

Fisheries and Ocean Data Management System

Bob Groman and Dicky Allison Northeast Consortium Data Management Office





What is the Fisheries and Ocean Data Management system?

 A way for the public, researchers, educators, commercial fisherman, and managers to access data from the Northeast Consortium's cooperative research projects.





How does it work?

The system is accessed through the <u>Northeast</u> <u>Consortium website</u> at the University of New Hampshire using any standard web browser.





http://www.northeastconsortium.org



Research Steering Committee Meeting - May 30, 2007 This is the Northeast Consortium home page.





Where are the data?



Click on the DATA menu link to access the data.

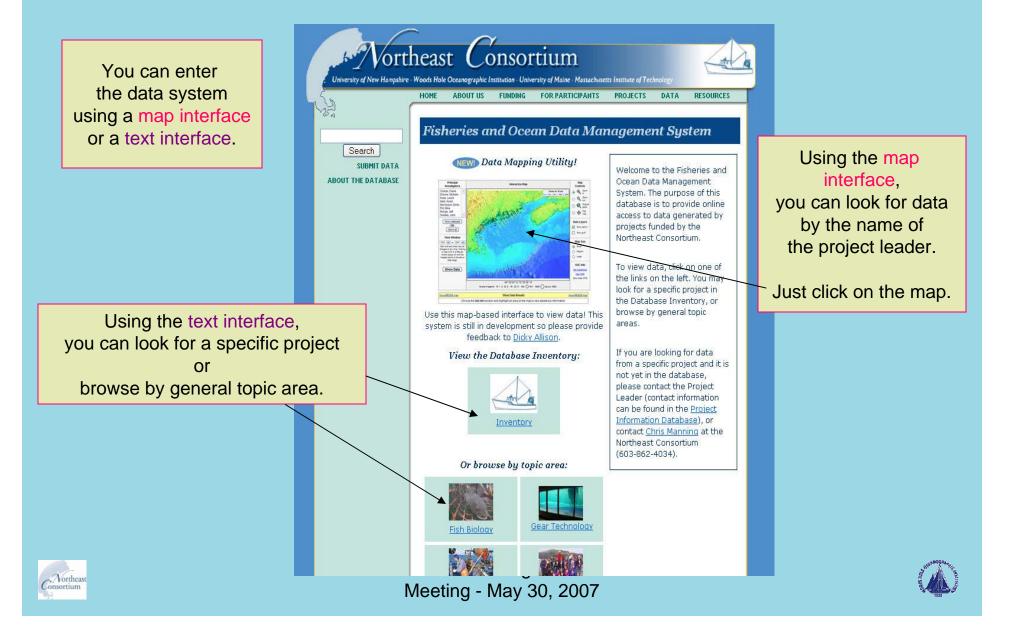


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Geospatial and Tabular Access to the Data



Data Organization

- Data are managed using the <u>JGOFS/GLOBEC</u> <u>Data Management System</u>
- Tabular data organization is flexible and has undergone several changes over the years. Currently, there are six (6) major categories:
 - Fish Biology (7/3)
 - Gear Technology (35/8)
 - Habitat Ecology (24/19)
 - Outreach (8/0)
 - Stock Assessment (24/14)
 - Whale Studies (0/0)

Many 2000-2005 data sets are on-line, as of May 23, 2007. Getting data "into the system" does take time.

Placeholders are used as an incentive for more contributions.





