

SCANFISH data from R/V Pelican cruises PE03-NGOMEX, PE04-NGOMEX, PE06-NGOMEX, PE07-NGOMEX, PE09-05, PE11-06 in the Northern Gulf of Mexico, 28-30N 89-94W; 2003-2010 (GoMX NGOMEX project)

Website: <https://www.bco-dmo.org/dataset/3549>

Version: 27 September 2011

Version Date: 2011-09-27

Project

» [NGOMEX - Living Marine Resources of the Northern Gulf of Mexico](#) (GoMX - NGOMEX)

Program

» [Gulf of Mexico - Deepwater Horizon Oil Spill](#) (GoMX - DHOS)

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Table of Contents

- [Dataset Description](#)
 - [Methods & Sampling](#)
 - [Data Processing Description](#)
- [Data Files](#)
- [Parameters](#)
- [Instruments](#)
- [Deployments](#)
- [Project Information](#)
- [Program Information](#)
- [Funding](#)

Dataset Description

Mult year SCANFISH data

Methods & Sampling

[SCANFISH System Description \(.pdf\)](#)

Data Processing Description

Generated from SCANFISH .xlsx files contributed by Jamie Pierson

Scanfish CTD data were processed using the Sea-Bird Data Processing routines to filter, align, and bin-average data. In 2003 and 2004 dissolved oxygen was calibrated using a two step process. First, the shipboard CTD

data was calibrated to niskin bottle samples using a Winkler titration performed in the lab of Nancy Rabalais. Then the Scanfish CTD were cross-calibrated to the shipboard CTD. In subsequent years, the shipboard CTD was pre-calibrated before our cruises, and we cross-calibrated the shipboard and Scanfish CTDs. The calibration between the Scanfish and shipboard CTDs was done in excel using a regression analysis to compare data from the same depths between the two instruments.

[[table of contents](#) | [back to top](#)]

Data Files

File
SCANFISH.csv (Comma Separated Values (.csv), 406.49 MB) MD5:d58e32b4166939df49445dd0f6dce5c4 Primary data file for dataset ID 3549

[[table of contents](#) | [back to top](#)]

Parameters

Parameter	Description	Units
Id	Scanfish Transect Id	text
date	date (GMT)	YYYYMMDD
time	time(GMT)	HHMMSS.00
lon	longitude (West is negative)	decimal degrees
lat	latitude (South is negative)	decimal degrees
Pressure	Pressure	decibars
Depth	Depth	meters
Temperature	Temperature	degrees celcius
Salinity	Salinity	PSU
Density	Density	kg/m ³
Oxygen	Oxygen	mg/l
Oxygen_Corrected	Oxygen Corrected	mg/l
CDOM	Colored dissolved organic matter (CDOM)	mg/m ³
Fluor_CDOM	Fluor CDOM	mg/m ³
Fluor_WetStar	Fluor WetStar	mg/m ³
Backscatter	Backscatter	volts
Chlorophyll_Conc	Wet Star Chlorophyll Conc	ug/l
Year	Year of data collection	yyyy

[[table of contents](#) | [back to top](#)]

Instruments

Dataset-specific Instrument Name	Scanfish
Generic Instrument Name	Scanfish
Generic Instrument Description	The Scanfish is a remotely operated, towed, undulating vehicle system designed for collecting 3D profile data of the water column. It includes a Conductivity, Temperature, Depth (CTD) profiler as part of the instrument package. The Scanfish housing has fins to allow it to dive and rise, an altimeter to determine the depth of the unit, a pump that moves water through the system and a data cable that reports data back to the ship as the fish is being towed through the water behind the vessel. The Scanfish can be configured with additional sensors, e.g. fluorometer.

