Fishermen Assisting Gear Technologists and Scientists

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Executive Summary

This project facilitated the input and participation of fishermen in a variety of types of projects. Fishermen's expertise was used to develop and test innovative fishing gears, including several trawl modifications, and two designs for cod pots. Two industry meetings to discuss responsible fishing were held with participation from fishermen supported by this grant. Also, the knowledge and skills of weir fishermen were used to help a white shark *Carcharodon carcharias* exit a shallow salt pond.

A trip to the Memorial Institute flume tank in Newfoundland resulted in a shared recognition of, and respect for, knowledge of fishing gear among flume tank staff, fishing industry members, and scientists, and also developed a network for communicating ideas, and generated data on several experimental trawl net designs. The pot testing rejected one design as unworkable and unsuitable for the test area, and provided encouraging results for the other design. The responsible fishing meetings continued valuable industry discussions on facing stewardship challenges. And the New England region cheered as a white shark escaped into Vineyard Sound with the assistance of Chatham weir fishermen and biologists.

Project Objectives and Scientific Hypotheses

The objective of the project as proposed was to increase the effective application of cooperative conservation engineering by adding to the staff of the Division of Marine Fisheries (DMF) and Manomet Center for Conservation Sciences (MCCS); a total of 50 man-weeks was to be made available wherein fishermen from a pool of applicants might assist in areas of their expertise. During the conduct of the grant, following the retirement of the original PI, this objective was modified. In consultation with the Northeast Consortium, the objective was redefined to include support for fishing gear research and other activities where fishermen were involved.

Introduction

The original objective of this project was unlike most funded cooperative research. Rather than focus on, for example, a particular gear modification, it was envisioned that this funding would be used to provide needed manpower and tested experience that would supplement conservation engineering programs. Recognizing the value of fishermen's expertise to gear engineers, the Division of Marine Fisheries (DMF) and Manomet Center for Conservation Sciences (MCCS) planned to seek and hire fishermen on a need basis and on a level wherein the expertise of the applicants, or recruited fishermen, would well compliment on-going activities. The plan was to establish a pool of interested fishermen, carefully screened to ensure that the work was undertaken and their expertise was compatible and employ them during periods of low fishing activity when they must tie up their vessels or, for some other reason, cease fishing.

Some of the activities that fishermen, employed in these positions, were planned to be involved in (and had been involved in the past when state and other funding was available) were construction and modification of fishing gear. In mobile gear this

involvement included modifying codends, changing the configuration of a trawl net, adding panels into the extension piece, constructing separator trawls and the use of grates. In static gear, these activities had involved testing modified hooks and changing the hanging ratio of gillnets. In addition, fishermen in close association with DMF and MCCS also were planned to assist these programs by giving their view (or feedback) of discussions at various meetings that give a better or different perspective of certain ideas and approaches. Another idea was to have these fishermen assist in video collection and production, sea sampling, initial review of bycatch problems at sea, and possibly gear entanglement problems.

In practice, fishermen were supported and employed for some of these tasks. Overall, this grant supported six projects: a cooperative trawl gear testing session at the Memorial Institute flume tank; two projects testing groundfish pots, one by the Massachusetts Institute of Technology (MIT) and one by DMF; two Responsible Fishing Conferences; and one white shark rescue.

The unusual nature of this project has resulted in an unusual structure for the final report. This report compiles the products of each of the six activities, rather than presenting one cohesive report. General information on each project is described below in a separate section, presented in chronological order. Greater detail is provided in attached materials that represent the ultimate product from the project. For the flume tank testing, Third Responsible Fishing Conference (RFC), and the White Shark Rescue, copies of newspaper articles are attached; for the Fourth RFC, the agenda is attached. Detailed reports, one a bound copy, are provided for the two potting experiments.

I. Flume Tank Testing of Trawl Innovations

Participants in the flume tank testing. First row (from left): Dan Murphy, Joe Scola, Mike Pol, Arne Carr, Vincent Balzano, Mark Szymanski. Second row (from left): Scott Westcott, Dan Schick, Vincent Manfredi, Luis Ribas, Chris Glass, Tim Feehan, Gregg Morris, Mary O'Rourke, Proctor Wells.