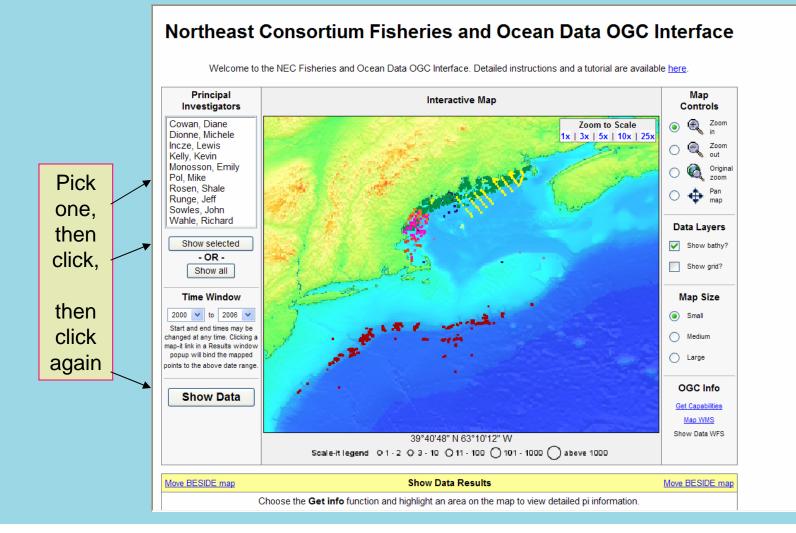
Access via <u>JGOFS/GLOBEC</u>

- Data sets shown as <u>simple directory lists</u>
- Six broad categories are defined
- <u>Select a data set (data object) to view</u>
- Data are displayed, as text, on web site
- Browse through the data by clicking on the links
- <u>Select data to plot and plot them</u>
- <u>Download data</u> as ASCII tables, CSV, and as Matlab binary files.
- One can <u>review</u> the <u>on-line metadata</u>

