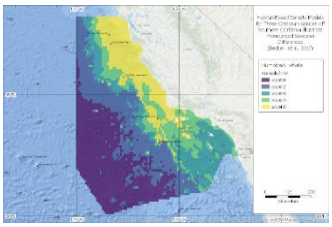
Winter/Spring Habitat-based Density Models for Three Cetacean Species off Southern California - Humpback whale

Type Shapefile



Tags Cetacean, Marine Mammal, Eastern Pacific Ocean, California, Southern California Bight, Habitat-Based Density Model, Species Distribution Model, Dall's Porpoise, Phocoenoides dalli, Winter/Spring, California Cooperative Oceanic Fisheries Investigations, CalCOFI, Southwest Fisheries Science Center, SWFSC

Summary

These models have been used by the Navy and others to assess potential impacts on cetaceans in compliance with U.S. regulations such as the Endangered Species Act and Marine Mammal Protection Act, which require species-specific assessments of the number of animals potentially affected by their activities.

Description

We used a well-established Generalized Additive Modeling framework to develop cetacean SDMs based on 20 California Cooperative Oceanic Fisheries Investigations (CalCOFI) shipboard surveys conducted during winter and spring between 2005 and 2015. Models were fit for short-beaked common dolphin (*Delphinus delphis delphis*), Dall's porpoise (*Phocoenoides dalli*), and humpback whale (*Megaptera novaeangliae*). Model performance was evaluated based on a variety of established metrics, including the percentage of explained deviance, ratios of observed to predicted density, and visual inspection of predicted and observed distributions. Final models were used to produce spatial grids of average species density and spatially-explicit measures of uncertainty. Results provide the first fine scale (10 km) density predictions for these species during the cool seasons and reveal distribution patterns that are markedly different from summer/fall, thus providing novel insights into species ecology and quantitative data for the seasonal assessment of potential anthropogenic impacts.

Credits

Elizabeth A. Becker, Karin A. Forney, Bruce J. Thayre, Amanda J. Debich, Gregory S. Campbell, Katherine Whitaker, Annie B. Douglas, Anita Gilles, Ryan Hoopes, and John A. Hildebrand. Frontiers in Marine Science, 4:121.
doi:10.3389/fmars.2017.00121

Use limitations

The user must be aware of data conditions and ultimately bear responsibility for the appropriate use of the information with respect to possible errors, original map scale, collection methodology, currency of data, and other conditions specific to certain data.

Extent

West -125.055684 East -117.122588

North 38.065782 South 30.070776

Scale Range

Maximum (zoomed in) 1:5,000

Minimum (zoomed out) 1:50,000,000

Topics and Keywords ►

Themes or categories of the resource biota, environment, oceans

Content type Downloadable Data

Export to FGDC CSDGM XML format as Resource Description No

Theme keywords cetacean, distribution, density, short-beaked common dolphin, Dall's porpoise, humpback whale, Delphinus delphis delphis, Phocoenoides dalli, Megaptera novaeangliae

Place keywords Southern California Bight, California, Eastern Pacific Ocean

Citation ►

Title Winter/Spring Habitat-based Density Models for Three Cetacean Species off Southern California - Humpback whale

Creation date 2018-01-08 00:00:00

Publication date 2018-01-08 00:00:00

Edition 2017

Presentation formats ⇔ digital map

FGDC geospatial presentation format vector digital data

Collection title Southwest Fisheries Science Center

Citation Contacts ►

Responsible party - originator

Individual's name Karin A. Forney, Ph.D.

Organization's name Southwest Fisheries Science Center

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Country US
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Responsible party - distributor
Individual's name nil

Contact information
►

Online resource
Location https://cetsound.noaa.gov
Access protocol https
Name Citation URL
Description Online Resource
Function performed information

Resource Details ►

Dataset languages ⇔ English (UNITED STATES)
Dataset character set utf8 - 8 bit UCS Transfer Format

Status completed
Spatial representation type ⇔ vector

Supplemental information

The objectives of the Becker et al. (2017) study were two-fold: 1) develop spatially-explicit density estimates for winter/spring to support management applications, and 2) compare model-predicted density and distribution patterns to previously developed summer/fall model results in the context of species ecology.

