

Final Report

FA133F-05-CN-1381 Task 1

SFC APPROVED	
BY	
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**Project Title:**

**A Fishing Gear Workshop by Fishermen for Non-fishermen**



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**Key Project Participants:**

David Goethel, F/V "Ellen Diane", Hampton, NH  
Erik Anderson, F/V "Kris n' Kev", Portsmouth, NH  
Joe Jurek, F/V "Mystique Lady", Andover, MA  
Tom Lyons, F/V "Marion J.", Hampton, NH

**Submitted To:**

NOAA Fisheries Service  
Cooperative Research Partners Program  
One Blackburn Drive  
Gloucester, MA, 01930-2298

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## **A Fishing Gear Workshop by Fishermen for Non-fishermen**

*Summary.* More and more people without fishing gear background are involved in fisheries management processes and debates. While they have various strengths in their respective professions, a lack of knowledge on fishing gears and their operations is evident. Building upon the success of the 2005 pilot project, a three-day workshop was conducted between August 21-23, 2006. Twenty-three (23) individuals registered for the workshop, and 18 individuals participated in both the land-based hands-on activities and boat demonstrations. Participants included National Marine Fisheries Service (NMFS) employees (permit office and protected resource division), Congressional and Senatorial staffers, State fisheries scientists and employees (MA and ME), Marine Docents, UNH Cooperative Extension staff, and cooperative research funding agency staff. The program was conducted at sea off of the coast of New Hampshire and on land at the Urban Forestry Center, Portsmouth, NH. Two commercial trawlers (F/V Mystique Lady and F/V Ellen Diane) and two commercial gill netters (F/V Marion J. and F/V Kris N' Kev) owned and operated by the industry instructors were used as at-sea demonstration platforms of fishing gear operations. The Urban Forestry Center was used for fishing gear design and operation theory and hands-on net mending and gear demonstrations. Post-workshop evaluations indicated that the overall rating of the workshop was "very good". Ninety-percent (90%) of participants reported an extensive increase in their knowledge of fishing gear components and operations following the workshop. The average increase in knowledge was 4.14 on a five point scale with (1) being no increase and (5) an extensive increase. All participants reported that they would recommend this workshop to their colleagues.

### **Rationale**

Fisheries management in the US has become very complicated. Restrictions on fishing gears and operations have become key components in fisheries management plans. More and more people without fishing gear background are involved in fisheries management processes and debates. This group of people includes fisheries managers and staff members who work for various committees, councils and commissions, federal and state fisheries departments, funding agencies supporting cooperative research on fisheries, congressional staffers, and representatives of conservation organizations. While they have various strengths in their respective professions, a lack of knowledge on fishing gears and their operations is evident. There is a need for these groups of people to have better knowledge and understanding of commercial fishing gears and their operations, so that communication between the agencies and commercial fishermen can be improved. On the other hand, many of such members do not have opportunity to go to sea on

fishing trips due to their work commitment or due to insurance reasons. Such gaps can be filled with training workshops tailored to this need.

Since 2001, the Northeast Consortium has supported a multi-year industry workshop aimed at developing a better understanding of conservation technologies in trawls and enhancing exchanges between scientists/managers and fishermen. This workshop series was developed by Dr. Pingguo He, a fisheries scientist with the University of New Hampshire. Workshops were conducted at the Memorial University flume tank located in St. John's, Newfoundland, and primarily attended by fishing industry participants, with representatives from federal and state agencies, sea grant colleges and funding agencies. The workshops have been very well received by the participants. In addition to improving their knowledge of fishing gear design and function, these workshops have provided an opportunity for cooperative partnerships to develop between the fishermen and non-fishermen. These interactions build a respect and understanding that cannot be obtained in a regulatory hearing environment.

Over the course of these workshops, it was apparent that there are other groups of interested parties which also need fishing gear knowledge, and it is impossible for many of them to travel to the flume tank due to financial and time commitment. These parties include scientists who work with fishermen, staff and volunteers working for fishermen associations and organizations, fisheries managers and staff members who work for various federal offices, committees, councils and commissions, specialist who work for funding agencies and federal and state permit offices, congressional staffers, and representatives of conservation organizations.