Summary

A group of fishermen, scientists, and a net maker traveled to the Memorial Institute's flume tank in St. John's, Newfoundland in January 2002 to test their gear designs and to learn more about gear technology. The grant supported the travel of DMF personnel, Mary O'Rourke of Trawlworks, Inc, Capts. Dan Murphy, Joe Scola, Scott Westcott, Proctor Wells, and Luis Ribas, and paid for model construction materials and the flume tank rental. Other funding was provided by or through Manomet Center for Conservation Sciences and Maine Department of Marine Resources.

The unique feature of this event was the testing and construction of scaled models of fishing gear by fishermen. Fishermen were asked to submit ideas for review; those ideas were then constructed to a scale that could be deployed in the flume tank. The gear designs included models of the topless design and others used in ongoing cooperative research, and some proposed to be tested.

Much was learned. The dialogue among the attendees was constant, impressive and positive. Design modifications and improvements were made on-site as all worked together to re-construct some of the fishing gear. All agreed that the experience was one of the most exceptional they had encountered.

Objectives

Use the Marine Institute flume tank to:

1) Test bycatch reduction methods developed by fishermen using scale models
2) Evaluate currently-used gear
3) Test codend covers and other modifications

Key Participants

H. Arnold Carr, Michael Pol, Mark Szymanski, and Vincent Manfredi
Massachusetts Division of Marine Fisheries

Chris Glass, Tim Feehan and Gregg Morris
Manomet Center for Conservation Services

Capt. Vincent Balzano
F/V *North Star*
Portland, ME

Capt. Luis Ribas
F/V *Blue Skies*
Provincetown, MA

Capt. Proctor Wells
F/V *Tenacious*
Phippsburg, ME

Capt. Dan Murphy
F/V *Bantry Bay*
Dracut, MA

Dan Schick
Maine Dept. of Marine Resources

Capt. Scott Westcott
F/V *Mary Elena*
Wakefield, RI

Mary O'Rourke
Trawlworks Inc
Narrangansett, RI

Capt. Joe Scola
F/V *Dolores Louise*
Gloucester, MA

Data

Two CDs containing flume tank measurement spreadsheets and photos by flume tank and DMF staff were produced. A copy is attached to this report.

Partnerships

All participants were enthusiastic over the mutual expertise of fishermen and flume tank staff. Partnerships with fishermen were established or reinforced. Every fisherman that came on this trip has become a participant in cooperative research as well as a network of experts that can be consulted.

Related Projects

Funding from other sources supported the travel of Manomet staff, Dan Schick, and Capt. Balzano.

Published Reports and Papers

La Voie, W.A. 2002. NE fishermen, scientists test trawl ideas. *Commercial Fisheries News*, March 2002. Downloaded from Fishresearch.org: http://www.fishresearch.org/Articles/2003/09/responsible_fishing.asp (attached).

Seaver, R. 2002. Getting back to basics. *Collaborations*, March 2002

Images

Two CDs of photos by DMF with captions, plus the photos by the Marine Institute, are included with this report.

II. A Preliminary Evaluation of Inshore Groundfish Pots

Capt. M. Thomson hauls an experimental pot off the Maine coast.

Key Participants

Clifford A. Goudey
MIT Sea Grant College Program
Bldg. NE20-376, 3 Cambridge Center
Cambridge, MA 02139 USA
617-253-7079
cgoudey@mit.edu

Capt. Mathew Thomson
F/V Striker
P.O. Box 64
Monhegan Island, ME 04852
207-594-1778
stormlobster@yahoo.com

Summary

Standard US Pacific coast black cod *Anoplopoma fimbria* dual-entrance pots, 60-in diameter, with sloping sides made of 5-, 5.5- and 6-inch mesh size netting stretched over a steel frame, weighing just over 80 pounds, were tested during 15 March - 20 May 2002 inside the Monhegan Conservation Zone in coastal Maine. Bait included different ratios of mackerel and squid, herring and squid, and mackerel and herring, presented in a variety of ways.

The catch of target species was not sufficient to conclude anything about the significance of the pot parameters and fishing techniques tried. However, it was concluded that it is not a commercially viable fishery at the present time in the study area. Additionally, movement of the pots over the sea bottom showed that, at these depths and currents, the pots need more weight. However, it was not possible to add weight because the pots were already on the verge of being unmanageable due to their size and weight.