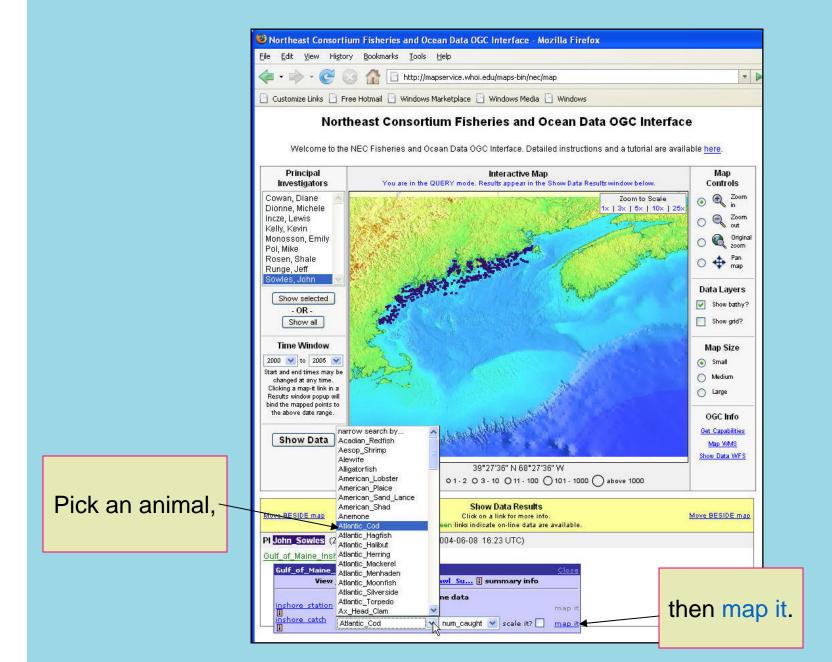




Access via the MapServer interface

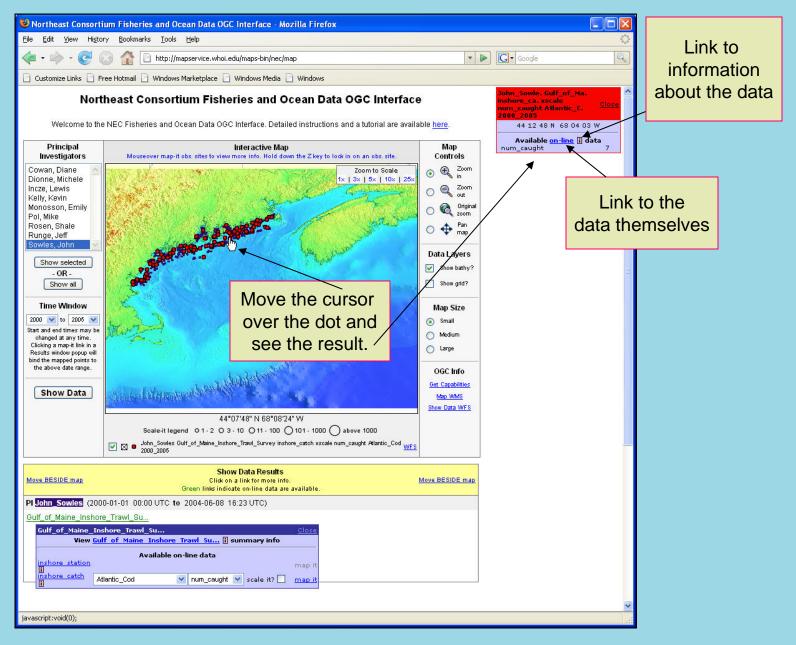


Northeas





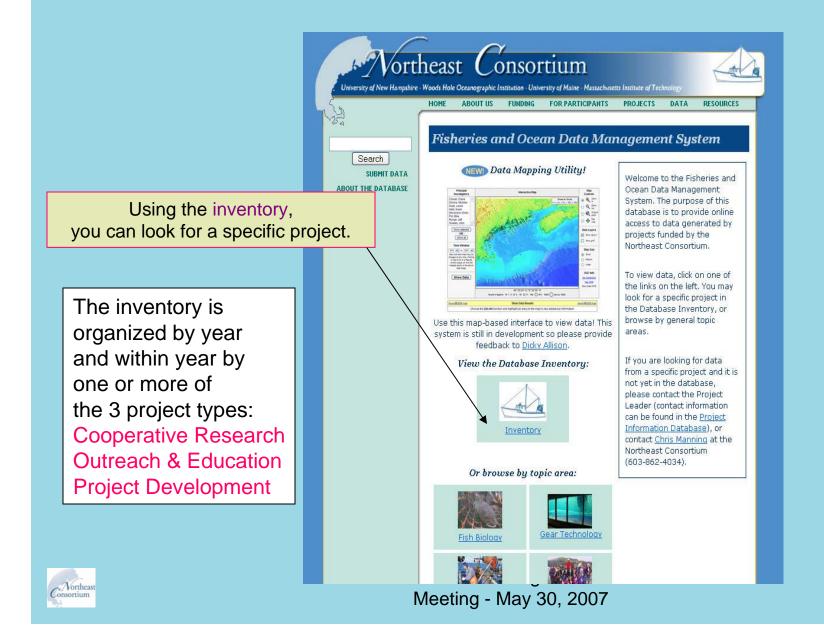








Access Data via the Inventory





Access from the Project Inventory

View the Database Inventory:

			Inventory							
	/nec/invento	ry_rs2	year_start eq 2002,project_type eq Coop_Res Level 2							
	Directory Documentation Plotting and Other Operations									
	Level 0 Next level	Flat listing								
	# Northeast Consorti		Data Inventory							
	year_start									
	2002 ==================================									
	Coop_Res									
	principal_investigato		d project_title							
	Diane Cowan	yes	Mapping Spawning and Hatching Grounds of American Lobster							
	Patrice McCarron	yes	Environmental Monitors on Lobster Traps: Phase III							
	Christopher Glass	no	Continuation Reduction of Bycatch and Discard in Gulf of Maine Groundfish Fisheries: The effect of compos							
	Cliff Goudey	no	Identification of Cod and Haddock Spawning Habitat Using Passive Acoustics							
	Raymond Grizzle	yes	Intensive Study of Western Gulf of Maine Closure Area							
	Pingguo He	no	Reducing Seabed Contact of Trawling: Semi-Pelagic Trawl for Gulf of Maine Shrimp Fishery							
Diale	Pingguo He	no	Reducing Cod Bycatch in Flounder Nets in the Gulf of Maine by Using Shallower Gillnets							
Pick _	Hunt Howell	yes	Determining Groundfish Movement Patterns In and Around Western Gulf of Maine Area Closure							
	Theodore Ligenza	yes	Continuation Trophic Ecology of Atlantic Cod: Insights from Tri-Monthly Localized Scales of Sampling Year							
one	M Cameron McLellan	no	Assessment of Bottom Habitat Community Recovery in Western Gulf of Maine Closed Area							
	Don Perkins	yes	Continuation Fishing Vessel Survey and Migration Study of Coastal Herring Spawning Aggregations in Gulf o							
	Jeffrey Runge	no	PULSE: Cooperative Partnership for Pelagic Ocean Ecosystem Monitoring in Gulf of Maine							
	Dan Schick	no	Abund Migration and Recruitment of Northern Shrimp in Gulf of Maine: Industry-Initiated Verification Surv							
	Dan Schick	no	Improving the Size Selectivity for Northern Shrimp Through Use of Modified Nordmore Grate							
	John Sowles	yes	Continuation Maine-NH Inshore Trawl Survey							
	<u>Win Watson</u>	yes	Continuation Implementation of a Monitoring Program for the Atlantic Offshore Lobster Fishery							
	Carl Wilson	no	Distribution and Abundance of Jonah Crabs Cancer borealis in Near-Shore Gulf of Maine							