[[table of contents](#) | [back to top](#)]

Deployments

PE03-NGOMEX

Website	https://www.bco-dmo.org/deployment/58120
Platform	R/V Pelican
Start Date	2003-06-30
End Date	2003-08-05
Description	<p>2003 Sampling cruise to the Northern Gulf of Mexico Note: Deployment Id assigned by BCO-DMO staff (not official)</p> <p>Processing Description BCO-DMO Processing Notes BCO-DMO Pass 1 Processing Description: - SCANFISH for years 2003, 2004, 2006, 2007, 2008, 2010 processed - Original data for individual years were reformatted to a BCO-DMO format as reported using either excel or an awk - Parameters/Data for the individual years were compared and a common set of parameters for all years was generated - Pass 1 data were then formatted to the Pass 2 or common data format using awk: NGOMEX_20[xx]_Fix_BCODMO_Scanfish.awk BCO-DMO Pass 2 Processing Description: - Because of the nature of the original data reporting, an awk was generated for each individual year - A common header record was output for each year's worth of data - All parameters reformatted to a set of parameters common to all NGOMEX SACFISH data - All parameters o/p in the same order - All decimal places reported to the same number - Data for parameters for which no data were reported for a particular year o/p as "nd"</p>

PE04-NGOMEX

Website	https://www.bco-dmo.org/deployment/58121
Platform	R/V Pelican
Start Date	2004-07-28
End Date	2004-08-02
Description	<p>2004 Sampling cruise to the Northern Gulf of Mexico Note: Deployment Id assigned by BCO-DMO staff (not official)</p> <p>Processing Description BCO-DMO Processing Notes BCO-DMO Pass 1 Processing Description: - SCANFISH for years 2003, 2004, 2006, 2007, 2008, 2010 processed - Original data for individual years were reformatted to a BCO-DMO format as reported using either excel or an awk - Parameters/Data for the individual years were compared and a common set of parameters for all years was generated - Pass 1 data were then formatted to the Pass 2 or common data format using awk: NGOMEX_20[xx]_Fix_BCODMO_Scanfish.awk BCO-DMO Pass 2 Processing Description: - Because of the nature of the original data reporting, an awk was generated for each individual year - A common header record was output for each year's worth of data - All parameters reformatted to a set of parameters common to all NGOMEX SACFISH data - All parameters o/p in the same order - All decimal places reported to the same number - Data for parameters for which no data were reported for a particular year o/p as "nd"</p>

PE06-NGOMEX

Website	https://www.bco-dmo.org/deployment/58122
Platform	R/V Pelican
Start Date	2006-08-04
End Date	2006-08-13
Description	<p>2006 Sampling cruise to the Northern Gulf of Mexico Note: Deployment Id and Chief Scientist assigned by BCO-DMO staff (not official)</p> <p>Processing Description BCO-DMO Processing Notes BCO-DMO Pass 1 Processing Description: - SCANFISH for years 2003, 2004, 2006, 2007, 2008, 2010 processed - Original data for individual years were reformatted to a BCO-DMO format as reported using either excel or an awk - Parameters/Data for the individual years were compared and a common set of parameters for all years was generated - Pass 1 data were then formatted to the Pass 2 or common data format using awk: NGOMEX_20[xx]_Fix_BCODMO_Scanfish.awk BCO-DMO Pass 2 Processing Description: - Because of the nature of the original data reporting, an awk was generated for each individual year - A common header record was output for each year's worth of data - All parameters reformatted to a set of parameters common to all NGOMEX SACFISH data - All parameters o/p in the same order - All decimal places reported to the same number - Data for parameters for which no data were reported for a particular year o/p as "nd"</p>

PE07-NGOMEX

Website	https://www.bco-dmo.org/deployment/58123
Platform	R/V Pelican
Start Date	2007-07-21
End Date	2007-08-07
Description	<p>2007 Sampling cruise to the Northern Gulf of Mexico Note: Deployment Id and Chief Scientist assigned by BCO-DMO staff (not official)</p> <p>Processing Description BCO-DMO Processing Notes BCO-DMO Pass 1 Processing Description: - SCANFISH for years 2003, 2004, 2006, 2007, 2008, 2010 processed - Original data for individual years were reformatted to a BCO-DMO format as reported using either excel or an awk - Parameters/Data for the individual years were compared and a common set of parameters for all years was generated - Pass 1 data were then formatted to the Pass 2 or common data format using awk: NGOMEX_20[xx]_Fix_BCODMO_Scanfish.awk BCO-DMO Pass 2 Processing Description: - Because of the nature of the original data reporting, an awk was generated for each individual year - A common header record was output for each year's worth of data - All parameters reformatted to a set of parameters common to all NGOMEX SACFISH data - All parameters o/p in the same order - All decimal places reported to the same number - Data for parameters for which no data were reported for a particular year o/p as "nd"</p>