Processing environment ⇔ Version 6.2 (Build 9200) ; Esri ArcGIS 10.6.1.9270

Credits

Elizabeth A. Becker, Karin A. Forney, Bruce J. Thayre, Amanda J. Debich, Gregory S. Campbell, Katherine Whitaker, Annie B. Douglas, Anita Gilles, Ryan Hoopes, and John A. Hildebrand. Frontiers in Marine Science, 4:121.
doi:10.3389/fmars.2017.00121

ArcGIS item properties
Name ⇔ Humpback_whale
Size ⇔ 0.000
Location ⇔ file://\\hqdata1\homes1\Tim.Haverland\projects\cetacean mapping\data\CalCOFI_WinterSpring_Becker et al. 2017_Shapefiles\V01\Humpback_whale.shp
Access protocol ⇔ Local Area Network

Extents ►

Extent
Geographic extent
Bounding rectangle
West longitude -179.9999999999
East longitude -115.950441157234
South latitude 27.4689790695285
North latitude 43.0000193332257

Extent
Geographic extent
Bounding rectangle
Extent type
Extent used for searching
West longitude ⇔ -125.055684
East longitude ⇔ -117.122588
North latitude ⇔ 38.065782
South latitude ⇔ 30.070776
Extent contains the resource ⇔ Yes

Extent
Description
January-April 2005-2015

Temporal extent
Beginning date 2005-01-01 00:00:00
Ending date 2005-04-30 00:00:00

Temporal extent
Beginning date 2006-01-01 00:00:00
Ending date 2006-04-30 00:00:00

Temporal extent
Beginning date 2007-01-01 00:00:00
Ending date 2007-04-30 00:00:00

Temporal extent
Beginning date 2008-01-01 00:00:00
Ending date 2008-04-30 00:00:00

Temporal extent
Beginning date 2009-01-01 00:00:00
Ending date 2009-04-30 00:00:00

Temporal extent
Beginning date 2010-01-01 00:00:00
Ending date 2010-04-30 00:00:00

Temporal extent
Beginning date 2011-01-01 00:00:00
Ending date 2011-04-30 00:00:00

Temporal extent
Beginning date 2012-01-01 00:00:00
Ending date 2012-04-30 00:00:00

Temporal extent
Beginning date 2013-01-01 00:00:00
Ending date 2013-04-30 00:00:00

Temporal extent
Beginning date 2014-01-01 00:00:00
Ending date 2014-04-30 00:00:00

Temporal extent
Beginning date 2015-01-01 00:00:00
Ending date 2015-04-30 00:00:00

Extent in the item's coordinate system
West longitude ⇔ -125.055684
East longitude ⇔ -117.122588
South latitude ⇔ 30.070776
North latitude ⇔ 38.065782
Extent contains the resource ⇔ Yes

Resource Points of Contact ►

Point of contact - originator
Individual's name Karin A. Forney, Ph.D.
Organization's name Southwest Fisheries Science Center

Contact information
►
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Address

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Delivery point 7544 Sandholdt Rd
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Administrative area CA
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e-mail address karin.forney@noaa.gov

Resource Maintenance ►

Resource maintenance
Update frequency as needed

Maintenance contact - originator
Individual's name Karin A. Forney, Ph.D.
Organization's name Southwest Fisheries Science Center

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Resource Constraints ►

Constraints
Limitations of use

The user must be aware of data conditions and ultimately bear responsibility for the appropriate use of the information with respect to possible errors, original map scale, collection methodology, currency of data, and other conditions specific to certain data.

Legal constraints
Limitations of use

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restrictions or intended use. In no event will NMFS be liable to you or to any third party for any direct, indirect, incidental, consequential, special or exemplary damages or lost profit resulting from any use or misuse of this data.

