Species counts from control and gear manipulation trials to reduce bycatch of juvenile fish carried out on fishing vessels in the Northeast Consortium (NEC) in the Southwest coastal Maine from 2011-2012 (NEC_ProjDev project)

Website: https://www.bco-dmo.org/dataset/3819
Version: 1
Version Date: 2012-12-14

Project
» Northeast Consortium: Project Development (NEC_ProjDev)

Program
» NorthEast Consortium (NEC)

Contributors	Affiliation	Role
Enterline, Claire L	Maine Department of Marine Resources (Maine DMR)	Principal Investigator
Rauch, Shannon	Woods Hole Oceanographic Institution (WHOI BCO-DMO)	BCO-DMO Data Manager

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Dataset Description

The Maine Department of Marine Resources, in collaboration with three fishermen, tested five gear manipulations in floating near-shore pound nets to evaluate their effectivness in reducing the incidental take of juvenile American shad (*Alosa sapidissima*), blueback herring (*A. aestivalis*), and alewife (*A. pseudoharengus*), while maintaining the catch quanitity and quality of the target species.

Sampling hauls generally alternated between gear manipulation and control trials on a 3-day rotation. During each trip, a portion of the total catch was sampled for species composition. Length was recorded for a sub-sample of each species.

See also: photographs taken during sampling trips (70.9 MB .zip file)

Other Project Participants:
Michael Brown, Maine Dept. of Inland Fisheries and Wildlife (former project PI)
Rob Bernat (Fisherman)
Brett Gilliam (Fisherman)
Dan Harriman (Fisherman)

References:
Enterline, Claire. Reducing juvenile alewife, blueback, and american shad bycatch in the coastal pound net and floating fish trap fisheries. Northeast Consortium Final Report 11-142.

Methods & Sampling

Control and gear manipulation trials were performed on a 3-day rotation (except for the trials testing the 6" mesh leader). During each trip, the species and size composition of the catch were sampled.

The following five gear types were tested:
(1) a large (8' by 8') soft mesh escape panel, knotless 2" mesh size (at Richmond Island site);
(2) a small (~ 2' by 4') soft mesh escape panel, 3" mesh size (at Bailey Island site);
(3) a 3' by 6' aluminum panel with 3/8" vertical bar spacing (at Bailey Island site);
(4) a 3' by 6' aluminum panel with 1/2" vertical bar spacing (at Bailey Island site);
(5) a large mesh lead to the trap: 6" mesh size (at Hermit Island site).

For catches larger than 1 tray, the catch was sub-sampled using one random tray from the catch. All fish of the sub-sample were identified to the species-level and counted. The total length of the first 100 individuals of each species were measured to the nearest millimeter. For catches of 1 tray or less, the entire catch was sampled; all fish were identified and counted, and the first 100 individuals were measured.

The total catch was either counted in trays or estimated by the fisherman in total pounds (the number of pounds per tray was not estimated). Notes were taken regarding apparent fish behavior in response to the bycatch reduction gear and fishing methods, as well as fishermens' comments regarding the gear manipulations.

Data Processing Description

Parameter names were changed to conform with BCO-DMO conventions. Blanks were replaced with 'nd' to indicate 'no data'.

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Data Files

File
juv_fish_bycatch_redux.csv (Comma Separated Values (.csv), 2.34 MB) MD5:397001dd9ff32bc4aaac949c29c3090c Primary data file for dataset ID 3819

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Parameters

Parameter	Description	Units
port	Name of the port where the fishing vessel departs from/returns to.	text
trip	The unique identification code given to each haul trip. All trips with the same identification number are part of the same haul effort.	text
month_local	2-digit month of year (local) when the trip occurred.	mm (01 to 12)
day_local	2-digit day of month (local) when the trip occurred.	dd (01 to 31)
year	4-digit year (local) when the trip occurred.	YYYY
time_start	The time (local) at which the fishing vessel left the dock to tend the net.	HHMM
bycatch_reduct_gear	Indicates whether the trip used a bycatch reduction gear, or whether the trip was a control trial. If the trip was a gear manipulation trial, the value will indicate which bycatch reduction gear was used. If the trip was a control trial, the value will be 'CONTROL'.	text