PE09-05

Website	https://www.bco-dmo.org/deployment/58124
Platform	R/V Pelican
Start Date	2008-08-01
End Date	2008-08-12
Description	<p>2008 Sampling cruise to the Northern Gulf of Mexico Note: Cruise ID confirmed with R2R catalog Original cruise data are available from the NSF R2R data catalog</p> <p>Processing Description BCO-DMO Processing Notes BCO-DMO Pass 1 Processing Description: - SCANFISH for years 2003, 2004, 2006, 2007, 2008, 2010 processed - Original data for individual years were reformatted to a BCO-DMO format as reported using either excel or an awk - Parameters/Data for the individual years were compared and a common set of parameters for all years was generated - Pass 1 data were then formatted to the Pass 2 or common data format using awk: NGOMEX_20[xx]_Fix_BCODMO_Scanfish.awk BCO-DMO Pass 2 Processing Description: - Because of the nature of the original data reporting, an awk was generated for each individual year - A common header record was output for each year's worth of data - All parameters reformatted to a set of parameters common to all NGOMEX SACFISH data - All parameters o/p in the same order - All decimal places reported to the same number - Data for parameters for which no data were reported for a particular year o/p as "nd"</p>

PE11-06

Website	https://www.bco-dmo.org/deployment/58640
Platform	R/V Pelican
Start Date	2010-09-01
End Date	2010-09-07
Description	<p>2010 Sampling cruise to the Northern Gulf of Mexico Note: Cruise ID confirmed with R2R catalog Original cruise data are available from the NSF R2R data catalog</p> <p>Processing Description BCO-DMO Processing Notes BCO-DMO Pass 1 Processing Description: - SCANFISH for years 2003, 2004, 2006, 2007, 2008, 2010 processed - Original data for individual years were reformatted to a BCO-DMO format as reported using either excel or an awk - Parameters/Data for the individual years were compared and a common set of parameters for all years was generated - Pass 1 data were then formatted to the Pass 2 or common data format using awk: NGOMEX_20[xx]_Fix_BCODMO_Scanfish.awk BCO-DMO Pass 2 Processing Description: - Because of the nature of the original data reporting, an awk was generated for each individual year - A common header record was output for each year's worth of data - All parameters reformatted to a set of parameters common to all NGOMEX SACFISH data - All parameters o/p in the same order - All decimal places reported to the same number - Data for parameters for which no data were reported for a particular year o/p as "nd"</p>

[[table of contents](#) | [back to top](#)]

Project Information

NGOMEX - Living Marine Resources of the Northern Gulf of Mexico (GoMX - NGOMEX)

Coverage: Northern Gulf of Mexico, 28-30N 89-94W

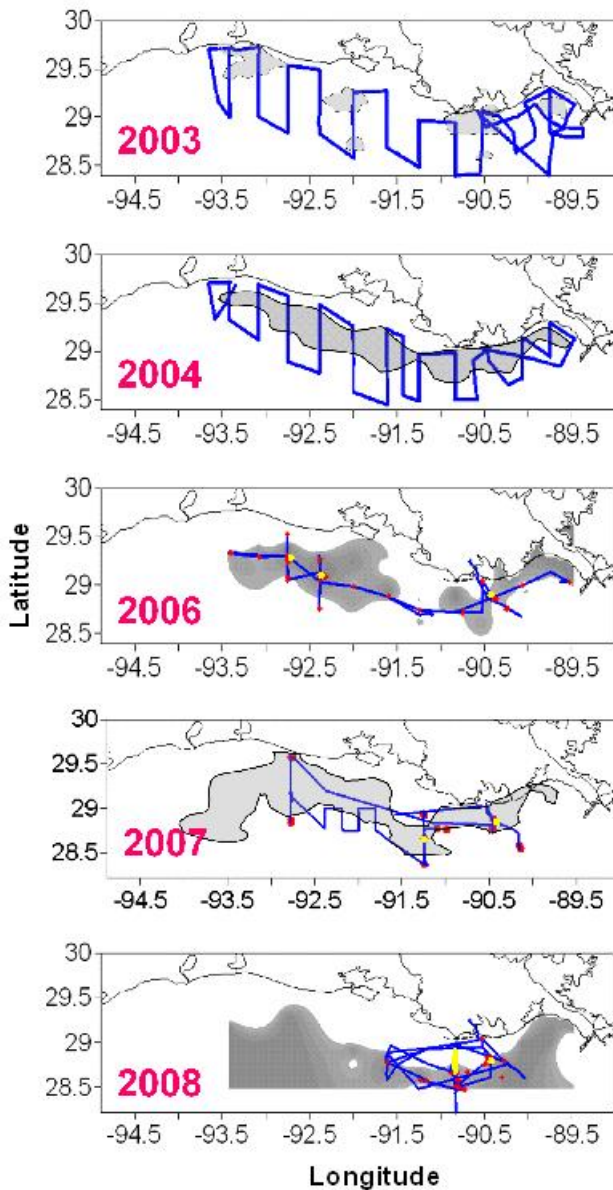
NGOMEX - Living Organisms of the Northern Gulf of Mexico

