Benthic habitat correlates of juvenile fish and invertebrates from the F/V North Star NEC-MD2001-1 from the the Western GoM Closed Area (NEC-CoopRes project)

Website: https://www.bco-dmo.org/dataset/2783
Data Type: Cruise Results
Version: 1
Version Date: 2006-12-06

Project
» Northeast Consortium: Cooperative Research (NEC-CoopRes)

Program
» NorthEast Consortium (NEC)

Contributors	Affiliation	Role
Dionne, Michele		Principal Investigator
Copley, Nancy	Woods Hole Oceanographic Institution (WHOI BCO-DMO)	BCO-DMO Data Manager

Abstract
Benthic habitat correlates of juvenile fish and invertebrates from the F/V North Star NEC-MD2001-1 from the the Western GoM Closed Area (NEC-CoopRes project)

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Coverage

Spatial Extent: **N**:43.48435 **E**:-70.02152 **S**:43.02813 **W**:-70.6852
Temporal Extent: 2002-06-19 - 2003-08-08

Dataset Description

"Benthic Habitat Correlates of Juvenile Fish Distribution in the Bigelow Bight and Adjacent Estuaries"

Principle Investigator: Michele Dionne. Wells National Estuarine Research Reserve
Research Associate: Jeremy Miller Wells National Estuarine Research Reserve

Additional Project Participants:
Vincent Balzano, Commercial Fisherman, F/V North Star
Richard MacKenzie, Researcher
Scott Orringer, Researcher
Jeff Reed, Commercial Fisherman
Kenneth Young, Commercial Fisherman
Marshall Alexander, Commercial Fisherman, F/V Dee Dee Mae II

"This study represents a collaboration between researchers and members of the Gulf of Maine fishing industry

to survey juvenile groundfish distribution and abundance along transects from estuarine through inner shelf areas of the Bigelow Bight. The project will characterize associated substrate and prey availability in order to determine fisheries habitat resources with the region. The project will feature the use of a sediment profile imager (known as an SPI camera), a device which takes photos of substrates and associated organisms both from a surface and from a profile view to depths up to 1 ft. This technique will be combined with traditional research sampling methods for fish (small mesh trap nets, beam trawls, and variable mesh gill nets) and benthos (Ponar grab sampler). The survey design will compare fish, benthos, and substrates between estuarine, nearshore and offshore areas, including sites within these zones that have been altered by human activities (i.e. dumping of dredge material, outfall of treated sewage, and bottom trawling). Traditional cod spawning and feeding grounds and a closed area (Jeffrey's Ledge) are included in the survey. Results of the study will provide much-needed data to determine estuarine and inner shelf fish habitat associations, the food resource value of these habitats, and their response to current and previous human alterations." *abstract from the Northeast Consortium Project database*

Site Codes:
BB = Bigelow Bight
CN = Cape Neddick
JL = Jeffery's Ledge
KB and KR = Kennebunk River
PR = Piscataqua River
PRE = Piscataqua River Estuary
SR = Saco River
SRE = Saco River Estuary
WH and WR = Webhanet River
WI = Wood Island, near the mouth of the Saco River 20 individuals were measured for each species and the remaining were counted for biomass purposes. This accounts for the "no measure" seen in the notes column.

revised 08/11/06, gfh

Methods & Sampling

Results thus far are based on analysis of video data taken via ROV in sites both inside and outside the WGOMC. Five sites were investigated in the two year portion of the WGOMC, with three to five ROV stations/site, and four sites in the actively trawled Kettle, with three ROV stations/site. All sessile, or weakly mobile, invertebrates were identified and quantified in each ROV transect in frames where the ROV was positioned on the bottom. Due to unequal numbers of frames in some transects, numbers were standardized to 50 frames. Non-parametric multi-dimensional scaling (NMDS) was used to investigate similarities in epifaunal species diversity and abundances. ANOSIM analysis found a p-value of 0.08, thus our plot suggests a weakly significant partitioning between closed and open stations.

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Data Files

File
inverts_MD.csv (Comma Separated Values (.csv), 434.05 KB) MD5:4fd82b84bd504bcda66d63cefc855616 Primary data file for dataset ID 2783

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Parameters

Parameter	Description	Units
year	year, reported as YYYY	
site	The site each sample was taken, including all replicates. Site Codes: BB = Bigelow Bight, CN = Cape Neddick, JL = Jeffery's Ledge, KB and KR = Kennebunk River, PR = Piscataqua River, PRE = Piscataqua River Estuary, SR = Saco River, SRE = Saco River estuary, WH and WR = Webhanet River, WI = Wood Island, near the mouth of the Saco River.	
date_local	Date sample was collected, local time	
taxon	Taxa or scientific name of the individual organism (lowest taxonomic classification possible)	
lat	The latitude where the sample was collected in decimal degrees. North is Positive.	
lon	The longitude where the sample was collected in decimal degrees. West is Negative.	
length	length of organism based on criteria set above, as millimeters	
width	width of organism based on criteria set above, as millimeters	
number	number of organisms of a particular size and species found	
abundance	number of organisms per meter squared. This is the corrected number of organisms of a given size class that are in a one meter square area of habitat. This number is derived by multiplying the number from the "number" column by the number of quadrates taken from the original sample and then dividing by the area sampled. Example: If you took a grab sample, split it into four parts and only possessed one of the four sub-samples then you would have to multiply your results by four to see the number for your entire sample.	
comments	This column contains useful information on given samples or organisms such as problems with measurements or identification or notes about possible mislabeling of samples, etc.20 individuals were measured for each species and the remaining were counted for biomass purposes. This accounts for the "no measure" seen in the notes column.	

