Seabird and marine mammal observations from the Drake Passage transits aboard RV Laurence M Gould (LMG1410, LMG1504, LMG1509) and coastal zone operations from 2014 to 2015.

Website: https://www.bco-dmo.org/dataset/705477
Data Type: Cruise Results
Version: 1
Version Date: 2017-06-19

Project
» Pilot Study: Addition of Biological Sampling to Drake Passage Transits of the "L.M. Gould" (DrakeBioGould)

Contributors	Affiliation	Role
Loeb, Valerie Jean	Moss Landing Marine Laboratories (MLML)	Principal Investigator, Contact
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Abstract
Seabird and marine mammal observations from the Drake Passage transits aboard RV Laurence M Gould (LMG1410, LMG1504, LMG1509) and coastal zone operations from 2014 to 2015.

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Coverage

Spatial Extent: **N**:-54.0093 **E**:-54.7694 **S**:-65.1842 **W**:-67.162
Temporal Extent: 2014 - 2015

Dataset Description

Sea bird and marine mammal observations during Drake Passage transits and coastal zone operations during LMG14-10, LMG15-04, and LMG15-09.

Methods & Sampling

Methodologies are those described in Force et al., 2015.

Visual survey effort for seabirds, marine mammals and environmental conditions (e.g., sea state, sea ice conditions) was conducted continuously during daylight hours when the ship was in transit. An observer worked inside the bridge (starboard side) of the R/V Laurence M. Gould and recorded all sightings onto a computer synced to the ships' data acquisition system. Survey effort covered the Patagonia shelf, central Drake Passage (north and south of the Polar Front), coastal Bransfield Strait, Gerlache Strait, Neumeyer

Channel, and northern waters around King George Island and Elephant Island. Moreover, visual survey effort was conducted during all fishing and CTD operations coinciding with other projects during all three cruises.

Data Processing Description

BCO-DMO Data Processing Notes:

-reformatted column names to comply with BCO-DMO standards
-compiled each deployment into one table

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Data Files

File
visual_survey.csv (Comma Separated Values (.csv), 2.28 KB) MD5:c5ce1a33916ab6a7d1f61b7625bc1ff0 Primary data file for dataset ID 705477

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Parameters

Parameter	Description	Units
deployment	Deployment IDs aboard RV Laurence M Gould	unitless
year	Year sampling took place; YYYY	unitless
month	Month sampling took place; MM	unitless
day	Day of the month that sampling took place; MM	unitless
hours	Number of hours of survey effort	hours
lat	Latitude	decimal degrees
lon	Longitude	decimal degrees

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Deployments

LMG1504

Website	https://www.bco-dmo.org/deployment/705487
Platform	ARSV Laurence M. Gould
Start Date	2015-04-07
End Date	2015-05-11
Description	RV L.M. Gould Drake Passage transects

LMG1509

Website	https://www.bco-dmo.org/deployment/705488
Platform	ARSV Laurence M. Gould
Start Date	2015-10-24
End Date	2015-11-11
Description	RV L.M. Gould Drake Passage transects

LMG1410

Website	https://www.bco-dmo.org/deployment/705486
Platform	ARSV Laurence M. Gould
Start Date	2014-10-27
End Date	2014-11-22
Description	RV L.M. Gould Drake Passage transects

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Project Information

Pilot Study: Addition of Biological Sampling to Drake Passage Transits of the "L.M. Gould" (DrakeBioGould)

Coverage: Drake Passage, South Shetland Islands

PI supplied abstract:

A 50+ year warming trend in the Southern Ocean has been most dramatic in Drake Passage and likely impacts ecosystem structure here. Acoustic Doppler Current Profiler (ADCP) records from multiple NSF “L.M. Gould” supply transits of Drake Passage from 1999 to present demonstrate spatial and temporal variability in acoustics backscattering. Acoustics backscattering strength in the upper water column corresponds to zooplankton and nekton biomass that supports predator populations. However, for much of Drake Passage the identity of taxa contributing to this acoustically detected biomass is not known. This project would introduce a biological component to “L.M. Gould” transits of Drake Passage with the goal of determining the identity of taxa responsible for the backscattering records obtained by ADCP and relating these to higher trophic levels (seabird/marine mammal). Net sampling during spring and fall transits will permit assessment of diel and seasonal changes in the abundance and taxonomic composition of zooplankton and top predators represented between Patagonia and the Antarctic Peninsula. Net samples and depth-referenced video records taken in conjunction with ADCP profiles will permit the identification of the dominant acoustic backscatters in the 3 biogeographic regions represented here, the Subantarctic, Polar Frontal, and Antarctic Zones. The validity of dominant backscattering taxa in the Antarctic Zone will be tested by comparing the ADCP records with abundant zooplankton data collected off the Antarctic Peninsula during January-March 1999-2009 as well with long-term top predator surveys. The broader impacts also included cruise blogs to Moss Landing Marine

Laboratories and Monterey Academy of Oceanographic Science (Monterey High School, Monterey CA) plus involvement with MAOS faculty and students providing first-hand data and insight into marine research in a near real-time format. The faculty used this opportunity to engage students in “real” science while focusing on implementing instruction using the Next Generation Science Standards.

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Funding

Funding Source	Award
NSF Office of Polar Programs (formerly NSF PLR) (NSF OPP)	PLR-1347911

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