

# Red crab tag trawl log data: 100-600 fathoms, from the Canadian border (Hague Line) to approximately Hudson Canyon from 2002-2005 (NEC-CoopRes project)

**Website:** <https://www.bco-dmo.org/dataset/2801>

**Version:** final

**Version Date:** 2007-04-01

## Project

» [Northeast Consortium: Cooperative Research](#) (NEC-CoopRes)

## Program

» [NorthEast Consortium](#) (NEC)

Contributors	Affiliation	Role
<a href="#">Wahle, Richard A.</a>		Principal Investigator

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## Dataset Description

### Trawl Log Data for Red Crab

#### Project Leader:

*Richard A. Wahle*, Bigelow Laboratory for Ocean Sciences

#### Additional Participants:

*Jon Williams*, Benthic Fishing Corp.

*Yong Chen*, University of Maine

#### Companion objects:

[red crab sampling data](#)

[red crab tag data](#)

[redcrab camera data](#)

[red crab return data](#)

[redcrab temp data](#)

[redcrab trawl data](#).

"The objectives of the main project were to: (1) Employ camera-based and net-trawl sampling methodology established by an earlier NMFS red crab surveys (Wigley et al. 1975) to determine whether abundance, size structure, and sex composition of the population has changed significantly at the same sites sampled in 1974, (2) Conduct sea sampling to better characterize the commercial catch, (3) Conduct tagging to obtain much needed information on red crab growth rates and movement, and (4) Develop three stock assessment modeling approaches of different complexities (size-structured yield-per-recruit model, production model, and size-structured simulation model) to evaluate the dynamics of the red crab stock, estimate current status of the fishery, and evaluate alternative management strategies. The supplemental project compared the efficacy of otter-trawl to net trawl in this application.

The benthic sled system for camera surveys combined with net trawl collection generated the first population density estimates and demographic data of red crab in 30 years. The comparison of the two net trawl methods confirmed that otter trawls were the most efficient approach in these surveys. Results of the main project indicated that the abundance of the largest crabs targeted early in the history of the fishery (males >114 mm, 4.5 inches) is down by approximately 42% since 1974. Based on sea sampling data the fishery now harvests smaller male crabs, and the standing biomass of crabs currently harvested is on a par with 1974 levels. The abundance of smaller males and females is substantially higher than in 1974. Some 9600 crabs were tagged over the course of the study, and of about 300 returns there was little evidence of growth, which is consistent with prior evidence of slow growth for this species. However, the limited growth data curtailed application of the stock assessment models. The full parameterization of these models awaits additional growth data. Models are implemented as Excel spread sheets that and are available from the PI, and will be easy for the user to update as data become available. These results were a key component of the NMFS red crab stock assessment conducted in 2006. "(extracted from: *Final Report Submitted to the NORTHEAST CONSORTIUM, December 11, 2006*)

**DMO Notes:** Minor corrections were made to the data when launch time and haulback time were on different days.

**Questions regarding this data set should be directed to:**

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## **Methods & Sampling**

The benthic sled system for camera surveys combined with net trawl collection generated the first population density estimates and demographic data of red crab in 30 years. The comparison of the two net trawl methods confirmed that otter trawls were the most efficient approach in these surveys. Results of the main project indicated that the abundance of the largest crabs targeted early in the history of the fishery (males >114 mm, 4.5 inches) is down by approximately 42% since 1974. Based on sea sampling data the fishery now harvests smaller male crabs, and the standing biomass of crabs currently harvested is on a par with 1974 levels. The abundance of smaller males and females is substantially higher than in 1974. Some 9600 crabs were tagged over the course of the study, and of about 300 returns there was little evidence of growth, which is consistent with prior evidence of slow growth for this species. However, the limited growth data curtailed application of the stock assessment models. The full parameterization of these models awaits additional growth data. Models are implemented as Excel spread sheets that and are available from the PI, and will be easy for the user to update as data become available. These results were a key component of the NMFS red crab stock assessment conducted in 2006. "

## **Data Processing Description**

The objectives of the main project were to: (1) Employ camera-based and net-trawl sampling methodology established by an earlier NMFS red crab surveys (Wigley et al. 1975) to determine whether abundance, size structure, and sex composition of the population has changed significantly at the same sites sampled in 1974, (2) Conduct sea sampling to better characterize the commercial catch, (3) Conduct tagging to obtain much needed information on red crab growth rates and movement, and (4) Develop three stock assessment modeling approaches of different complexities (size-structured yield-per-recruit model, production model, and size-structured simulation model) to evaluate the dynamics of the red crab stock, estimate current status of the fishery, and evaluate alternative management strategies. The supplemental project compared the efficacy of otter-trawl to net trawl in this application.