To meet the needs of these potential groups, a three-day workshop first organized in 2005 was conducted with the objective of increasing the non-fishermen's understanding of fishing gears, operational methods, and conservation issues. Dr. Ken La Valley, a commercial fisheries specialist and environmental scientist with NH Sea Grant, and Dr. He a fisheries research professor at UNH worked cooperatively with local fishermen with the planning and execution of the project. This project report summarizes the results of the second workshop, conducted in 2006 and evaluates the performance and potential impacts of the program.

### **Review of Previous Work**

The 2005 workshop, funded by the Northeast Consortium and led by Dr. He, was a highly effective and well received program. Sixteen (16) participants, which included government

staffers, State and Federal fisheries managers, and marine education groups participated in the three-day program. Following the workshop, the overall rating was very good, with an average of 3.8 to 4.7 out of a possible 5 (He, et al., 2006). All of the participants indicated that they would recommend the program to their colleagues if another similar workshop were held. Recommendations included more hands-on activities, and information on the impact of fisheries regulations on day-to-day operations for commercial fishermen.

### **Workshop Objectives**

The objective of the project was to improve understanding of commercial fishing gears and operational methods in use in the northeastern United States for those with personal and professional interests in fisheries but who are not fishermen, so that they can be more proficient in their dealing with fishing gear related issues. Fishermen training non-fishing professionals will encourage cooperative partnerships and bridge gaps in communication and understanding. The specific workshop goals were to:

- ❖ Plan, coordinate and conduct a three-day fishing gear workshop with at-sea and on-the-dock components;
- ❖ Involve four commercial fishermen as instructors on fishing gear and their vessels as educational platforms;
- ❖ Provide training opportunities for fishery staff on fishing gear, operational and contemporary fishery issues.

### **Workshop Participants**

The project aimed for 16 participants, but due to the overwhelming response to the 2005 workshop 23 individuals registered for the workshop, and 18 individuals participated in both the land-based hands-on activities and boat demonstrations. Participants included National Marine Fisheries Service (NMFS) employees (permit office and protected resource division), Congressional and Senatorial staffers, State fisheries scientists and employees (MA and ME), Marine Docents, UNH Cooperative Extension staff, and cooperative research funding agency staff. Participant demographics are detailed in Table 1., below.

Organization	# Participants
NMFS Personnel	7
State Agencies	3
Marine Docents	6
Government Constituents	4
Academic Inst.	3
<b>Total</b>	<b>23</b>

**Table 1. Participant Demographic**

### **Industry Instruction Team**

David Goethel, a commercial trawl fisherman based in Hampton, New Hampshire, was the initial impetus for the workshop concept, and worked with Dr. He to submit the original proposal that was funded by the Northeast Consortium. David Goethel has tremendous experience in fishing gear, operations and fishing grounds in the western Gulf of Maine. He has been involved in various cooperative research projects such as cod tagging, supplying brood stock for aquaculture experiments, and environmental monitoring. He is very active in fisheries management processes and has served in various fisheries committees of the New England Fisheries Management Council, and is currently a member of the New England Fisheries Management Council.

Erik Anderson from Portsmouth, NH has also been involved with the program since the initial 2005 workshop. Mr. Anderson is an experienced gillnet fisherman with more than thirty years of experience. Mr. Anderson is very familiar with gillnets and other fixed gear in use in the Gulf of Maine. Erik is the president of the New Hampshire Commercial Fishermen's Association, and continues to be involved with NMFS regulatory groups such as the marine mammal take reduction team.

Joe Jurek, Captain of the F/V "Mystique Lady", is a trawler based in Seabrook, NH. Joe has been an asset to the project and was also an industry instructor during the 2005 workshop.



Exhibit 1. Joe Jurek demonstrates net mending to Moira Kelley (NMFS)

Tom Lyons, Captain of the F/V "Marion J.", is a gillnetter based in Hampton, NH. Tom as well as the others has been an enthusiastic participant in the program and also was part of the instruction team during the initial 2005 workshop.