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The Northeast Consortium has established submission of data as a condition of the grant.

- Scientists, fishermen, educators and fisheries managers can evaluate and consider data for use in fisheries and ocean science and management.
- Data can be compared, integrated, and synthesized from many different projects.
- Cooperative research participants can learn about the results of projects and avoid repeating experiments or observations that have already been made.
- Cooperative research data are archived.
- Federal guidelines are met for public access to data resulting from federally funded programs and activities.





In what formats can the data be submitted to the database?[†]

[†]The reality is we have to accept almost any format, but don't tell anyone.





Data formats

Spreadsheet format

	A	В	С	D	E	F	G	H	I	J	K 🗖
1	Stomach ID	Collect Date	Drift	Cod Length (cm)	Sex	Maturity	Prey name	Prey Weight (g)	Prey #	Digestion	Location 💳
2	3	10/09/01	2	54	M		Fish	0.04		W	Lemons
3	3	10/09/01	2	54	M		Cancer borealis	7.12	1	Р	Lemons
4	3	10/09/01	2	54	M		Cancer irroratus	1.33	2	Р	Lemons
5	3	10/09/01	2	54			Ophiopholis aculeata	6.37		Р	Lemons
6	4	10/09/01	2	54	M		Ophiuroidea	0.03	1	Р	Lemons
7	4	10/09/01	2	54	M		Cancer sp	0.41	1	Р	Lemons
8	4	10/09/01	2	54			Holothuroidea	2.42	1	Р	Lemons
9	5	10/09/01	3	65	F	Х	Cancer borealis	6.39		Р	Lemons
10	5	10/09/01	3	65	F	Х	Anonyx sarsi	0.18		Р	Lemons
11	5	10/09/01	3	65	F	Х	Bryozoa	0.15		Р	Lemons
12	5	10/09/01	3	65	F	Х	Ophiopholis aculeata	7.24		Ρ	Lemons
13	6	10/09/01	3	47	F		Eualus pusiolus	0.03	1	Ρ	Lemons
14	6	10/09/01	3	47	F		Eualus fabricii	0.59	3	Ρ	Lemons
15	6	10/09/01	3	47	F		Cancer irroratus	1.69	1	Р	Lemons
16	6	10/09/01	3	47	F		Cancer borealis	7.73	2	Ρ	Lemons
17	6	10/09/01	3	47	F		Decapoda shrimp	0.64	2	Ρ	Lemons
18	7	10/09/01	4	52	M	D	Decapoda shrimp	0.01		Р	Crab Ledge
19	7	10/09/01	4	52	M	D	Bryozoa	0.06		Р	Crab Ledge
20	7	10/09/01	4	52	M	D	Nereidae	0.98		Ρ	Crab Ledge
21	7	10/09/01	4	52	M	D	Ophiuroidea	0.85		Ρ	Crab Ledge
22	7	10/09/01	4	52	M	D	Mollusca shell	0.44		Р	Crab Ledge
23	7	10/09/01	4	52	M	D	Caprellidae	0.01		Р	Crab Ledge
24	7	10/09/01	4	52	M	D	Cancer irroratus	0.72	2	Р	Crab Ledge
25	7	10/09/01	4	52	M	D	Cancer borealis	0.13		Р	Crab Ledge
	▶ N\Sheet	1 / Sheet2 / S	iheet3	/	-			0.01		<u> </u>	