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Instruments

Dataset-specific Instrument Name	Remotely Operated Vehicle
Generic Instrument Name	Remotely Operated Vehicle
Dataset-specific Description	sediment profile camera imager (SPI camera)
Generic Instrument Description	Remotely operated underwater vehicles (ROVs) are unoccupied, highly maneuverable underwater robots operated by a person aboard a surface vessel. They are linked to the ship by a group of cables that carry electrical signals back and forth between the operator and the vehicle. Most are equipped with at least a video camera and lights. Additional equipment is commonly added to expand the vehicle's capabilities. These may include a still camera, a manipulator or cutting arm, water samplers, and instruments that measure water clarity, light penetration, and temperature.

Dataset-specific Instrument Name	Camera - Sediment Profile Imaging
Generic Instrument Name	Sediment Profile Imager
Generic Instrument Description	Sediment profile imagers provide in-situ still or video images of a section including bottom water, the undisturbed sediment-water interface and the upper sediment layers.

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Deployments

NEC-MD2001-1

Website	https://www.bco-dmo.org/deployment/57758
Platform	F/V North Star
Report	http://www.northeastconsortium.org/ProjectFileDownload.pm?report_id=77&table=project_report
Start Date	2002-06-11
End Date	2003-08-08
Description	Other fishing vessels were used as well: F/V Dee Dee Mae II and possibly others. **Methods & Sampling** Results thus far are based on analysis of video data taken via ROV in sites both inside and outside the WGOMC. Five sites were investigated in the two year portion of the WGOMC, with three to five ROV stations/site, and four sites in the actively trawled Kettle, with three ROV stations/site. All sessile, or weakly mobile, invertebrates were identified and quantified in each ROV transect in frames where the ROV was positioned on the bottom. Due to unequal numbers of frames in some transects, numbers were standardized to 50 frames. Non-parametric multi-dimensional scaling (NMDS) was used to investigate similarities in epifaunal species diversity and abundances. ANOSIM analysis found a p-value of 0.08, thus our plot suggests a weakly significant partitioning between closed and open stations. **Processing Description** This study represents a collaboration between researchers and members of the Gulf of Maine fishing industry to survey juvenile groundfish distribution and abundance along transects from estuarine through inner shelf areas of the Bigelow Bight. The project will characterize associated substrate and prey availability in order to determine fisheries habitat resources with the region. The project will feature the use of a sediment profile imager (known as a SPI camera), a device which takes photos of substrates and associated organisms both from a surface and from a profile view to depths up to 1 ft. This technique will be combined with traditional research sampling methods for fish (small mesh trap nets, beam trawls, and variable mesh gill nets) and benthos (Ponar grab sampler). The survey design will compare fish, benthos and substrates between estuarine, nearshore and offshore areas, including sites within these zones that have been altered by human activities (i.e. dumping of dredge material, outfall of treated sewage, and bottom trawling). Traditional cod spawning and feeding grounds and a closed area (Jeffrey's Ledge) are included in the survey. Results of the study will provide much needed data to determine estuarine and inner shelf fish habitat associations, the food resource value of these habitats, and their response to current and previous human alterations."

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Project Information

Northeast Consortium: Cooperative Research (NEC-CoopRes)

Website: http://northeastconsortium.org/

Coverage: Georges Bank, Gulf of Maine

The Northeast Consortium encourages and funds cooperative research and monitoring projects in the Gulf of Maine and Georges Bank that have effective, equal partnerships among fishermen, scientists, educators, and marine resource managers.

The Northeast Consortium seeks to fund projects that will be conducted in a responsible manner. Cooperative research projects are designed to minimize any negative impacts to ecosystems or marine organisms, and be consistent with accepted ethical research practices, including the use of animals and human subjects in research, scrutiny of research protocols by an institutional board of review, etc.

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Program Information

NorthEast Consortium (NEC)

Website: http://northeastconsortium.org/

Coverage: Georges Bank, Gulf of Maine

The Northeast Consortium encourages and funds
cooperative research and monitoring projects in the Gulf of Maine and Georges Bank that have effective, **equal partnerships** among fishermen, scientists, educators, and marine resource managers.

At the 2008 Maine Fisheremen's Forum, the Northeast Consortium organized a session on data collection and availability. Participants included several key organizations in the Gulf of Maine area, sharing what data are out there and how you can find them.

The Northeast Consortium has joined the Gulf of Maine Ocean Data Partnership. The purpose of the GoMODP is to promote and coordinate the sharing, linking, electronic dissemination, and use of data on the Gulf of Maine region.

The Northeast Consortium was created in 1999 to encourage and fund effective, equal partnerships among commercial fishermen, scientists, and other stakeholders to engage in cooperative research and monitoring projects in the Gulf of Maine and Georges Bank. The Northeast Consortium consists of four research institutions (University of New Hampshire, University of Maine, Massachusetts Institute of Technology, and Woods Hole Oceanographic Institution), which are working together to foster this initiative.

The Northeast Consortium administers nearly $5M annually from the National Oceanic and Atmospheric Administration for cooperative research on a broad range of topics including gear selectivity, fish habitat, stock assessments, and socioeconomics. The funding is appropriated to the National Marine Fisheries Service and administered by the University of New Hampshire on behalf of the Northeast Consortium. Funds are distributed through an annual open competition, which is announced via a Request for Proposals (RFP). All projects must involve partnership between commercial fishermen and scientists.

The Northeast Consortium seeks to fund projects that will be conducted in a responsible manner. Cooperative research projects should be designed to minimize any negative impacts to ecosystems or marine organisms, and be consistent with accepted ethical research practices, including the use of animals and human subjects in research, scrutiny of research protocols by an institutional board of review, etc.

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Funding

Funding Source	Award
NorthEast Consortium (NEC)	unknown NEC-CoopRes NEC

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