Birds from the Northern California Current observed from the R/V New Horizon during NH0005 and NH0007 in the Northeast Pacific in 2000 (NEP project)

Website: https://www.bco-dmo.org/dataset/2337
Data Type: Cruise Results
Version: 1
Version Date: 2005-09-16

Project
» U.S. GLOBEC Northeast Pacific (NEP)

Program
» U.S. GLOBal ocean ECosystems dynamics (U.S. GLOBEC)

Contributors	Affiliation	Role
Ainley, David G.	H.T. Harvey & Associates	Principal Investigator
Tynan, Cynthia	Northwest Fisheries Science Center - Seattle (NOAA NWFSC)	Co-Principal Investigator
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Abstract
Birds from the Northern California Current observed from the R/V New Horizon during NH0005 and NH0007 in the Northeast Pacific in 2000

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Coverage

Spatial Extent: **N**:44.675 **E**:-124.03 **S**:41.87 **W**:-126.132
Temporal Extent: 2000-05-30 - 2000-08-12

Dataset Description

GLOBEC NEP Northern California Current Bird Data
R/V New Horizon cruises NH0005 and 0007

NOTES:
(1) Please see companion file named 'metabirds', which is supporting data for Bird Observations.

(2) The following documentation is extracted from:
David G. Ainley, Larry B. Spear, Cynthia T. Tynan, John A. Barth, Stephen D. Pierce, R. Glenn Ford and Timothy J. Cowles, 2005. Physical and biological variables affecting seabird distributions during the upwelling season of the northern California Current. Deep Sea Research Part II: Topical Studies in Oceanography, Volume 52, Issues 1-2, January 2005, Pages 123-143

As a part of the GLOBEC-Northeast Pacific project, we investigated variation in the abundance of marine birds in the context of biological and physical habitat conditions in the northern portion of the California Current System (CCS) during cruises during the upwelling season 2000. Continuous surveys of seabirds were conducted simultaneously in June (onset of upwelling) and August (mature phase of upwelling).

(3) Caution. Wind speed and direction may not be corrected for ship motion.

(4) Additional documentation, in the form of references, was provided by Dr. Ainley.

L.B. Spear, N. Nur & D.G. Ainley. 1992. Estimating absolute densities of flying seabirds using analyses of relative movement. Auk 109:385-389.
L.B. Spear & D.G. Ainley. 1997. Flight behaviour of seabirds in relation to wind direction and wing morphology. Ibis 139: 221-233.
L.B. Spear & D.G. Ainley. 1997. Flight speed of seabirds in relation to wind speed and direction. Ibis 139: 234-251.
L.B. Spear, D.G. Ainley, B.D. Hardesty, S.N.G. Howell & S.G. Webb. 2004. Reducing biases affecting at-sea surveys of seabirds: use of multiple observer teams. Marine Ornithology 32: 147-157.

Species Codes

Code	Description
AKCA	Cassin's Auklet
AKPA	Parakeet Auklet
AKRH	Rhinoceros Auklet
ALBF	Black-footed Albatross
ALLA	Laysan Albatross
COBR	Brandt's Cormorant
COPE	Pelagic Cormorant
FUNO	Northern Fulmar
GUCA	California Gull
GUGW	Glaucous-winged Gull
GUHR	Heermann's Gull
GUPI	Pigeon Guillemot
GURB	Ring-bill Gull
GUSA	Sabine's Gull
GUWE	Western Gull
JALT	Long-tailed Jaeger
JAPA	Parasitic Jaeger
JAPO	Pomarine Jaeger
LOAR	Pacific Loon
LOCO	Common Loon
MUCO	Common Murre
MUMA	Marbled Murrelet
MUXA	Xantus' Murrelet
PELB	Brown Pelican
PHNO	Red-necked Phalarope
PHRE	Red Phalarope
SHFF	Flesh-footed Shearwater
SHPF	Pink-footed Shearwater
SHSO	Sooty Shearwater
SKMA	South Polar Skua
STFT	Fork-tailed Storm-Petrel
STLE	Leach's Storm-Petrel
TEAR	Arctic Tern

Behavior Codes

Code	Description
1	Flying directionally
2	Sitting on water
3	Feeding

Any questions about the data, please contact the PIs:
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Cyndy Tynan: ctynan@whoi.edu

updated Sept 08. 2005; gfh

Methods & Sampling

Seabird surveys were conducted continuously during daylight, using a 300-m-wide transect strip. Within that strip, birds were counted that occurred within the 90 degree quadrant off the ship's bow that offered the best observation conditions.

Data Processing Description

Observed counts of seabirds recorded as flying in a steady direction were adjusted for the effect of flight speed and direction relative to that of the ship (Spear et al., 1992; Spear and Ainley, 1997b). The effect of such flux is the most serious bias encountered during seabird surveys at sea (Spear et al., 2005). Known as random directional movement (as opposed to nonrandom directional movement, which occurs when birds are attracted or repelled from the survey vessel), this problem usually results in density overestimation because most species fly faster than survey vessels; densities of birds that fly slower or at a similar speed as the survey vessel (e.g., storm-petrels), or are flying in the same direction, are usually underestimated (Spear et al., 1992)

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Data Files

File
birds.csv (Comma Separated Values (.csv), 332.65 KB) MD5:868efb7097222923d633c28fca364eb8 Primary data file for dataset ID 2337