- Word processing tabular format
- Images (GIF, TIFF, JPEG and PNG)



Movies (AVI, MPG, MOV)



(Movie by Kelo Pinkham)

 Any computer readable file (except PDF) in ASCII or binary format





- Data can be served directly from other database systems including Oracle and other systems that support Internet access.
- The Fisheries and Ocean Data Management system uses the U.S. Joint Global Ocean Flux Study/U.S. GLOBal ocean ECosystem dynamics (JGOFS/GLOBEC) software to serve data. This software is publicly available via ftp.

ftp://globec.whoi.edu/pub/software/JGOFS_GLOBEC/





The data belong to the contributors.

- Data are the intellectual property of the collecting investigators.
- The time and effort committed to the collection of a data set entitles the investigator team to the benefits of it.
- Publication of results derived directly from the data is the privilege and responsibility of the investigators who collected the data.
- The Data Management Office can remove from the display any sensitive fields.





What if I want to publish the data first?

- The Northeast Consortium Data Management Office respects the desires of researchers who would like to publish data prior to making the data publicly available.
- Researchers are strongly encouraged to submit all data as soon as possible after the completion of their project.
- The Data Management Office will work with researchers on a caseby-case basis to allow a grace period for publication purposes.
- The Data Management Office, in consultation with data librarians, will also work with researchers to assist in contract negotiations with journal publishers.

The federal government mandates public access to data resulting from federally funded programs.





What if someone else wants to use your data?

- The data are intended for scholarly use by the industry, management, and academic and scientific communities, with the express understanding that any such use will properly acknowledge the originating investigator, the Northeast Consortium, and NOAA Fisheries.
- Use or reproduction of any data or images for any commercial purpose is prohibited without prior written permission from the Northeast Consortium Data Management Office.





What if someone else wants to use your data (continued)?

 Any person making substantial use of a data set must communicate with the investigators who acquired the data prior to publication and anticipate that the data collectors may expect to be co-authors of the published results. This extends to model results and to data organized for retrospective studies.





Notes

- Not all data are able to be mapped. Latitude and longitude are needed. Relative position or the geographic area specification won't do it.
- Large data sets take long to load; this is the down side of "data driven" and "on the fly plotting."
- "i" means information; on-line metadata (human readable) are available now but eventually machine readable metadata will be accessible.
- Rubber banding an area doesn't yet provide downloadable access to all the data in the area but does enable one to separate closely spaced stations to single out individual sites.
- The pan feature works like Google Earth





Interoperability Features

- Open Geospatial Consortium standards are followed
- Web Mapping Service (WMS) is supported
- Web Feature Service (WFS) is supported
- OBIS/DiGIR interface will be available by implementing and supporting basic SQL commands within the JGOFS/GLOBEC data management software











from the map...

The INFORMATION about the DATA.

The DATA!

Directory									
Level 0 Ne	xtlevel Flatli	sting							
# P.I. Joh									
year									
17779	2003								
Season Fall									
region									
4									
towid la	t 10	on gr	id d	lepth_strata					
	.21350 -6	58.06767 165	53						
fishid taxa				num_caught	common_name	depth_fm	weight_kg_total		
073 Gadu	s_morhua			7	Atlantic_Cod	41.5	0.27		

(Only those data that contain latitudes and longitudes are available via the MapServer.)