## Data Files

File
<b>redcrab_log.csv</b> (Comma Separated Values (.csv), 75.20 KB) MD5:7cb1f69f3918fd7c4b0bb01d5d3b6c99 Primary data file for dataset ID 2801

## Parameters

Parameter	Description	Units
date_local	local date, e.g. 6/05/2002 stands for June 5th 2002	
site	where the data were collected, 'NA' means CTD left on the deck of the boat	
tow	tow number/identification, applies to all towed vehicles	
trawl_type	tow type	
launch_time_start	start time of set, local time	24 hour clock
launch_time_end	end time of set, local time	24 hour clock
haulback_start	start time of haulback, local time	24 hour clock
haulback_end	end time of haulback, local time	24 hour clock
bottom_time	total bottom time	hour and minutes
water_time	total in-water time	hour and minutes
quality_flag	tow quality	Good or Bad
lat	latitude at start of tow	decimal degrees
lon	longitude at start of tow	decimal degrees

lat_end	latitude at end of tow	decimal degrees
lon_end	longitude at end of tow	decimal degrees
depth_start_fm	depth at start time of tow	fathoms
depth_end_fm	depth at end time of tow	fathoms
temp_ss_f	sea surface temperature	degrees F
comments	Notes on each tow	

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## **Deployments**

**NEC-RW2001-1**

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57766">https://www.bco-dmo.org/deployment/57766</a>
<b>Platform</b>	F/V Krystal James
<b>Report</b>	<a href="http://northeastconsortium.org/ProjectFileDownload.pm?report_id=635&amp;table=project_report">http://northeastconsortium.org/ProjectFileDownload.pm?report_id=635&amp;table=project_report</a>
<b>Start Date</b>	2002-04-24
<b>End Date</b>	2005-11-25
<b>Description</b>	<p>Otter trawl- and camera-based sampling of red crabs, tagging study.</p> <p><b>Methods &amp; Sampling</b>  The benthic sled system for camera surveys combined with net trawl collection generated the first population density estimates and demographic data of red crab in 30 years. The comparison of the two net trawl methods confirmed that otter trawls were the most efficient approach in these surveys. Results of the main project indicated that the abundance of the largest crabs targeted early in the history of the fishery (males &gt;114 mm, 4.5 inches) is down by approximately 42% since 1974. Based on sea sampling data the fishery now harvests smaller male crabs, and the standing biomass of crabs currently harvested is on a par with 1974 levels. The abundance of smaller males and females is substantially higher than in 1974. Some 9600 crabs were tagged over the course of the study, and of about 300 returns there was little evidence of growth, which is consistent with prior evidence of slow growth for this species. However, the limited growth data curtailed application of the stock assessment models. The full parameterization of these models awaits additional growth data. Models are implemented as Excel spread sheets that and are available from the PI, and will be easy for the user to update as data become available. These results were a key component of the NMFS red crab stock assessment conducted in 2006. "</p> <p><b>Processing Description</b>  The objectives of the main project were to: (1) Employ camera-based and net-trawl sampling methodology established by an earlier NMFS red crab surveys (Wigley et al. 1975) to determine wheter abundance, size structure, and sex composition of the population has changed significantly at the same sites sampled in 1974, (2) Conduct sea sampling to better characterize the commercail catch, (3) Conduct tagging to obtain much needed information on red crab growth rates and movement, and (4) Develop three stock assessment modeling approaches of different complexities (size-structured yield-per-recruit model, production model, and size-structuredied simulation model) to evaluate the dynamics of the red crab stock, estimate current status of the fishery, and evaluate alternative management strategies. The supplemental project compared the efficacy of otter-trawl to net trawl in this application.</p>

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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.

## 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 Fishermen'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.