Testing of trap styles for capture of sublegal sized lobsters from unknown lobster boat NEC-RB2005-1 in the Southwest Harbor, Mt. Desert Island, Maine from 2006-2007 (NEC_ProjDev project)

Website: https://www.bco-dmo.org/dataset/3137
Version: 29 June 2009
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Project
» Northeast Consortium: Project Development (NEC_ProjDev)

Program
» NorthEast Consortium (NEC)

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Dataset Description

"Designing and Testing a Sublegal Lobster Sampling Trap"

P.I.: Robert Bayer

Master's Thesis by William Fike

The objective of this study was to design a trap to fill a gap in the collection of data concerning lobster abundance. The trap design should allow sublegal sized lobsters to enter the trap while excluding legal sized lobsters. It is believed that the larger legal sized lobsters inhibit the smaller lobsters from entering the traps and therefore these smaller sized lobsters are not represented in the data collected at this current time. Having the ability to base stock size estimates on smaller size lobsters will help individuals estimate future catch.

See final report

Methods & Sampling

Sample Trap Head Name	Head Design	Number of type made	Number of Hauls	Purpose	Results
Large High	plastic covered wire mesh large horizontal opening high angle	7	1	Catch sublegal lobster, exclude legal size lobster.	Caught lots of crabs
Large Low	plastic covered wire mesh large horizontal opening low angle	7	1	Catch sublegal lobster, exclude legal size lobster.	Caught one lobster, lots of crabs
Small High	plastic covered wire mesh small horizontal opening high angle	7	1	Catch sublegal lobster, exclude legal size lobster.	Caught lots of crabs
Small Low	plastic covered wire mesh small horizontal opening low angle	7	1	Catch sublegal lobster, exclude legal size lobster	Caught one lobster, lots of crabs
Vertical Opening	plastic covered wire mesh vertical rectangular opening	1	Several in one day, used video camera	Discover crab capabilities of entering different head designs.	Showed the ability of crab to access traps
Chalmers	cloth mesh head opening has no wire ring	4	24	Catch sublegal lobster, exclude legal size lobster and crabs.	Caught sublegal lobster, excluded legal size lobster, caught crabs
Fike 1	cloth mesh head has wire ring with 2.5 inch opening	4	24	Catch sublegal lobster, exclude legal size lobster and crabs	Caught sublegal lobster, excluded legal size lobster, caught crabs
Square	Trap has no head instead one inch openings are present around the trap	4	4	Openings in the trap simulates mesh of standard legal trap, discover if sublegal lobster move freely through the mesh.	Caught no lobsters or crabs
Fike 2	cloth mesh head has wire ring opening of 1.75 inches	4	20	Discover the smallest size head opening that lobster will enter through.	Caught 2 very small lobsters and no crabs

Data Processing Description

The data was entered into Microsoft Excel. All data that was recorded while at sea was transferred to a

spreadsheet (See Appendix). Data was organized in Excel for the purpose of entering the data into the statistical program Systat. The Systat program was used to conduct an Analysis of Variance for analyzing each trap type: ventless, Fike 1, Fike 2, and Chalmers trap. The dependent variable was lobster carapace length (mm), with trap type, date, location, soak period, and number of crabs in trap as independent variable (Table 2). Insignificant main effects (P>.05) were removed and a reduced model was evaluated. Three variables, depth, bottom type, and catch, which is the number of lobsters caught in each trap, were found not significant and were removed. The Analysis of Variance was then run a second time, excluding these three variables (Table 3). Effects of trap type, soak period, number of crabs, and location on lobster size were included in a prediction equation (Table 4). A final model included significant main effects with interaction terms between main effects (Table 5). Results were presented graphically.

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Data Files

File
juv_lobster_traps.csv (Comma Separated Values (.csv), 27.82 KB) MD5:4623b946549fc46daae2bef70428a70f Primary data file for dataset ID 3137

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Parameters

Parameter	Description	Units
trap_design	see above for description of the lobster trap modifications	
date_local	local month, day and year	
day_local	day, local time	
month_local	month of year, local time	
year	year, reported as YYYY, e.g. 1995	
yrday_local	local day and decimal time, as 326.5 for the 326th day of the year, or November 22 at 1200 hours (noon)	
site	a harbor in Maine	
tide	relative state of tide	
depth_feet	depth in feet that trap was set at	feet
bottom_type	description of sea bottom	
soak_time	duration of trap collecting period in hours unless otherwise described.	hours
length	length of carapace	millimeters
legal_sublegal	whether the lobster was of legal (82.5 mm) or sublegal carapace length.	
num_crabs	number of crabs found in trap	
comments	free text comments	

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Instruments

Dataset-specific Instrument Name	Lobster Trap
Generic Instrument Name	Lobster Trap
Dataset-specific Description	All sample traps were constructed of 0.5" inch square shrimp mesh plastic covered wire with outside dimensions of 24" inches long, 12" inches wide, and 10" inches high. The size of the trap is approximately 1/6th the volume of a legal size trap. The sample trap heads were rectangular openings that were all 4" inches wide with the large opening 2" inches tall and the small size 1.5" inches tall. There were two head angles one with a rise of 5" inches and a run of 7" inches. The second head angle has a rise of 2.5" inches and a run of 7" inches. Eight trap variations were constructed for a total of 32 sample traps. These traps were set and hauled with each string including four different sample traps and one ventless trap as a control.
Generic Instrument Description	A lobster trap (often called a lobster pot) is a baited trap which traps lobsters or crayfish and is used in lobster fishing. A lobster trap can catch multiple lobsters at once and can be a various sizes. An opening permits the lobster to enter a tunnel of netting and proceed into a "chamber" or "kitchen", where there is bait, and then into the "parlor" from which it cannot escape.

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Deployments

NEC-RB2005-1

Website	https://www.bco-dmo.org/deployment/58063
Platform	unknown lobster boat
Report	http://northeastconsortium.org/ProjectFileDownload.pm?report_id=1026&table=project_report
Start Date	2006-11-18
End Date	2007-06-12
Description	Designing and Testing a Sublegal Lobster Sampling Trap **Methods & Sampling** Designing and Testing a Sublegal Lobster Sampling Trap

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Project Information

Northeast Consortium: Project Development (NEC_ProjDev)

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.

Priority areas for Northeast Consortium funding include selective fishing-gear research and development. The development of selective fishing gears that enhance gear selectivity, target healthy stocks, reduce bycatch and discard, reduce or eliminate technical barriers to trade, minimize harvest losses, and improve fishing practices.

Studies of new and developing fishing gears and technologies aimed at reducing environmental impact is funded under Project Development.

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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
National Oceanic and Atmospheric Administration (NOAA)	NA05NMF4701257

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