Spatial Reference ►

ArcGIS coordinate system
Type ⇔ Geographic
Geographic coordinate reference ⇔ GCS_WGS_1984
Coordinate reference details ⇔
Geographic coordinate system
Well-known identifier 4326
X origin -400
Y origin -400
XY scale 11258999068426.238
Z origin -100000
Z scale 10000
M origin -100000
M scale 10000
XY tolerance 8.983152841195215e-09
Z tolerance 0.001
M tolerance 0.001
High precision true
Left longitude -180
Latest well-known identifier 4326
Well-known text
GEOGCS["GCS_WGS_1984",DATUM["D_WGS_1984",SPHEROID["WGS_1984",6378137.0,298.257223563]],
PRIMEM["Greenwich",0.0],UNIT["Degree",0.0174532925199433],AUTHORITY["EPSG",4326]]

Reference system identifier
Dimension horizontal
Value ⇔ 4326
Codespace ⇔ EPSG
Version ⇔ 6.14(3.0.1)

Spatial Data Properties ►

Vector
►
Level of topology for this dataset ⇔ geometry only

Geometric objects
Feature class name Dalls_porpoise
Object type ⇔ composite
Object count ⇔ 4852

Data Quality ►

Scope of quality information
►

Resource level dataset

Lineage ►

Lineage statement

For the area defined as the CalCOFI South Stratum: California Cooperative Oceanic Fisheries Investigations (CalCOFI) marine mammal density data were derived from habitat-based density models (HBDM) developed by marine mammal subject matter experts (SME). HBDM output data was migrated to GIS layers that were compliant with the Navy Marine Species Density Database (NMSDD) schema.

The area defined as the "SCI North" stratum was populated with a 0 density value as directed by the US Navy who has surveyed the area.

Process step
►

When the process occurred 2015-05-01 00:00:00

Description

The NMSDD compliant grid layer, which required each cell to be 10^2 km, was produced using the ArcGIS Fishnet tool. The grid data layer was generated using the World Plate Carree projection so that each grid cell would line up with the points generated from any HBDM output. The gridded data layer was created to cover the entire study area. All fields required for the NMSDD were added.

Process contact - processor

Individual's name Ryan Hoopes

Organization's name Southwest Fisheries Science Center

Contact's position GIS Analyst

Contact information
►

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Voice 858-345-1956

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Type both

Delivery point 420 Stevens Ave

City Solana Beach

Administrative area California

Postal code 92075

Country US

e-mail address ryan.hoopes@mantech.com

Process step

When the process occurred 2015-05-15 00:00:00
Description

The following fields were populated using ArcGIS ModelBuilder with inputs provided by subject matter experts (SME): SPECIES, SPECIES_2,STUDY, STRATUM, MODEL_TYPE, SEASON, AREA_SQKM, ABUNDANCE.

The AREA_SQKM field was populated by calculating square kilometers using the ArcGIS geometry calculator.Areas were calculated using the World Cylindrical Equal Area projection.

The ABUNDANCE field was populated by running a field calculation that multiplied the DENSITY and AREA_SQKM fields.

Process contact - processor
Individual's name Ryan Hoopes
Organization's name Southwest Fisheries Science Center
Contact's position GIS Analyst

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Process step

When the process occurred 2015-05-20 00:00:00
Description

Habitat-based Density Model Data:

Original data in csv format produced from habitat-based density models (HBDM) were converted to a point shapefile using ArcGIS.

A spatial join between the points generated from the HBDM csv output and the NMSDD grid data was created in ArcGIS in order to populate the appropriate NMSDD attribute fieds with the HBDM information.

The following fields were calculated from the HBDM information: DENSITY, UNCERTAINTY, AREA_SQKM2, ABUNDANCE2.

The UNCERTAINTY field represents the coefficient of variation (CV) value.