Project Objectives and Scientific Hypotheses

The goal of this project was to look at pot fishing for groundfish as an alternative to current harvest methods in the Gulf of Maine. The specific objectives were:

1. Purchase and rig fifteen pots of three different mesh sizes.
2. Conduct fishing trial aboard the F/V Striker in coastal waters.
3. Determine the fishing effects of various mesh size, bait, soak time, and time of setting.
4. Analyze fishing results to develop and understanding of catch and bycatch rates for the above parameters.

Published Reports and Papers

Goudey, C.A, Thomson, M. 2003. A Preliminary Evaluation of Inshore Groundfish Pots. MIT Sea Grant College Program, Center for Fisheries Engineering Research Project Report. 5 p. (attached)

III. Third North Atlantic Responsible Fishing Conference, Yarmouth, Nova Scotia

From left, Bill Amaru, Steve Welch and Thomas Moth-Poulsen watch a demonstration of bottom mapping equipment onboard a Canadian fishing vessel during the Conference.

Key Participants

Thomas Moth-Poulsen and H. Arnold Carr
Massachusetts Division of Marine Fisheries

Capt. Steve Welch
F/V *American Heritage*
Scituate MA

Capt. Bill Amaru
F/V *Joanne A II*
Chatham, MA

Summary

The North Atlantic Responsible Fishing Conferences (RFC) were conceived as an opportunity for practicing fishermen from around the North Atlantic to discuss and exchange practical information on responsible fishing practices. The Third RFC was held in Yarmouth, Nova Scotia on November 9-11, 2003. The grant supported the travel, attendance at, and participation of Moth-Poulsen, Carr, Amaru, and Welch.

Results

From: Williamamaru@aol.com
To: Pol, Mike (FWE) <Mike.Pol@state.ma.us>
Date: Jun 12 2003 - 10:51am

Dear Mike:

The third North Atlantic Responsible Fishing Conference, held in Yarmouth Nova Scotia from June 9 - 11, 2003, was a very worthwhile and successful event. It was worthwhile because it brought together like minded fishers, fishery managers and scientists from around the North Atlantic to share ideas, issues and to talk about solutions to many of our stewardship challenges. It was a success because we furthered our

knowledge of workable solutions to these issues and made plans to continue to discuss them with the hope of providing long-term solutions.

Our talks and working group meetings focused on solutions to the need to more thoroughly involve fishermen in the decision making process that will determine their future access to fish stocks. We developed a template for fishers to become more engaged in scientific research with governmental bodies who currently work without the help of fishermen. We also discussed improving quality through handling improvements and invited processors to work with and communicate more openly with us to improve the value of fish products. The future of natural gas and oil resource development was an important topic, one in need of future and ongoing dialogue and involvement.

A strong theme was that of the future generations of young fishermen and women who will some day take our places aboard fishing vessels and how better to improve not only the image but the substance of our industry. The theme of this Conference was protecting our oceans, our resources, our communities; I believe it is a theme that will fit well, far into the future.

The organization and smoothness of this Conference was due in no small part to the organizers from Canada, UK, and the United States, but Jean-Guy D'Entremont of Pubnico, Nova Scotia, the conference Co-Chair, performed well above anyone else. His dedication and willingness to give without expecting to receive in return sets an example for any and all to follow. Supported by his staff, his dedication to every detail of the program was exceptional. We owe a great deal to him.

Participants from all the countries present joined together with zest, humor and some pathos, to make our work both enjoyable and rewarding. I am especially proud of my fellow American fishermen and scientists who attended and provided leadership and valuable input toward the success of the meeting.

Over the next year a steering committee will plan for the 4th International Conference which it is hoped will be held in the northeast United States. The steering committee will set an agenda, select a venue and seek financial support. National and regional governmental bodies will be canvased for support both in terms of funding but more importantly, for their involvement in terms of people.

I want to thank the Commonwealth of Massachusetts and the Division of Marine Fisheries for its continuing support of responsible fishing and sustainable stocks. Again, DMF has set an example by its commitment to and support of fishermen and resource. I want to give special thanks to long time member of the Depatment of Marine Fisheries team, Arnie Carr, who even in retirement continues to be there for the industry he has already done so much for.

Sincerely, Captain Bill Amaru
U.S. Steering Committee
the Third North Atlantic Responsible Fishing Conference

Reports and Publications

Anonymous. 2003. Responsible fishing conference coming to New England next. *Commercial Fisheries News*, September 2003. Downloaded from http://www.fishresearch.org/Articles/2003/09/responsible_fishing.asp (attached.)