### **Non-Industry Instructors**

Pingguo He, a University of New Hampshire research associate professor of fisheries at the Institute for the Study of Earth, Oceans and Space, and a fishing gear specialist with the NH Sea Grant, was a participating lecturer for the first day of the workshop. Dr. He has considerable experience on fish behavior and fishing gear, and conducting underwater observations of fish near fishing gears through his work in Scotland, Japan, Canada and New England. He is also an internationally recognized expert in trawl design, gear operation, and analysis of fish behavior. Dr. He, lectured participants on basic fish behavior and its use in developing more selective fishing gear to reduce bycatch and reduce impacts on marine habitats.

David Beutel, a University of Rhode Island Sea Grant Extension fisheries specialist, has worked with the fishing industry since 1977, including seven years as a commercial fisherman and eight years as a fishing gear manufacturer. He has been working in fisheries research and outreach for Rhode Island Sea Grant since 1992. Harvesting methods, fishing gear efficiency, and bycatch reduction are areas where Beutel concentrates his research and outreach efforts with the commercial fishing industry and fishery managers. Educational programs on fishing techniques and fishery issues, serving the commercial and recreational fishing communities as well as the public, are other areas of interest. Mr. Beutel, has expertise in net building and mending and was invited to offer a hands-on demonstration on net mending and net construction. Mr. Beutel also brought several scale models of fishing gear for demonstration purposes.



Exhibit 2. Erik Anderson explains gill net components.

Ken La Valley, the principal investigator, is a UNH Cooperative Extension/NH Sea Grant commercial fisheries specialist. Dr. La Valley has research experience in fish behavior, fishing

gear, and fish physiology, as well as considerable experience working with commercial fishermen on cooperative research projects. Dr. La Valley, was responsible for workshop planning, publicity and registration, as well as for fishing permits, and educational materials.

### **Workshop Location and Content**

Keeping with the success of the 2005 workshop, the program was conducted at sea off of the coast of New Hampshire and on land at the Urban Forestry Center, Portsmouth, NH. Two commercial trawlers (F/V Mystique Lady and F/V Ellen Diane) and two commercial gill netters (F/V Marion J. and F/V Kris N' Kev) owned and operated by the industry instructors were used as at-sea demonstration platforms of fishing gear operations. The classroom and parking lot at the Urban Forestry Center was used for fishing gear design and operation theory and hands-on net mending and gear demonstrations.

The goal for the workshop was to be as hands-on as possible and provide opportunities for participants and industry instructors to interact. An Exempted Educational Activity Authorization was obtained by the NMFS permitting office for the at-sea component of the program. The workshop topics included;

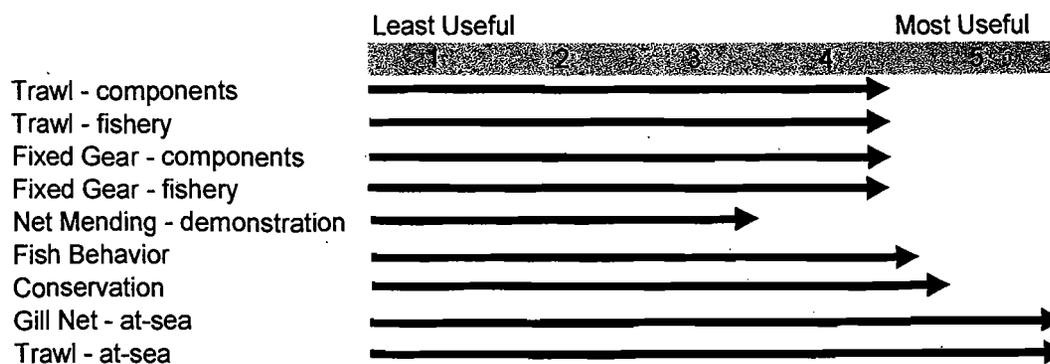
- trawl gear components, operation and the fishery
- fixed gears, with concentration on gill net components, operation and the fishery
- hands-on mobile gear identification and explanations
- hands-on fixed gear identification and explanations
- trawl net designs and net mending techniques
- hands-on demonstration of bycatch reduction technologies
- fish behavior, selectivity and conservation in commercial capture fisheries
- at-sea demonstrations of gillnet operations
- at-sea demonstrations of trawl operations

The workshop was conducted between August 21 and August 23, 2006. The following box provides the schedule of activities during the three days:

<b>Day 1 <u>Monday, August 21st</u></b>			
9:30 am	Arrival, refreshments	3:00	Break
10:00	Introduction and Logistics	3:30	Fish Behavior, fishing gear and conservation issues in harvesting operations (Dr. Pingguo He, UNH)
10:10	Trawl gear: components, operation, and fishery (David Goethel, NH Trawl Fishermen)		
11:10	Break	4:30	Discussion
11:30	Fixed gears (Eric Anderson, NH Gill Net Fishermen)	5:30	Reception and Dinner at the Sheraton Harborside (Warner Room)
<b>Day 2 <u>Tuesday, August 22nd</u></b>			
12:30 pm	Lunch (supplied)	8:00 am	Boarding (Hampton State Pier)
1:30	Mobile gear identification and explanation (David Goethel / Joe Jurek)	2:00 pm	Approximate Return
	Fixed gear identification and explanation (Eric Anderson / Tom Lyons)	<b>Day 3 <u>Wednesday, August 23rd</u></b>	
	Net mending and building techniques (David Beutel, URI Fisheries Center)	8:00 am	Boarding (Hampton State Pier)
		2:00 pm	Approximate Return

### Participant Feedback

Post-workshop evaluations indicated that the overall rating of the workshop was “very good”. The individual components of the program were rated by participants as “least useful” to “most useful” on a five point scale, the results are indicated below in Table 2. The least useful component was the hands-on net mending demonstrations and the most useful activities were the at-sea gear demonstrations. Ninety-percent (90%) of participants reported an extensive increase in their knowledge of fishing gear components and operations following the workshop. The average increase in knowledge was 4.14 on a five point scale with (1) being no increase and (5) an extensive increase. All participants reported that they would recommend this workshop to their colleagues.



**Table 2. Participant content evaluation results**

Recommendations by participants for future workshops included topics such as; marine aquaculture, increased coverage of specific regulations, and the lobster fishery.

### **Workshop Impact**



The workshop built upon the 2005 pilot program recruiting higher numbers of participants. Participants included National Marine Fisheries Service employees, scientists and representatives from State marine agencies, marine education groups, government constituents, and academic institutions. The consistent interest in the project has resulted in planning for a 2007 workshop. Currently, potential funding sources are being considered.

Exhibit 3. David Goethel explains bycatch reduction technologies.

### **References Cited**

He, P. et al. 2006. A fishing gear workshop by fishermen for non-fishermen. Final report submitted to the Northeast Consortium. University of New Hampshire, Durham, NH. UNH-FISH-REP-2006-025. 8 p.

## Workshop Brochure

### Fishing Gear Workshop for Non-fishermen

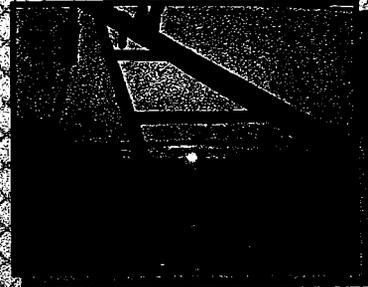
**Date:** August 2006 (TBA)

**Venue:** Urban Forest Center, Portsmouth  
Hampton Harbor/Seabrook Harbor, NH  
Inshore Gulf of Maine off New Hampshire

**Instructors:** David Goethel, F/V "Ellen Diane"  
Erik Anderson, F/V "Kris n' Key"  
Joe Jurek, F/V "Mystique Lady"  
Tom Lyons, F/V "Marion J."

**Coordinator:** Ken La Valley, Univ. of New Hampshire, NH Sea Grant

**Funded by:** NOAA Cooperative Research Partnership Program



#### Provisional Schedule of Activities

##### Day 1

Introduction and overview of the workshop  
Introduction to fishing gears and methods  
Introduction to selectivity and conservation during capture

On the wharf Hands on net mending/building demonstration  
Gear identification, measurement, and demonstration  
Gillnet group & Trawl group

##### Day 2

At-sea demonstration on board commercial vessels  
(trawl or gillnet)

##### Day 3

At-sea demonstration on board commercial vessels  
(trawl or gillnet/switch gear type with Day 2)  
Discussion and wrap up