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Directory.. Data display...

inshore_catch

Maine/New Hampshire Inshore Trawl Survey Trawl Catch Data

Payier Lewise: Join Storlin, Main Department of Marine Resources Addimaal Participants Sally Johrman, Main Department of Marine Resources Tong Chen, Warentry of Maine Jaff Paige, Forthan Threet Dappt Sam Galit, Fiv Tan Lyan Deng Crons, Hew Resources Human Data Partiest Human Bath, Main Department of Marine Resources Resource Marghan, Maine Department of Marine Resources Resources Angelow, Maine Department of Marine Resources Robert Toronal, Fiv Tana Lyan Carl Res, Fiv Fix Mark

The project is a fabry independent multi-project rock assument along the Mane and New Hampher indexes water. The versal goal of the project is a hardware independent of the project material despendent motioning of the O Gel / Mane material water. Bigs on desired as goal of the project is digramediated and other project in this are net which assument data wold indexes to a down. Theold as partly the Norbace Constraint and is project the NOAA. Theiron Constraint Networks are networked in the NoAB and the N

In August 2005, and adopteduted prevention was facilitated by the Northand Constraints. It was conducted to determine the wishing of the data as regional network ensembles and a set of the second set of the sec

Companies Composed Eller: Statistical Eller Londo Thransmore Dana Londo Thransmore Dana Lohdor Canh Dana Ban Materie Dana Terra a datalid destription of the ramping schema see <u>Timal Jensor</u>s staring on page 3.

> Data Elements Parameter Names and Descriptions Trawl Catch Data

Parameter	Description					
year	year, 4 diget year					
season.	season of year, i.e. spring, fall					
region	Cone of one geographic regions: Per more detail ree <u>Final Resort</u> starting on page 4 = NET-outure ME = Cance Day - Modecant = Pendence Day 4 - Jerico-Frenchman, Bay = Downsam, MM					
towid	Unique identifier for each tow. FL indicates Fall, SP indicates Spring, followed by a two digit year designation and a consecutive tow number					
depth_fm	water depth at start or end of tow in fathoms					
grid	grid number, A one square nautical mile grid system was placed over the survey area. For more detail see Final Report page 5					
depth_strata	depth mata cole (year 2000-2002) where 1 = 5.7 (datama, 2 = 21.35 datama, 3 = 1605 datama, 4 = 1605 datama, 4 = 21.35 datama, 4 = 21.55 datama, 3 = 36.55 datama, 4 = 55.55 datama,					
fished	Numeric code for species. "id_code" (from inshore_fabilist object) is incorporated into "fabild" after 2004					
taxa	Scientific name of animal					
weight_kg_total	Total weight of specified species (per fishid), in kilograms					
nom_caught	Number of specified species (per fishid) caught.					
common name	Common name of animal					

Project website http://www.state.me.us/dos/m/braw/brawf.htm

Questions regarding the data should be directed to: Join Souder Mains Department of Marine Resources P.O. Box 8 West Boothay Harbor, ME 04575-0008

Phone: 207 633 9518 E-mail john towitt@maint.gov



The Inventory shows the data status of the project chosen.

/nec/inventory_rs2 --year_start eq 2002,project_type eq Coop_Res,principal_investigator eq Hunt_Howell-- Level 3

Directory	Directory Documentation Plotting and Other Operations								
Level 0 Next level Flat listing									
# Northeast Consortium Project Data Inventory									
year_start									
2002									
project_type									
Coop_Res	==								
principal_investigator	completed	project_tit	tle						
Hunt_Howell	 yes ==	Determininç	g_Groundfish_M	Novement_Patterns_In_and_Around_Western_Gulf_of_Maine_Area_Closure					
data_type	month	year	siname	description					
Final_Report data	July May	2005 2004	Hunt_Howell Hunt_Howell	pdf cod and haddock tagging data					
icast m		R		eering Cordinated Area to see the data. May 30, 2007					

Cod Tagging Data







The Data!

