NOAA SEAMAP 2015 Cruise Stations collected from the R/V Oregon II during the 2015 NOAA Seamap Fall Groundfish Survey in the Gulf of Mexico (OtolithHypoxia project)

Website: https://www.bco-dmo.org/dataset/652752
Data Type: Cruise Results
Version: working on final
Version Date: 2016-07-28

Project
» Collaborative Research: Consequences of sub-lethal hypoxia exposure for teleosts tracked with biogeochemical markers: a trans-basin comparison (OtolithHypoxia)

Contributors	Affiliation	Role
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Dataset Description

Data include NOAA SEAMAP Fall Groundfish Survey Station data. Station latitude, longitude, and time of trawl start is included.

Methods & Sampling

Trawls were conducted by the NOAA SEAMAP Fall Groundfish Survey according to a stratified random sampling design using a standard SEAMAP 40’ net.

At each station, 30-50 Atlantic croaker (Micropogonias undulatus) were retained for this project.

Further details about sampling protocols can be found online at the GULF STATES MARINE FISHERIES COMMISSION site : http://www.gsmfc.org/seamap-gomrs.php

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Data Files

File
Sampling_Sites_2015.csv (Comma Separated Values (.csv), 1.44 KB) MD5:06865aba371fe629fc49a800143a1304 Primary data file for dataset ID 652752

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Parameters

Parameter	Description	Units
SEAMAP_station_id	NOAA SEAMAP Station number (3 digit code)	unitless
station_id	Station identifier (project-specific station identifier, 2 digit code)	decimal degrees
lat	latitude	decimal degrees
lon	longitude; west is negative	decimal degrees
date_utc	date (UTC) of trawl in format "mm/dd/yyyy"	unitless
time_utc	time (UTC) of trawl in format hh:mm:ss	unitless
ISO_DateTime_UTC	ISO UTC Date and Time in format YYYY-MM-DDTHH:MM:SS[.xx]Z	unitless

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Instruments

Dataset-specific Instrument Name	Seamap 40' net
Generic Instrument Name	Trawl_custom
Generic Instrument Description	A net towed through the water column designed to sample free-swimming nekton or fish, varies in design depending on the research project.

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Deployments

2015_NOAA_Seamap_Fall_Groundfish_Survey

Website	https://www.bco-dmo.org/deployment/652751
Platform	R/V Oregon II
Start Date	2015-10-08
End Date	2015-11-22
Description	For more information about this cruise see the "NOAA OFFICE of MARINE & AVIATION OPERATIONS" page: http://www.omao.noaa.gov/find/projects/3421-southeast-area-monitoring-an...

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Project Information

Collaborative Research: Consequences of sub-lethal hypoxia exposure for teleosts tracked with biogeochemical markers: a trans-basin comparison (OtolithHypoxia)

Coverage: Northern Gulf of Mexico, Baltic Sea, and Lake Erie

Description from NSF award abstract:
Hypoxia occurs when dissolved oxygen concentrations in aquatic habitats drop below levels required by living

organisms. The increased frequency, duration and intensity of hypoxia events worldwide have led to impaired health and functioning of marine and freshwater ecosystems. Although the potential impacts of hypoxic exposure are severe, there is little known about the consequences of systemic, sub-lethal exposure to hypoxic events for populations and communities of fishes. The objective of this project is to determine whether sub-lethal exposure to hypoxia during early life stages leads to poor growth and hence increased mortality. This project will use "environmental fingerprint" methods in fish ear stones (otoliths) retrospectively to identify periods of hypoxia exposure. The project will compare consequences of hypoxia exposure in different fish species from the Gulf of Mexico, the Baltic Sea, and Lake Erie, thus examining the largest anthropogenic hypoxic regions in the world spanning freshwater, estuarine, and marine ecosystems.

This project will employ long-term, permanent markers incorporated into fish otoliths to identify life-long patterns of sub-lethal hypoxia exposure far beyond time spans currently achievable using molecular markers. This work will capitalize on patterns of geochemical proxies such as Mn/Ca and I/Ca incorporated into otoliths and analyzed using laser ablation inductively coupled plasma mass spectrometry to identify patterns of sub-lethal hypoxia exposure. The investigators will then determine whether exposure results in differential growth and survival patterns compared to non-exposed fish by tracking cohorts over time and identifying characteristics of survivors. Because this work involves multiple species in multiple hypoxic regions, it will allow cross-system comparisons among unique ecosystems. The results from this project will thus provide unprecedented insight into effects of hypoxia exposure in three major basins using novel biogeochemical proxies, thereby paving the way for a fuller understanding of the impacts of "dead zones" on coastal resources.

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Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-1433679

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