#### The workshop

This three-day workshop will be instructed by commercial fishermen for non-fishermen on commercial fisheries in New England, fishing gear operations, and on-board demonstration of trawls and gillnets

#### The purpose

- Improve knowledge of commercial fishing gears and operation
- Foster communication between commercial fishermen and non-fishermen
- Provide opportunities for participants on board commercial trawl and gillnet vessels

#### The participants

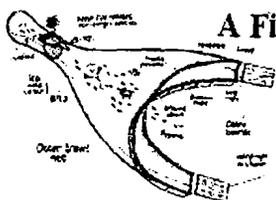
- NMFS administrative staff (grant staff, permit staff, Coast Guard, and science staff)
- Congressional fisheries staffers
- Fisheries council and commission members and staff
- Conservation and environmental groups
- University/research institute scientific/technical staff

#### Contact

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Email: Ken.lavalley@unh.edu

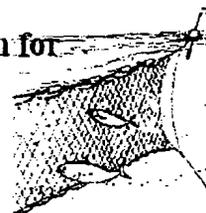


# EVALUATION AND COMMENTS



## A Fishing Gear Workshop by Fishermen for Non-fishermen

Aug. 21 – Aug. 23, 2006



1. Overall rating and comments on the workshop

Technical content

Logistics

2. Which topics interested you? (Please circle)

	Least interested			Most interested	
Trawl gear: Components and operation	1	2	3	4	5
Trawl gear: Fishery	1	2	3	4	5
Fixed Gears: Components and operation	1	2	3	4	5
Fixed Gears: Fishery	1	2	3	4	5
Net Mending: Demonstration	1	2	3	4	5
Fish behavior	1	2	3	4	5
Fishing Gear and Conservation Approaches	1	2	3	4	5
Gill Net Demonstration	1	2	3	4	5
Trawl Gear Demonstration	1	2	3	4	5

3. Rank the degree to which the workshop increased your knowledge (circle).

No increase    1       2       3       4       5       Extensive increase

4. How can we improve the workshop?

5. Would you recommend this workshop to your colleagues?

6. What topics (if any) would you have liked to cover?

Occupation: \_\_\_\_\_

Optional:    Name: \_\_\_\_\_  
                  Organization: \_\_\_\_\_

## Additional Photographs



David Beutel (URI Fisheries) explains trawl components.



William Wrobleski (left) of Senator John Sununu's Office chatting with Joe Jurek and Moira Kelley (NMFS).

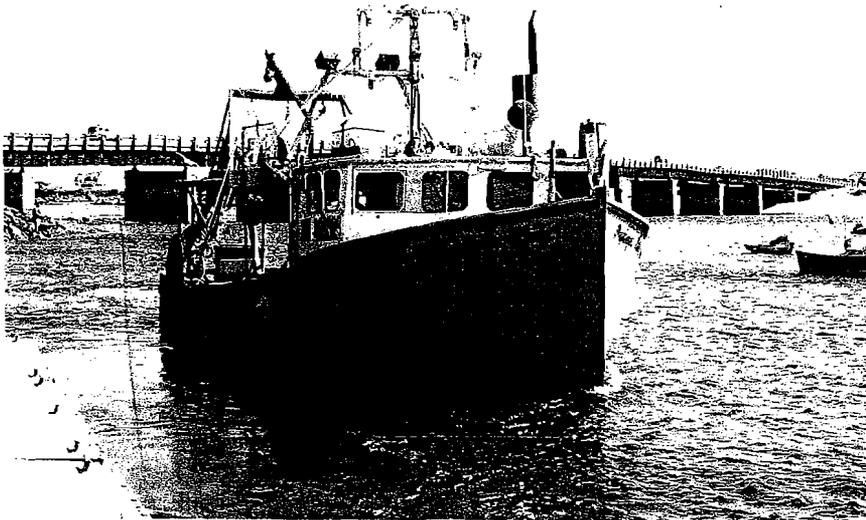


Tom Lyons explains gillnet components.



Erik Anderson demonstrates gillnet operations aboard the F/V Kris n' Kev.





The F/V Mystique Lady



Joe Jurek hauls back his trawl net during at-sea demonstrations.