The AREA_SQKM2 and ABUNDANCE2 fields are for Navy internal purposes only and are used to compare the HBDM and NMSDD grid areas since there could be slight variations due to spatial projections.

Process contact - processor
Individual's name Ryan Hoopes
Organization's name Southwest Fisheries Science Center
Contact's position GIS Analyst

Contact information

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Process step

▶

When the process occurred 2015-05-31 00:00:00
Description

Data Layer was projected to the WGS84 Global Coordinate System (GCS).

Data geometry was validated by running ArcGIS topology checks and the check/repair geometry tool.

Attribute values were validated by running a python script to ensure all fields were correctly populated.

Process contact - processor

Individual's name Ryan Hoopes
Organization's name Southwest Fisheries Science Center
Contact's position GIS Analyst

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Process step

▶

When the process occurred 2019-04-16 00:00:00
Description

For distributing data to the public via the CetSound project, we performed the following:
- Made a single shapefile for each species, instead of separate shapefiles for winter and spring
- Calculated STUDY column to "Becker, et al. 2017"
- Calculated SEASON column to "Winter/Spring". While this does not meet Navy standards (Fall, Winter, Spring, Summer), we felt it was important to note the extended season that the data apply to because we are using a single shapefile.
- Removed Navy-specific fields AREA_SQKM2 and ABUNDANCE2
- Removed Shape_Area and Shape_Leng fields
- Updated metadata with input from SME

Process contact - distributor
Individual's name Tim Haverland
Organization's name NMFS Office of Science and Technology
Contact's position IT Specialist

Contact information

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Administrative area MD
Postal code 20910
Country US
e-mail address tim.haverland@noaa.gov
Online resource
Location https://cetsound.noaa.gov
Access protocol https
Function performed information

Source data
▶

Description
CalCOFI 10x10km grid

Source medium name hard disk

Source citation
▶

Title CalCOFI 10x10km grid
Creation date 2015-01-01 00:00:00

Geoprocessing history ▶

Process
Process name
Date 2016-10-25 09:26:37
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CopyFeatures
Command issued

```
CopyFeatures "\\SOLSEATFP01\Groups\ESRI\MMDS\Phase III\Projects\Data_Development\Updates\201610_Update\Data\Shapefiles\Template_Grid_CalCOFI.shp" "\\SOLSEATFP01\Groups\ESRI\MMDS\Phase III\Projects\Data_Development\Updates\201610_Update\Data\CalCOFI_Winter_Update_201610.gdb\Template_Grid_CalCOFI" # 0 0 0
```

Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-25 09:46:52
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued

```
CalculateField Template_Grid_CalCOFI UID [OBJECTID] VB #
```

Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-25 10:03:55
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField Template_Grid_CalCOFI STRATUM "CalCOFI South" VB #
```
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-25 10:04:21
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField Template_Grid_CalCOFI DENSITY NULL VB #
```
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-25 10:04:28
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField Template_Grid_CalCOFI UNCERTAINT NULL VB #
```
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-25 10:04:33
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField Template_Grid_CalCOFI MONTH_NUMB NULL VB #
```
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-25 10:04:39
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField Template_Grid_CalCOFI MONTH_NAME NULL VB #
```

Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-25 10:05:01
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField Template_Grid_CalCOFI UNCER_QUAL NULL VB #
```
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-25 10:05:08
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField Template_Grid_CalCOFI MODEL_VERS NULL VB #
```
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-25 10:05:18
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField Template_Grid_CalCOFI AREA_SQKM2 NULL VB #
```
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-25 10:05:24
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField Template_Grid_CalCOFI ABUNDANCE2 NULL VB #
```
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-25 10:05:30
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued

CalculateField Template_Grid_CalCOFI ABUNDANCE NULL VB #
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-25 10:06:18
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
CalculateField Template_Grid_CalCOFI SPECIES NULL VB #
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-25 10:06:25
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
CalculateField Template_Grid_CalCOFI SPECIES_2 NULL VB #
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-25 10:08:21
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
CalculateField Short_beaked_common_dolphin_spring SPECIES "Short beaked common dolphin" VB #
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-25 10:08:33
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
CalculateField Short_beaked_common_dolphin_spring SPECIES_2 "Delphinus delphis" VB #
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-25 10:08:57

Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField Short_beaked_common_dolphin_spring SEASON "Spring" VB #
```
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-25 10:28:19
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField Short_beaked_common_dolphin_spring ABUNDANCE "[DENSITY] *
[AREA_SQKM]" VB #
```
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-25 11:23:58
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField Short_beaked_common_dolphin_spring ABUNDANCE "[DENSITY] *
[AREA_SQKM]" VB #
```
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-25 11:25:21
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField Short_beaked_common_dolphin_spring STUDY "Becker et al in
prep" VB #
```
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-25 11:25:37
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField Short_beaked_common_dolphin_spring MODEL_TYPE "Habitat based
density model" VB #
```
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-25 11:27:46
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField Humpback_whale_spring SPECIES "Humpback whale" VB #
```
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-25 11:28:00
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField Humpback_whale_spring SPECIES_2 "Megaptera novaeangliae" VB #
```
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-25 11:31:38
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField Humpback_whale_spring ABUNDANCE "[AREA_SQKM] * [DENSITY]" VB
#
```
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-25 11:34:42
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField Dalls_porpoise_spring SPECIES "Dalls porpoise" VB #
```
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-25 11:35:06
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField Dalls_porpoise_spring SPECIES_2 "Phocoenoides dalli" VB #
```
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-25 11:37:24
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField Dalls_porpoise_spring ABUNDANCE "[AREA_SQKM] * [DENSITY]" VB #
```
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-27 13:01:46
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField Dalls_porpoise_spring UID Null VB #
```
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-27 13:14:42
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField Dalls_porpoise_winter SEASON "Winter" VB #
```
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-27 15:03:42
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField Dalls_porpoise_spring SEASON "Spring" VB #
```
Include in lineage when exporting metadata No

Process
Process name
Date 2016-10-27 15:10:25
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\RepairGeometry
Command issued
```
RepairGeometry "\\SOLSEATFP01\Groups\ESRI\MMDS\Phase III\Projects\Data_Development\Updates\201610_Update\Data\CalCOFI_Winter_Update_201610.gdb\Dalls_porpoise_spring" DELETE_NULL
```

Include in lineage when exporting metadata No

Process
Process name
Date 2018-01-05 09:01:43
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField "New Group Layer\Dalls_porpoise_spring" ABUNDANCE "[DENSITY] * [AREA_SQKM]" VB #
```
Include in lineage when exporting metadata No

Process
Process name
Date 2018-01-05 09:01:53
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField "New Group Layer\Dalls_porpoise_spring" ABUNDANCE2 NULL VB #
```
Include in lineage when exporting metadata No

Process
Process name
Date 2018-01-05 09:02:01
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField "New Group Layer\Dalls_porpoise_spring" AREA_SQKM2 NULL VB #
```
Include in lineage when exporting metadata No

Process
Process name
Date 2018-04-30 15:11:51
Tool location c:\program files (x86)\arcgis\desktop10.2\ArcToolbox\Toolboxes\Data Management Tools.tbx\CopyFeatures
Command issued
```
CopyFeatures "E:\ESRI\MMDS\Phase III\Projects\HSTT\Data_Development\Updates\20180105 Winter Densitys\CalCOFI_WinterSpring_Update_20180105.gdb\Humpback_whale_winter" "E:\ESRI\MMDS\Phase III\Projects\HSTT\Data_Development\Updates\20180105 Winter Densitys\CalCOFI_WinterSpring_Update_Shapefiles\Humpback_whale_winter.shp" # 0 0 0
```
Include in lineage when exporting metadata No