IV. Sponsorship of the 4th Responsible Fishing Conference

Henry Milliken of NMFS registers for the Conference with the assistance of (from left) Marie Callahan and Cindy Anderson of DMF.

Summary

The Division of Marine Fisheries hosted the Fourth Responsible Fishing Conference in conjunction with Fish Expo in Providence, RI on 29-30 September 2004. Funding from the grant provided audio-visual and technical support to the conference, conference supplies, and support for Carr and other DMF travel expenses. The conference included twenty-six speakers and twenty-one sessions. Twenty-four attendees registered for the conference. A proceedings for the RFC is planned under the independent direction of Carr.

Key Participants

H. Arnold Carr – Conference Organizer
Massachusetts Division of Marine Fisheries

For a list of speakers, please see attached agenda. A list of attendees is below.

List of Attendees

Name	Title	Affiliation
David Bergeron	Executive Director	Ma. Fishermen's Partnership
David Beutel	Fisheries Extension Specialist	Univ Of RI/RI Sea Grant
Gregory Didomenico	Executive Director	Garden State Seafood Assoc
David Ellenton	General Manager/Fish Proc.	Cape Seafoods Inc
Allison Ferreira	Fishery Management	NOAA/NMFS
Harry Graff		NEFMC Advisory Panel
Pingguo He	Educator/Researcher	Univ Of New Hampshire
Jeff Kaelin	Marine Contractor	Omega Protein
Jennifer Kollmer	Naval Architect	Seaworthy Systems
Patricia Kurkul	Northeast Regional Administrator	NOAA Fisheries
William Lange	Sales Manager	
Patricia Mcginn	Fisheries Biologist	NOAA/NMFS
Joe Mello	Fisheries Biologist	NOAA Fisheries-Observer Prog.
Peter Moore		American Pelagic Association
John Nelson		NOAA
Owen Nichols	Researcher	Center For Coastal Studies
Oyeronke Oladapo		
Maggie Raymond		Associated Fisheries Of Maine
Richard Raynes	Gear Specialist	NOAA
Susan Rohebach	District Aide	Office of Senator Robert O'Leary
Olivia Rugo Free	Research Coordinator	Ma. Fishermen's Partnership
Laura Skrobe	Fisheries Extension Specialist	Univ Of RI/RI Sea Grant
Eric Stolzenberg	Marine Engineer	Seaworthy Systems
C.M. "Rip" Cunningham	Consultant	NEFMC/MAMFC

V. Weir Fishermen Help Rescue White Shark

From left, John and Ernie Eldredge, Mark Simonitsch, Chip Foster set a net panel to restrict the movements of the white shark.

Key Participants

John Eldredge, Ernie Eldredge, Mark Simonitsch, and Chip Foster
Chatham Fisheries
Stage Harbor
West Chatham, MA

Summary

Fishermen were contracted to use their expertise to help encourage a white shark *Carchardon carcharias* to leave shallow waters near Naushon Inlet, Massachusetts in October 2004. Two weir nets were adapted and deployed to force the shark out of the inlet. Design, construction, and deployment of a “sweeping rope net” to further direct the shark through an eelgrass bed was also required, although not necessary, to force the shark to deeper water.

Partnerships

The weir fishermen provided vital knowledge, skill, and creativity in assisting the white shark’s movements into deeper water. Furthermore, their success in a high-visibility situation provided the general public with an excellent example of fishermen working to conserve an individual of a threatened species.

Related Projects

The funding from this grant contributed to the larger DMF effort to protect and assist the white shark. That effort was largely funded by DMF in-house and other Federal funds.

Presentations

Many presentations were made, primarily by Dr. Greg Skomal of DMF, about the entire incident with the white shark.

Student Participation
None

Published Reports and Papers/Images
This event was widely covered in the media. Some of the stories are linked at the DMF White Shark Website: http://www.mass.gov/dfwele/dmf/marinefisheriesnotices/white_shark.htm. The site also contains photos, video, and links to newspaper stories, including four stories or more that emphasize the contributions of the weir fishermen.

Diodati, P. and McKiernan, D. 2004. Visiting great white puts *MarineFisheries* to the test. *DMF News* 25:6-7. Available at: http://www.mass.gov/dfwele/dmf/publications/dmfn_q3_04.pdf. A copy is attached.