A synthesis of data collected in the Northern Gulf of Mexico from 2003-2004, 2006-2008 and 2010

Data include:

- CTD Profiles
- Rosette Samples
- MIDAS underway meteorological
- Towed SCANFISH
- Net Trawls
- Zooplankton counts

High-resolution mapping of the major ecosystem components of the NGOMEX by year



References:

Kimmel, D. G., W. C. Boicourt, J. J. Pierson, M. R. Roman, X. Zhang. 2010. The vertical distribution and diel variability of mesozooplankton biomass, abundance and size in response to hypoxia in the northern Gulf of Mexico USA. *Journal of Plankton Research* 32(8): 1185-1202. doi:10.1093/plankt/fbp136

Pierson, J. J., M. R. Roman, D. G. Kimmel, W. C. Boicourt, & X. Zhang. 2009. Quantifying changes in the vertical distribution of mesozooplankton in response to hypoxic bottom waters. *Journal of Experimental Marine Biology and Ecology* 381: S74-S79. doi.org/10.1016/j.jembe.2009.07.013

Kimmel, D. G., W. C. Boicourt, J. J. Pierson, M. R. Roman, & X. Zhang. 2009. A comparison of the mesozooplankton response to hypoxia in Chesapeake Bay and the northern Gulf of Mexico using the biomass size spectrum. *Journal of Experimental Marine Biology and Ecology* 381: S65-S73. doi.org/10.1016/j.jembe.2009.07.012

Zhang, H., S. A. Ludsins, D. M. Mason, A. T. Adamack, S. B. Brandt, X. Zhang, D. G. Kimmel, M. R. Roman, & W. C. Boicourt. 2009. Hypoxia-driven changes in the behavior and spatial distribution of pelagic fish and mesozooplankton in the northern Gulf of Mexico. *Journal of Experimental Marine Biology and Ecology*. 381: S80-91. <http://dx.doi.org/10.1016/j.jembe.2009.07.014>

Program Information

Gulf of Mexico - Deepwater Horizon Oil Spill (GoMX - DHOS)

Coverage: Northern Gulf of Mexico

Grants for Rapid Response Research (RAPID)

The RAPID funding mechanism is used for proposals having a severe urgency with regard to availability of, or access to data, facilities or specialized equipment, including quick-response research on natural or anthropogenic disasters and similar unanticipated events.

GOM - Broader Impacts

The need to understand the impact of this largest oil spill to date on ecosystems and biochemical cycling is self evident. The consequences of the disaster and accompanying clean up measures (e.g. the distribution of dispersants) need to be evaluated to guide further mediating measures and to develop and improve responses to similar disasters in the future. Would it be advantageous if such oil aggregates sink, or should it rather remain suspended? Possibly measures can be developed to enhance sinking or suspension (e.g. addition of ballast minerals) once we understand their current formation and fate. Understanding the particle dynamics following the input of large amounts of oil and dispersants into the water is a prerequisite to develop response strategies for now and in the future.

[[table of contents](#) | [back to top](#)]

Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-1043261
NSF Division of Ocean Sciences (NSF OCE)	OCE-1043248
NSF Division of Ocean Sciences (NSF OCE)	OCE-1043249

[[table of contents](#) | [back to top](#)]