Process
Process name
Date 2019-04-16 14:38:26
Tool location c:\program files\arcgis\pro\Resources\ArcToolbox\toolboxes\Data Management Tools.tbx\CopyFeatures
Command issued
```
CopyFeatures "Humpback whale winter" "H:\projects\cetacean mapping\data\CalCOFI_WinterSpring_Becker et al. 2017_Shapefiles\V01\Humpback_whale.shp" # # # #
```
Include in lineage when exporting metadata No

Process
Process name
Date 2019-04-16 14:43:05
Tool location c:\program files\arcgis\pro\Resources\ArcToolbox\toolboxes\Data Management Tools.tbx\DeleteField
Command issued
```
DeleteField Humpback_whale ABUNDANCE2;AREA_SQKM2;Shape_Leng;Shape_Area
```
Include in lineage when exporting metadata No

Process
Process name
Date 2019-04-16 16:33:07
Tool location c:\program files\arcgis\pro\Resources\ArcToolbox\toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField Humpback_whale STUDY "Becker, et al. 2017" "Python 3" #
```
Include in lineage when exporting metadata No

Process
Process name
Date 2019-04-16 16:35:23
Tool location c:\program files\arcgis\pro\Resources\ArcToolbox\toolboxes\Data Management Tools.tbx\CalculateField
Command issued
```
CalculateField Humpback_whale SEASON "Winter/Spring" "Python 3" #
```
Include in lineage when exporting metadata No

Distribution ►

Distributor
►
Contact information - distributor
Individual's name Tim Haverland
Organization's name NMFS Office of Science and Technology

Contact's position IT Specialist

Contact information
▶
Phone
Voice 301-427-8137
Address
Type both
Delivery point 1315 East-West Highway
City Silver Spring
Administrative area MD
Postal code 20910
Country US
e-mail address tim.haverland@noaa.gov
Online resource
Location https://cetsound.noaa.gov
Access protocol https
Function performed information

Distribution format
Name ⇔ Shapefile
Version v10.2
File decompression technique zip

Transfer options
Transfer size ⇔ 1.128

Online source
Location https://cetsound.noaa.gov/packages/swfsc_CalCOFI_WinterSpring_Becker_et_al_2017.zip
Access protocol https
Name swfsc_CalCOFI_WinterSpring_Becker_et_al_2017
Description Zipped shapefiles
Function performed download

Fields ▶

Details for object Dalls_porpoise
▶
Type ⇔ Feature Class
Row count ⇔ 4852
Definition
ESRI

Definition source
ESRI

Field FID

Alias ⇔ FID
Data type ⇔ OID
Width ⇔ 4
Precision ⇔ 0
Scale ⇔ 0

Field description ⇔
Internal feature number.

Description source ⇔
Esri

Description of values ⇔
Sequential unique whole numbers that are automatically generated.

Field SHAPE

Alias ⇔ Shape
Data type ⇔ Geometry
Width ⇔ 0
Precision ⇔ 0
Scale ⇔ 0

Field description ⇔
Feature geometry.

Description source ⇔
Esri

Description of values ⇔
Coordinates defining the features.

Field UID

Alias ⇔ UID

Data type ⇔ Integer
Width ⇔ 9
Precision ⇔ 9
Scale ⇔ 0

Field description

Supposed to be a unique ID Field for species per study area, but has a value of 2000 for all species, so not a useful field

Description source

Naval Undersea Warfare Center (NUWC)

Description of values

Supposed to be a unique ID Field for species per study area, but has a value of 2000 for all species, so not a useful field

Field SPECIES

▶

Alias ⇔ SPECIES
Data type ⇔ String
Width ⇔ 254
Precision ⇔ 0
Scale ⇔ 0

Field description

Species common name

Description source

Naval Undersea Warfare Center (NUWC)

Description of values

Value assigned by staff

Field SPECIES_2

▶

Alias ⇔ SPECIES_2
Data type ⇔ String
Width ⇔ 254
Precision ⇔ 0
Scale ⇔ 0

Field description
Species scientific name

Description source
Naval Undersea Warfare Center (NUWC)

Description of values