VI. Cod Potting in Massachusetts Bay – A Demonstration Project

Phil Walsh (foreground) helps haul a cod pot onboard the Ann Marie

Key Participants

Michael Pol
Conservation Engineering
Mass. Division of Marine Fisheries
Mike.Pol@state.ma.us

Capt. Robert Marcella
F/V *Ann Marie*
28 Western Ave
Hull, MA 02045
781-925-1290

Philip Walsh
Centre for Sustainable Aquatic Resources Marine Institute of Memorial University St. John's, Newfoundland
A1C 5R3
PH: 709-778-0501
Fax: 709-778-0661
Philip.Walsh@mi.mun.ca

Project Objectives and Scientific Hypotheses

The goal of this study was to determine if cod potting is a viable harvest method, thus allowing both voluntary industry adoption and/or management action to encourage cod potting in Massachusetts and nearby waters.

Objectives were to:

1) Obtain operational information, including:
   - What type of vessel (size & configuration) does one need?
   - How does it have to be rigged?
   - How many pots per vessel should regulators allow?
   - Can multi-pot trawls be used to minimize buoylines?

How much fuel does one use in a typical trip?
Is bait a limiting factor?
Which pot design is most effective?

2) Collect catch information, including:
What is the catch rate of the three types of pots?
What is the size distribution of cod?
What bycatch is found in the pots?

Abstract
Atlantic cod (*Gadus morhua*) has been the dominant species in the commercial fisheries of the Northwest Atlantic for the past 500 years. With the decline in cod populations over the past 10 to 15 years, the cod fishery today is much different than what it was historically. Even though some harvesters continue to fish cod, with reduced quotas, there are still some inherent problems within the industry. Many of these problems are fishing gear related. For example, destruction and waste of fish from trip limits and the inability of harvesters to set the appropriate amount of gear have significantly contributed to unaccounted mortality in the Massachusetts state Atlantic cod fishery. Alternative fishing processes/methods for Atlantic cod need to be addressed to lessen these impacts and sustain fisheries and the fishing industry.

Cod potting is well known for its success in harvesting top quality product with minimal by-catch and negligible environmental impacts. The use of rigid framed pots as an alternative harvesting method for Atlantic cod in New England was first considered a couple of years ago. The first tests were not successful in harvesting Atlantic cod but with new developments in Canada over the past two years, and successful harvesting, it was decided to incorporate that technology into this experiment. An established fishery using similar technology to harvest Pacific cod (*Gadus macrocephalus*) is conducted in Alaska. The Alaskan fishery is very lucrative with millions of pounds of cod harvested per year and the cod pot used in Alaska was the starting point for researchers in Canada. The Canadian pot has evolved to be significantly different from that the Alaskan pot and is more adapted to harvesting Atlantic cod from small vessels which is more in line with the cod fishery in Massachusetts Bay.

Baited pots were used to target Atlantic cod (*Gadus morhua*) in Massachusetts Bay. Twelve pots of three types of construction with dual 16-inch diameter entrances were baited with a mixture of squid, clams, herring and other baits, and fished in May-June 2005. Four pots each were constructed of 1) coated wire mesh, 2) rigid steel frame with webbing sides, or a 3) collapsible steel frame with webbing sides. Average catch of cod was 2.9 cod per soak; soak times varied from 2 to 49 hours. Average size of cod was 47.8 cm (18.8 in). Pot design did not affect catch. Size of fish caught by longlining and jigging did not appear to be different from pot catches. Nearly all cod caught were tagged, and several were recaptured. No mortality from potting was observed. Underwater filming showed cod entering and leaving the pot via the entrances. One pollock was observed during filming. A 42-ft 355-hp open-transom Novi-style lobster boat, augmented with a

wooden boom, was able to easily set and haul all twelve pots. This study marks the first known recent successful catches of cod in pots in New England.

A complete report of this project is included along with this final report

Partnerships
It has always been the goal of the Conservation Engineering Program to collaborate as fully as possible with fishermen. Fishermen identify the problems we seek to solve with gear modifications. We see fishermen as primary experts on the design, construction, and use of fishing gear. In addition, we rely on them to identify testing locations and times for testing purposes, and for many other reasons.

Related Projects
Additional cod potting was conducted in the Massachusetts Cod Conservation Zone in the winter of 2005-06 with DMF funding.

Impacts and Applications
Cod pots have the potential to catch commercial quantities, and large-sized fish, but this feasibility needs to be more fully established. Before considering the replacement of current gears industry and managers may find it useful to determine comparative catch rates between current gears and this method. Also, scientists should consider the use of pots for research applications.