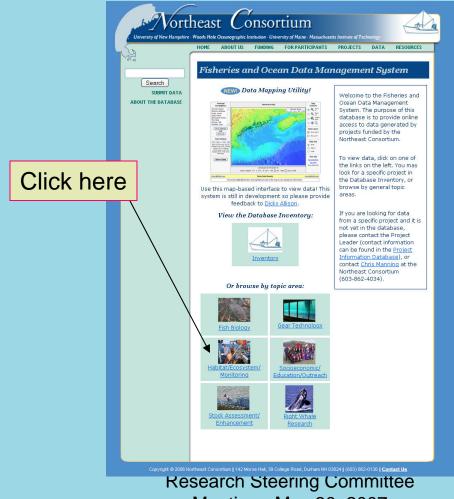
/nec/HabitEco/codhad_tag --date_local eq
07/22/02,tow eq 1-- Level 3

Director	ry D	ocumentation	Plotting and Other Operations					
Level 0 Next level Flat listing								
<pre># All t # **T # See d date_loc</pre>	<pre># All tagids start with 'A' and are 5 digit numbers. # **These data do not include any recapture data.** # Get documentation for explanations of variables, including units. </pre>							
07/22/02								
tow are								
1 124								
cod								
		repro_status	depth_w					
		nd	50					
950 7 951 9	92	nd	50					
952 6		nd	50					
species								
dab								
		repro status	depth w					
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954 3	5	nd	50					
955 3 956 3		nd nd	50 50					
956 3 957 3	10	nd	50					
958 3	5	nd	50					
958 3 960 3	5	nd	50					
961 3	11	nd	50					
962 3 964 3	7	nd	50					
		nd	50					
species								
yellowtail								
		repro_status	depth_w					
959 4		nd	50					





This is the entrance to the data via the general topic area.









Entrance from a Specific Topic area





Fisheries and Ocean Data Management System

Data Acknowledgment Policy

The data available here are intended for scholarly use by the academic, management, industry and scientific community, with the express understanding that any such use will properly acknowledge the originating investigator. Use or reproduction of any material herein for any commercial purpose is prohibited without prior written permission from the <u>Northeast Consortium Data Management Office</u>. Please read the complete <u>data acknowledgement policy</u>.

NEC data HOME

Directory of Data in /nec/HabitEco/

Data Investigator Description and Documentation chla JR Runge, Jeff Chlorophyll data - Coop.Long-term Ecosystem Monitoring Proj. Click codhad tag Howell, Hunt groundfish tag data from UGMAC and surrounding areas comm recovery McLellan, Cameron Assessment of bottom habitat community recovery in W. GoM Closure Area Environ. Contaminants on Georges and Stellwagon Banks - Metals contaminants M Monosson, Emily here Environ. Contaminants on Georges and Stellwagon Banks - PCBs + Pesticides contaminants PP Monosson, Emily ctd LI Incze, Lew CTD data from F/V Tenacious ctd JR Runge, Jeff CTD data - Coop.Long-term Ecosystem Monitoring Proj. Zooplankton dry weights - Coop.LT Eco.Mon.Proj drywt JR Runge, Jeff emolt Manning, Jim Temperature (and Salinity) from Lobster Traps gillnet survey Kelly, Kevin Pilot gillnet survey of Cashes Ledge Closed Area inverts MD Dionne, Michelle Benthic habitat correlates of Juvenile fish - Invertebrates





Cod Tagging Data, again.







The Data, again!

/nec/HabitEco/codhad tag --date local eq 07/22/02,tow eq 1-- Level 3 Directory... | Documentation | Plotting and Other Operations... Level 0 Next level Flat listing # Hunt Howell's Cod Tagging Data # All tagids start with 'A' and are 5 digit numbers. **These data do not include any recapture data.** # See documentation for explanations of variables, including units. ----date_local 07/22/02 ----tow area 1 124 -----species _____ cod ----tagid length repro status depth w _____ 950 76 nd 50 951 92 nd 952 68 nd 50 50 ----species _____ dab ----tagid length repro_status depth_w ------953 37 nd 50
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 958
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 960
 35
 nd

 961
 31
 nd
 50 50 50 50 50 50 50 962 37 nd 964 36 nd 50 50 ----species yellowtail _____ tagid length repro_status depth_w ------959 41 nd 50





Send data

- Email
- Floppy Disk
- CD-ROM
- DVD
- FTP