Value assigned by staff

Field MONTH_NUMB

Alias ⇔ MONTH_NUMB
Data type ⇔ Integer
Width ⇔ 9
Precision ⇔ 9
Scale ⇔ 0

Field description
Month number 01-12 Value of 0; This field NOT USED because densities are averaged over the survey period.

Description source
Naval Undersea Warfare Center (NUWC)

Description of values
Value of 0; This field NOT USED because densities are averaged over the survey period of multiple months.

Field MONTH_NAME

Alias ⇔ MONTH_NAME
Data type ⇔ String
Width ⇔ 50
Precision ⇔ 0
Scale ⇔ 0

Field description
Month name, e.g. January Empty NOT USED because densities are averaged over the survey period.

Description source
Naval Undersea Warfare Center (NUWC)

Description of values

Empty NOT USED because densities are averaged over the survey period of multiple months.

Field STUDY

▶

Alias ⇔ STUDY
Data type ⇔ String
Width ⇔ 254
Precision ⇔ 0
Scale ⇔ 0

Field description

Source/study information

Description source

Naval Undersea Warfare Center (NUWC)

List of values
Value Becker et al. 2017
Description Becker et al. 2017
Enumerated domain value definition source Southwest Fisheries Science Center

Value Navy Survey
Description Navy Survey
Enumerated domain value definition source Naval Undersea Warfare Center (NUWC)

Field STRATUM

▶

Alias ⇔ STRATUM
Data type ⇔ String
Width ⇔ 50
Precision ⇔ 0
Scale ⇔ 0

Field description

Stratum name. (AKA: Area of Interest, study area etc.).

Description source

Naval Undersea Warfare Center (NUWC)

List of values

Value CalCOFI South
Description CalCOFI South
Enumerated domain value definition source Southwest Fisheries Science Center

Value SCI North Harbor
Description SCI North Harbor
Enumerated domain value definition source Naval Undersea Warfare Center (NUWC)

Field MODEL_TYPE

▶

Alias ⇔ MODEL_TYPE
Data type ⇔ String
Width ⇔ 50
Precision ⇔ 0
Scale ⇔ 0

Field description
Identifies what type of model was used to calculate density (For AFTT these were 'Spatial Extrapolation, Habitat based density model, etc. use recommendation from Elizabeth Becker)

Description source
Naval Undersea Warfare Center (NUWC)

List of values
Value Habitat based density model
Description Habitat based density model
Enumerated domain value definition source Southwest Fisheries Science Center

Value Navy Direction
Description Navy Direction
Enumerated domain value definition source Naval Undersea Warfare Center (NUWC)

Field DENSITY

▶

Alias ⇔ DENSITY
Data type ⇔ Double
Width ⇔ 19
Precision ⇔ 0
Scale ⇔ 0

Field description
Density value (animals/km^2)

Description source
Naval Undersea Warfare Center (NUWC)

Description of values
Use the attribute table statistic tool to get the range of values for this field.

Field UNCERTAINT

▶

Alias ⇔ UNCERTAINT
Data type ⇔ Double
Width ⇔ 19
Precision ⇔ 0
Scale ⇔ 0

Field description
Numerical uncertainty value (CV)

Description source
Southwest Fisheries Science Center

Description of values
Use the attribute table statistic tool to get the range of values for this field.

Field UNCER_QUAL

▶

Alias ⇔ UNCER_QUAL
Data type ⇔ String
Width ⇔ 254
Precision ⇔ 0
Scale ⇔ 0

Field description
Qualitative uncertainty value (description of uncertainty when numerical value is not present or to describe additional qualitative information. Duke used this column to further define the type of model that was used which called back to other documentation that described how the model was run and how it performed);

Description source
Naval Undersea Warfare Center (NUWC)

Description of values

Not used; value always empty

Field MODEL_VERS

▶

Alias ⇔ MODEL_VERS
