

--**TITLE:** Marine Mammal Watch 2015. "Collaborative Research: The Distributed Biological Observatory (DBO)-A Change Detection Array in the Pacific Arctic Region" (NSF)

---AUTHOR(S):

-Name(s) of PI and all co-PIs

-Complete mailing address, telephone/facsimile Nos., web pages and E-mail address of PI

Sue E. Moore

NOAA/PMEL/EcoFOCI

7600 Sand Point Way NE, Bldg.3

Seattle, Washington 98115 USA

Sue.moore@noaa.gov

phone: 206.526.6889

Fax: 206.526.6723

Web Site: <http://www.pmel.noaa.gov/scientist/dr-sue-moore>

Jacqueline M. Grebmeier

Chesapeake Biological Laboratory (CBL)

University of Maryland Center for Environmental Science (UMCES)

Solomons, MD 20688 USA

jgrebmei@umces.edu

phone: 410-326-7334

Fax: 410-326-7341

Web Site: <http://www.umces.edu/cbl/people/jgrebmeier>

Svein Vagle

Institute of Ocean Sciences, Department of Fisheries and Oceans,

P.O. Box 6000

9860 West Saanich Road

Sidney, B.C. V8L 4B2

Canada

Svein.Vagle@dfo-mpo.gc.ca

Phone: 250-363-6339

Web Site: <http://www.pac.dfo-mpo.gc.ca/science/facilities-installations/ios-ism/index-eng.html>

---FUNDING SOURCE AND GRANT NUMBER:

National Science Foundation (NSF) Award Number: 1204082, September 15, 2012 to August 31, 2017 (est).

---DATA SET OVERVIEW:

Marine mammal observations were recorded along-track from the northern Bering Sea (175.21 W, 62.01 N) northward to Barrow Canyon at the boundary of the Chukchi and Beaufort Seas (158.46 W, 71.62 N) aboard R/V *Sir Wilfrid Laurier*, during a July, 2015 research cruise.

Observations include individual mammal species identification and counts, ice-cover percent, sea state, visibility and weather. Marine Mammal Watch observations were made as part of the Distributed Biological Observatory (DBO) to more systematically track the broad biological response to sea ice retreat and associated environmental change. The spatially-explicit DBO

network, five regional biological "hotspot" locations along a latitudinal gradient, is organized through the Pacific Arctic Group (PAG), an international collaboration sanctioned by the International Arctic Science Committee.

-Time period covered by the data: July 14 to 21, 2015

-Physical location of the measurement or platform (latitude/longitude/elevation):

Ship observations gathered along-track, northward from 175.21 W, 62.01 N to 158.46 W, 71.62 N.

-Data source, if applicable (e.g. for operational data include agency)

Science marine mammal observer.

-Any World Wide Web address references (i.e. additional doc such as Project WWW site):

<http://dbo.eol.ucar.edu/> (data repository)

<http://www.arctic.noaa.gov/dbo/cruise-data> (DBO cruise information/data)

---INSTRUMENT DESCRIPTION:

-Brief text (i.e. 1-2 paragraphs) describing the instrument with references

-Figures (or links), if applicable

-Table of specifications (i.e. accuracy, precision, frequency, etc.)

N/A. Data are observations from a marine mammal observer.

---DATA COLLECTION and PROCESSING:

-Description of data collection: Data are observations recorded during a research cruise from the ship's bridge during Marine Mammal Watch shifts.

-Description of derived parameters and processing techniques used.

No derived parameters. Observations are scrutinized for obvious human error. Data are trimmed to within the extent of DBO region. Lines of data are color-coded for residence within a defined DBO region. Data file is cleaned up to clarify title, column headers, add color key, and clearly note observer and vessel. Maps are created for each of DBO regions 1-5, and a full-extent map covering all 5 regions. DBO boxes are drawn, and symbols plotted for each species observed in or near each DBO box.

-Description of quality control procedures:

Observations are scrutinized for obvious human error.

-Data intercomparisons, if applicable N/A

---DATA FORMAT:

-Data file structure, format and file naming conventions (e.g. column delimited ASCII, NetCDF, GIF, JPEG, etc.) :

Excel format data file with 12 columns, including date, time, location, weather and ice observations, species counts and observer comments.

-Data format and layout (i.e. description of header/data records, sample records)

Column names, units/scales, and long names:

Date (day.mo.yr) – date with day, month and year separated by periods

Time (min:sec) – time in minutes and seconds, separated by colon

LAT (N) (deg.dec-min) – latitude North in degrees and decimal minutes

LONG (W) (deg.dec-min) – longitude West in degrees and decimal minutes

RFE (1 to 3) – DBO “Reason for Entry” (1=Station; 2=Position on Search; 3=Sighting on Search)

Ice (decimal %) – Ice Cover in decimal percent

SS (Beaufort Scale) – Sea State

WEA (1 to 8) – DBO weather codes

VIS (1 to 6) – DBO visibility codes (1=< km; 6=unlimited)

SPP (1 to 23) – DBO species codes

No. (count) – number of individuals of a species counted

Comment – observer’s comments

-List of parameters with units, sampling intervals, frequency, range

See above listing.

-Description of flags, codes used in the data, and definitions (i.e. good, questionable, missing, estimated, etc.): Blank spreadsheet cells indicate no animals observed.

Codes used (see list of headers above):

Reason for Entry (RFE)

- 1 = Station
- 2 = Position on Search
- 3 = Sighting on Search

Weather (WEA)

- 1 = clear
- 2 = partly cloudy
- 3 = fog
- 4 = overcast
- 5 = precipitation
- 6 = low ceiling
- 7 = haze
- 8 = glare

Visibility (VIS)

- 1 = < 1 km
- 2 = 1-2 km
- 3 = 2-3 km
- 4 = 3-5 km
- 5 = 5-10 km
- 6 = unlimited

Species

- | | |
|---------------------|--|
| 1 = bowhead whale | 13 = ringed seal |
| 2 = gray whale | 14 = spotted seal |
| 3 = beluga | 15 = ribbon seal |
| 4 = fin whale | 16 = unidentified cetacean |
| 5 = humpback whale | 17 = unidentified pinniped |
| 6 = minke whale | 18 = sperm whale |
| 7 = right whale | 19 = Dall’s porpoise |
| 8 = killer whale | 20 = pacific white-sided dolphin |
| 9 = harbor porpoise | 21 = Steller Sea Lion |
| 10 = polar bear | 22 = fur seal |
| 11 = walrus | 23 = harbor seal |
| 12 = bearded seal | 24 = Northern Right Whale Dolphin (added 2015 Laurier) |

-Data version number and date

Version 1.0, submitted 21 September 2015

---DATA REMARKS:

-PI's assessment of the data (i.e. disclaimers, instrument problems, quality issues, etc.)

Missing data periods:

Data are succinct observations. Observation numbers were low during this cruise, as compared to past years/cruises.

-Software compatibility (i.e. list of existing software to view/manipulate the data)

Data are in Microsoft Excel format (xlsx) and readable via that software. Data can be exported as a plain text file for use with other viewers and software. Images are png format and viewable with most viewers and browsers.

---REFERENCES:

-List of documents cited in this data set description

<http://dbo.eol.ucar.edu/> (data repository)

<http://www.arctic.noaa.gov/dbo/cruise-data> (DBO cruise information/data)

http://www.nsf.gov/awardsearch/showAward?AWD_ID=1204082 (NFS award)