Industry interest in cod pots is high as evidenced by numerous inquiries and attendance from fisherman and international research on pots continues. This project represents only one contribution to an international effort to improve the efficiency of cod pots.

Presentations
P. Walsh, M. Pol. 2005. Selective Cod Potting in Massachusetts [poster]. Creating a Fisheries Mosaic: American Fisheries Society 135th Annual Meeting, Anchorage, AK. September 11-15, 2005

The poster above and a pot were displayed at the New Bedford Working Waterfront Festival, 24-25 September 2006

M. Pol, P. Walsh, and R. Marcella. 2005. Cod Potting in Massachusetts. Northeast Consortium 5th Annual Participant's Meeting, Portsmouth, NH. October 27, 2005

M. Pol, M. Szymanski, P. Walsh, and R. Marcella. 2006. Cod Potting in Massachusetts USA. ICES/FAO WGFTFB Annual Meeting, Izmir, Turkey. April 3-7, 2006.

A display including a pot and video was displayed at the Maine Fishermen's Forum, 2 March 2006.

M. Pol, M. Szymanski, P. Walsh, and R. Marcella. 2006. Cod Potting in Massachusetts USA. UNH Pot Workshop. Portsmouth, NH. 12 July 2006.

M.Pol, P. Walsh. 2006. Selective Cod Potting in Massachusetts [poster]. ICES Symposium on Fishing Technology in the 21st Century. Boston, MA. 30 October – 3 November 2006.

M. Pol. 2006. It isn't the pot – it's the cod. International Technical Workshop on Gadoid Capture in Pots. Gloucester, MA. 4 November 2006. Included display of one pot.

Student Participation
None

Images
Videotape footage was collected as part of the project. The footage is provided on the accompanying DVD, and archived by the Conservation Engineering Program of DMF using the following information.

ID Number	Title	Date	Medium
05MADMF924	Cod Potting underwater footage	6/1/2005	Mini DV
05MADMF925	Cod Potting underwater footage	6/2/2005	Mini DV
05MADMF926	Cod Potting deck footage	5/27/2005	Mini DV

Future Research
No further research is currently planned on pots, although consideration is being given to possible research directions.

Published Reports and Papers
Casella, C. 2006. GOM Cod Update: DMF makes the most of inshore cod closure. *The Fisherman*, March 16, 2006

La Valley, K. 2005. MA Fisherman, DMF find cod pot that works. *Commercial Fisheries News*, September 2005

Manning, C. 2006. Projects share results, advice at Forum. http://www.northeastconsortium.org/maine_fish_forum_2006.shtml

Pol, M, Walsh, P., Marcella, R. 2005. Cod potting in Massachusetts: A demonstration project. Report to the Northeast Consortium. (attached)

List of Attachments

I. Flume Tank Testing of Trawl Innovations
La Voie, W.A. 2002. NE fishermen, scientists test trawl ideas. *Commercial Fisheries News*, March 2002. Downloaded from Fishresearch.org
http://www.fishresearch.org/Articles/2002/03/030802_trawl_ideas.asp

CD Photographs with captions and flume tank results (2 CDs)

II. A Preliminary Evaluation of Inshore Groundfish Pots
Goudey, C.A, Thomson, M. 2003. A Preliminary Evaluation of Inshore Groundfish Pots. MIT Sea Grant College Program, Center for Fisheries Engineering Research Project Report. 5 p.

III. Third North Atlantic Responsible Fishing Conference, Yarmouth, Nova Scotia.
Anonymous. 2003. Responsible fishing conference coming to New England next. *Commercial Fisheries News*, September 2003. Downloaded from
http://www.fishresearch.org/Articles/2003/09/responsible_fishing.asp

IV. Sponsorship of the 4th Responsible Fishing Conference
Agenda
Photographs (see CD 2)

V. Weir Fishermen Help Rescue White Shark
Diodati, P. and McKiernan, D. 2004. Visiting great white puts MarineFisheries to the test. DMF News 25:6-7.

VI. Cod Potting in Massachusetts Bay – A Demonstration Project
Pol, M, Walsh, P., Marcella, R. 2005. Cod potting in Massachusetts: A demonstration project. Report to the Northeast Consortium. (Accompanying bound material)

DVD of video collected during pot experiments