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Parameters

Parameter	Description	Units
yrday_local	Yearday based on Julian calendar, local time.	dimensionless
month_local	Month of year, local time (01-12).	dimensionless
day_local	Day of month, local time (01-31).	dimensionless
trans_id	Identification number for transect,	dimensionless
trans_no	Transect number, year day and transect number for that day.	dimensionless
species	Species code. (see above)	dimensionless
number	Unadjusted number of birds recorded.	integer (count)
number_adj	Number of birds recorded after adjustment for the effect of bird movement relative to that of the ship (flux).	dimensionless
lat	Latitude at beginning of the transect, negative = South	decimal degrees
lon	Longitude at beginning of the transect, negative = West	decimal degrees
head_c	Ship course given as compass direction to the nearest 10 degrees,divided by 10. (e.g., a course of 180 degrees is recorded as 18).	degrees
area	Ocean area surveyed in that transect.	kilometers2
wspd	Wind speed.	knots
flight_dir	Flight direction to nearest 10 degrees, divided by 10.	degrees
behav_code	Bird behavior (see below for explanation of code).	dimensionless
year	Four-digit year.	dimensionless

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Instruments

Dataset-specific Instrument Name	Binoculars, Handheld
Generic Instrument Name	Binoculars Handheld
Generic Instrument Description	Handheld binoculars, generally used for bird or mammal observations.

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Deployments

NH0005

Website	https://www.bco-dmo.org/deployment/57557
Platform	R/V New Horizon
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/nh0005/nh0005cr.pdf
Start Date	2000-05-28
End Date	2000-06-13
Description	**Methods & Sampling** Seabird surveys were conducted continuously during daylight, using a 300-m-wide transect strip. Within that strip, birds were counted that occurred within the 90 degree quadrant off the ship's bow that offered the best observation conditions. **Processing Description** Observed counts of seabirds recorded as flying in a steady direction were adjusted for the effect of flight speed and direction relative to that of the ship (Spear et al., 1992; Spear and Ainley, 1997b). The effect of such flux is the most serious bias encountered during seabird surveys at sea (Spear et al., 2005). Known as random directional movement (as opposed to nonrandom directional movement, which occurs when birds are attracted or repelled from the survey vessel), this problem usually results in density overestimation because most species fly faster than survey vessels; densities of birds that fly slower or at a similar speed as the survey vessel (e.g., storm-petrels), or are flying in the same direction, are usually underestimated (Spear et al., 1992)

NH0007

Website	https://www.bco-dmo.org/deployment/57558
Platform	R/V New Horizon
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/nh0007/nh0007cr.pdf
Start Date	2000-07-27
End Date	2000-08-12
Description	**Methods & Sampling** Seabird surveys were conducted continuously during daylight, using a 300-m-wide transect strip. Within that strip, birds were counted that occurred within the 90 degree quadrant off the ship's bow that offered the best observation conditions. **Processing Description** Observed counts of seabirds recorded as flying in a steady direction were adjusted for the effect of flight speed and direction relative to that of the ship (Spear et al., 1992; Spear and Ainley, 1997b). The effect of such flux is the most serious bias encountered during seabird surveys at sea (Spear et al., 2005). Known as random directional movement (as opposed to nonrandom directional movement, which occurs when birds are attracted or repelled from the survey vessel), this problem usually results in density overestimation because most species fly faster than survey vessels; densities of birds that fly slower or at a similar speed as the survey vessel (e.g., storm-petrels), or are flying in the same direction, are usually underestimated (Spear et al., 1992)

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Project Information

U.S. GLOBEC Northeast Pacific (NEP)

Website: http://nepglobec.bco-dmo.org

Coverage: Northeast Pacific Ocean, Gulf of Alaska

Program in a Nutshell

Goal: To understand the effects of climate variability and climate change on the distribution, abundance and production of marine animals (including commercially important living marine resources) in the eastern North Pacific. To embody this understanding in diagnostic and prognostic ecosystem models, capable of capturing the ecosystem response to major climatic fluctuations.

Approach: To study the effects of past and present climate variability on the population ecology and population dynamics of marine biota and living marine resources, and to use this information as a proxy for how the ecosystems of the eastern North Pacific may respond to future global climate change. The strong temporal variability in the physical and biological signals of the NEP will be used to examine the biophysical mechanisms through which zooplankton and salmon populations respond to physical forcing and biological interactions in the coastal regions of the two gyres. Annual and interannual variability will be studied directly through **long-term observations** and detailed **process studies**; variability at longer time scales will be examined through **retrospective analysis** of directly measured and proxy data. Coupled **biophysical models** of the ecosystems of these regions will be developed and tested using the process studies and data collected from the long-term observation programs, then further tested and improved by hindcasting selected retrospective data series.

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Program Information

U.S. GLOBal ocean ECosystems dynamics (U.S. GLOBEC)

Website: http://www.usglobec.org/

Coverage: Global

U.S. GLOBEC (GLOBal ocean ECosystems dynamics) is a research program organized by oceanographers and fisheries scientists to address the question of how global climate change may affect the abundance and production of animals in the sea.

The U.S. GLOBEC Program currently had major research efforts underway in the Georges Bank / Northwest Atlantic Region, and the Northeast Pacific (with components in the California Current and in the Coastal Gulf of Alaska). U.S. GLOBEC was a major contributor to International GLOBEC efforts in the Southern Ocean and Western Antarctic Peninsula (WAP).

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Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-0534609
National Oceanic and Atmospheric Administration (NOAA)	unknown NEP NOAA

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