attribute_Definition: Initials of the observer who first made the sighting.

Attribute:

Attribute_Label: Skycon

Attribute_Definition: Describes sky conditions; subjective observation.

Attribute:

Attribute_Label: Visimped

Attribute_Definition: Greatest visibility impediment; subjective observation

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Clear

Enumerated_Domain_Value_Definition: few or no clouds

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: partly cloudy

Enumerated_Domain_Value_Definition: some blue breaks in sky above airplane

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: overcast

Enumerated_Domain_Value_Definition: clouds everywhere above airplane

Attribute:

Attribute_Label: Vis_left

Attribute_Definition: Estimate of visibility off left side of plane (in kilometers).

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: precip

Enumerated_Domain_Value_Definition: precipitation; visibility impairment was categorized as precipitation if there was either water or snow on the windows or a near-field squall

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: none

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: low ceiling

Enumerated_Domain_Value_Definition: clouds below airplane

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: haze

Enumerated_Domain_Value_Definition: low mists reducing long-range visibility

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: fog

Enumerated_Domain_Value_Definition: in a cloud, or a cloud blocking field of vision

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: glare

Enumerated_Domain_Value_Definition: sun reflection on water that obstructs greater than 1/3 of observer's field of vision

Attribute:

Attribute_Label: Vis_right

Attribute_Definition: Estimate of visibility off right side of the plane (in kilometers).

Attribute:

Attribute_Label: Icepercent

Attribute_Definition: Observed percent of ocean surface covered by ice for area within 1 kilometer of airplane (frazzle not included in estimate).

Attribute:

Attribute_Label: Icetype

Attribute_Definition: Observed type of sea ice for area within 1 kilometer of airplane.

Attribute:

Attribute_Label: Seastate

Attribute_Definition: Observed sea state (using Beaufort Wind Force classification system).

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: grease/new

Enumerated_Domain_Value_Definition: smooth, flat ice; may or may not be snow-covered

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: frazil

Enumerated_Domain_Value_Definition: subsurface crystals or floating ice beads, uncongealed; not included in total ice percentage estimate

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: new + bkn floe

Enumerated_Domain_Value_Definition: primarily new ice, but mixed with thick chunks of old ice (broken floe) from previous years

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: bkn floe + new

Enumerated_Domain_Value_Definition: primarily broken floe ice plus some new ice

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: broken floe

Enumerated_Domain_Value_Definition: thick chunks of ice from previous years

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: floe

Enumerated_Domain_Value_Definition: large solid field of thick ice (no breaks); a large field of pack ice

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: lead

Enumerated_Domain_Value_Definition: crack or unclosed area in a floe

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: pack

Enumerated_Domain_Value_Definition: solid floe ice as far as the eye can see (usually north of the fall study area)

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: shorefast

Enumerated_Domain_Value_Definition: newly formed ice attached or adjacent to the shoreline

Attribute:

Attribute_Label: Block

Attribute_Definition: Indicates which block (out of a total of 12) sighting occurred in.

Attribute:

Attribute_Label: Depth_m

Attribute_Definition: Water depth in meters.

Attribute_Value_Accuracy_Information:

Attribute_Value_Accuracy: Moderate

Attribute_Value_Accuracy_Explanation: Depths are calculated using the International Bathymetric Chart of the Arctic Ocean. This is a 2.5 km resolution raster image available from NOAA.

Attribute:

Attribute_Label: UTMZ6X

Attribute_Definition: X-Coordinates re Universal Transverse Mercator Zone 6

Attribute:

Attribute_Label: UTMZ6Y

Attribute_Definition: Y-Coordinates re Universal Transverse Mercator Zone 6

Attribute:

Attribute_Label: Aerial_Survey

Attribute_Definition: Indicates whether sighting was made by the Bowhead Whale Aerial Survey Project (BWASP, conducted by the Minerals Management Service) or the Naval Ocean Systems Center (NOSC) and affiliated MMS contractors.

Attribute:

Attribute_Label: Swi mdi r_True

Attribute_Definition: True north swim direction. This is Swi mdi r corrected for magnetic declination.

Attribute:

bwasp_metadata

Attribute_Label: OBJECTID

Attribute_Definition: Internal feature number.

Attribute_Definition_Source: ESRI

Attribute_Domain_Values:

Unrepresentable_Domain: Sequential unique whole numbers that are automatically generated.

Attribute:

Attribute_Label: FltType

Attribute_Definition: Type of flight leg; deadhead, transect, search or connect.

Distribution_Information:

Resource_Description: Bowhead Whale Aerial Survey Project Reports, 1979-2005

Distribution_Liability: No warranty is made by the Minerals Management Service as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

Standard_Order_Process:

Ordering_Instructions: Previous survey reports (e.g., Treacy, S.D. and Monnett, C. 2005. Aerial surveys of endangered whales in the Beaufort Sea, Fall 2002 - 2004. OCS Study MMS 2005-037. 153 pp.) are available from the Minerals Management Service, Office of Public Information, 3801 Centerpoint Drive, Suite 500, Anchorage, Alaska 99508-4363. Copies are available free of charge, as long as the supply lasts, from the above address. Telephone requests may be placed at 1-800-764-2627 or (907) 334-5282. E-mail requests may be posted to akwebmaster@mms.gov. Once the limited supply is gone, copies will be available from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161, or may be inspected at selected Federal Depository Libraries.

Metadata_Reference_Information:

Metadata_Date: 20070311

Metadata_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: Minerals Management Service

Contact_Person: Charles Monnett

Contact_Position: Research Manager, Bowhead Whale Aerial Survey Project

Contact_Address:

Address_Type: physical address

Address: 3801 Centerpoint Drive, Suite 500

City: Anchorage

State_or_Province: AK

Postal_Code: 99503

Contact_Voice_Telephone: 907-334-5282

Contact_Facsimile_Telephone: 907-334-5242

Contact_Electronic_Mail_Address: Charles.Monnett@MMS.Gov

Metadata_Standard_Name: FGDC Content Standards for Digital Geospatial Metadata

Metadata_Standard_Version: FGDC-STD-001-1998

Metadata_Time_Convention: Local time

Metadata_Extensions:

Online_Linkage: <http://www.esri.com/metadata/esri prof80.html>

Profile_Name: ESRI Metadata Profile

Metadata_Extensions:

Online_Linkage: <http://www.esri.com/metadata/esri prof80.html>

Profile_Name: ESRI Metadata Profile

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Online_Linkage: <http://www.esri.com/metadata/esri prof80.html>

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