trial_id	Indicates which gear type the trip was testing (includes both gear manipulation and control trials). Trial type (gear manipulation or control) can be determined by looking at the 'bycatch_reduct_gear' parameter.	text
weight_lbs	If the fisherman gave a verbal estimation of the total catch in pounds, the value is given here. If the total catch was not estimated in pounds, this field contains 'nd'.	pounds
take	If the total catch was recorded as number of totes, trays, or dip nets, the number of totes, trays, or dip nets taken is recorded here. If there was no take, but simply a biosample taken, 'nd' or '0' is given.	varies
take_unit	The unit of take; either TOTE, TRAY, or DIP_NET.	text
sample_type	The type of sample; either BIOSAMPLE or TAKE. BIOSAMPLE = the sample was taken specifically to test gear effectiveness, and the fisherman did not plan on retaining the catch otherwise. TAKE = the sample was taken from the portion of the fisherman's catch that would be sold for market value.	text
effort	The unique effort identifier within a specific trip. Multiple effort_id numbers under the same trip number indicate that more than one sample type was taken from the same haul. This was done when the fisherman's take was different than the total catch (i.e. when the entire catch would not have been kept, or even brought on board, if not part of the sampling effort.)	unitless
sample_amt	The quantity of the sample in totes, trays, or dip nets.	varies
sample_amt_unit	The type of sample quantity; either TOTE, TRAY, or DIP_NET.	text
catch_id	The unique identifier number regarding the species in the specific effort. Each species caught within a single effort will have a unique identifier number.	unitless
count	The total number of individuals of a specific species within an effort.	unitless
common_name	The common name of the species sampled.	text
species	The scientific name of the species sampled.	text
sample	The unique identifier for the length sample of a given species' within a specific catch.	unitless
fish_len	The length of the sample in millimeters. All values are total length.	millimeters
freq_fish_len	The frequency of the sample length. The value will be 1 unless the sample represents a count of individuals that were not measured. In this case, freq_fish_len is the number of individuals of a specific species that were counted but not measured.	unitless
comments	Comments recorded by the observer regarding catch, fishing practices, fishermen's comments, gear effectiveness, and the proportion of total catch was sampled.	text
lat_start	Latitude of the starting location of the trip. Positive values = North.	decimal degrees
lon_start	Longitude of the starting location of the trip. Negative values = West.	decimal degrees

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Instruments

Dataset-specific Instrument Name	Floating Pound Net
Generic Instrument Name	Floating Pound Net
Dataset-specific Description	The nets used in this study were floating pound nets, using floating toggles and buoys at the surface and held taught below the surface using anchors at the corners.
Generic Instrument Description	Pound nets are passive, stationary gear used for live entrapment of fish species. The gear is composed of fiber netting. Floating pound nets use floating toggles and buoys at the surface and are held taught below the surface using anchors. A pound net consists of: (1) a net body or crib where the entrapment takes place, (2) a least one mesh heart that helps funnel fish into the crib, and (3) a straight leader or hedging which leads fish toward the crib. Fish swimming along the shore are turned toward the crib by the hedging, guided into the heart, and into the crib where they are removed. (Description from Maryland Dept of Natural Resources)

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Deployments

NEC-CE2009-1

Website	https://www.bco-dmo.org/deployment/58928
Platform	Fishing Vessels
Start Date	2011-06-01
End Date	2012-07-20
Description	The Maine Department of Marine Resources, in collaboration with three fishermen, tested five gear manipulations in floating near-shore pound nets to evaluate their effectivness in reducing the incidental take of juvenile American shad (Alosa sapidissima), blueback herring (A. aestivalis), and alewife (A. pseudoharengus), while maintaining the catch quanitity and quality of the target species. Sampling hauls generally alternated between gear manipulation and control trials on a 3-day rotation. Trips were made on various dates during 2011 and 2012 to the following locations: Bailey Island (approx. 43.72,-70.00) Cape Elizabeth/Richmond Island (approx. 43.55,-70.24) Phippsburg/Hermit Island/Bald Head Cove (approx. 43.70,-69.84)

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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
NorthEast Consortium (NEC)	11-142

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