Data type ⇔ String
Width ⇔ 50
Precision ⇔ 0
Scale ⇔ 0

Field description

Duke created field for tracking Duke models used as input- not needed for NAEMO modeling but may be used for your own internal model tracking

Description source

Naval Undersea Warfare Center (NUWC)

Description of values

Not used; value always empty

Field NAEMO_VERS

▶

Alias ⇔ NAEMO_VERS
Data type ⇔ Integer
Width ⇔ 9
Precision ⇔ 9
Scale ⇔ 0

Field description

Identifies version of data - NAEMO specific. Populate as '01'

Description source

Naval Undersea Warfare Center (NUWC)

List of values
Value 1
Description Always 1
Enumerated domain value definition source Southwest Fisheries Science Center

Field SEASON

▶

Alias ⇔ SEASON
Data type ⇔ String
Width ⇔ 50
Precision ⇔ 0
Scale ⇔ 0

Field description

To be populated to capture season information. Spring, Summer, Fall, Winter Not used; always empty due to data being averaged over multiple seasons (winter/spring)

Description source

Naval Undersea Warfare Center (NUWC)

List of values
Value Winter/Spring
Description January-April
Enumerated domain value definition source Southwest Fisheries Science Center

Field AREA_SQKM

▶

Alias ⇔ AREA_SQKM
Data type ⇔ Single
Width ⇔ 13
Precision ⇔ 0
Scale ⇔ 0

Field description

Area in square kilometers. Features must be projected, calculated and then reprojected to WGS84. Projection must be documented in metadata

Description source

Naval Undersea Warfare Center (NUWC)

Description of values

Use the attribute table statistic tool to get the range of values for this field.

Field ABUNDANCE

▶

Alias ⇔ ABUNDANCE
Data type ⇔ Double
Width ⇔ 19

Precision ⇔ 0
Scale ⇔ 0

Field description
DENSITY*AREA_SQKM

Description source
Southwest Fisheries Science Center

Description of values
Use the attribute table statistic tool to get the range of values for this field.

Metadata Details ►

Metadata language ⇔ English (UNITED STATES)
Metadata character set utf8 - 8 bit UCS Transfer Format

Metadata identifier gov.noaa.nmfs.inport:56126

Scope of the data described by the metadata ⇔ dataset
Scope name ⇔ dataset

Last update ⇔ 2019-05-08

ArcGIS metadata properties
Metadata format ArcGIS 1.0
Metadata style ISO 19139 Metadata Implementation Specification
Standard or profile used to edit metadata ISO19139

Created in ArcGIS for the item 2016-10-27 14:32:15
Last modified in ArcGIS for the item 2019-05-08 15:37:29

Automatic updates
Have been performed Yes
Last update 2019-04-16 14:38:22

Metadata Contacts ►

Metadata contact - distributor
Individual's name Tim Haverland
Organization's name NMFS Office of Science and Technology
Contact's position IT Specialist

Contact information
►

Phone
Voice 301-427-8137
Address
Type both
Delivery point 1315 East-West Highway
City Silver Spring
Administrative area MD
Postal code 20910
Country US
e-mail address tim.haverland@noaa.gov
Online resource
Location https://cetsound.noaa.gov
Access protocol https
Function performed information

Metadata Maintenance ►

Maintenance
Update frequency as needed

Maintenance contact - distributor
Individual's name Tim Haverland
Organization's name NMFS Office of Science and Technology
Contact's position IT Specialist

Contact information
►

Phone
Voice 301-427-8137
Address
Type both
Delivery point 1315 East-West Highway
City Silver Spring
Administrative area MD
Postal code 20910
Country US
e-mail address tim.haverland@noaa.gov
Online resource
Location https://cetsound.noaa.gov
Access protocol https
Function performed information

Thumbnail and Enclosures ►

Thumbnail

Thumbnail type

Image file