



NMFS Cooperative Research Partners Program Northeast Region

The National Marine Fisheries Service, N.E. Region's Cooperative Research Partners Program was initiated in 1999. The goals of this initiative are to improve the data upon which fishery management decisions are made as well as to improve communication and collaboration among commercial fishery participants, scientists and fishery managers. NMFS is working in close collaboration with the New England Fishery Management Council in setting research priorities to meet management information needs.

Fishery management is by nature a multiple year endeavor, which requires a time series of fishery dependent and independent information. Additionally, there are needs for immediate short-term biological, oceanographic and habitat information to help solve fishery management issues. Thus, two avenues to cooperative research have been initiated. First, several short-term research projects will be funded annually through competitive contracts and grants. Second, the development of three long-term collaborative research programs will be developed, 1) fishing industry cooperative research fleets, 2) groundfish tagging, and 3) conservation engineering and bycatch research.

First, two cooperative research fleets are being designed to collect detailed fishery dependent and independent information from commercial fishing vessels. The original concept developed by the Canadians was referred to as "sentinel fleets". In the New England groundfish setting, it is more appropriate to consider two industry research fleets, i.e., industry-based survey (fishery independent) and a commercial study fleet (fishery dependent).

Additionally, a groundfish tagging program is under development to collect information on migrations and movements of fish, identify localized or regional stocks, and collect genetic information on groundfish.

Finally, a conservation engineering program will be developed to work primarily on commercial fishing gear modifications, improve selectivity of catch on directed species, reduce bycatch, and minimize habitat impacts.

The following report presents the results of a cooperative research study on the "*Near Term Observations of the Effects of Smooth Bottom Net Trawl Fishing Gear on the Seabed*" Contract 50-EANF-0-00061 conducted by Boat Kathleen A. Mirarchi, Inc. of Scituate, MA and CR Environmental, Inc. of Falmouth, MA. This trawl impact study was a collaborative effort in which scientists used their skills to provide insight into the marine ecosystems fishermen affect, and fishermen provided scientists their sea skills and knowledge of the areas they fish. The project was conceived by Francis J. Mirarchi of Boat Kathleen A. Mirarchi (BKAM), Scituate, MA. Scientists, John H. Ryther, Jr. and Charlotte Cogswell, from CR Environmental, Inc. (CR)

of Falmouth, MA worked closely with Mr. Mirarchi to design a cooperative research project and in turn were supported by Dr. Barbara Hecker of Woods Hole, MA, Dr. Allan Michael of Magnolia, MA, and Dr. David Stevenson of NOAA/NMFS Gloucester, MA.

One of the goals of the project was to involve as many local fishermen as possible and for the work to be conducted at the inshore fishing grounds they frequented approximately ten miles off Scituate Harbor. Four inshore draggers, one gillnet vessel, and 10 fishermen were recruited by BKAM and CR Environmental (Troy Dwyer and crew F/V *Andrea J II*, Scott McKinnon, John Welch F/V *Lady Irene*, and John Shea and crew F/V *Yankee Rose*). Mr. Mirarchi is owner and operator of the F/V *Christopher Andrew*.

Not only did the fishermen provide their vessels for the project, they participated in all phases of the field operations including running survey lines using Hypack, a survey software package new to them, operating oceanographic winches, and deploying ROVs, video sleds, side-scan sonar towfish, grab samplers, and CTD profilers under the direction of shipboard scientists. During the benthic sampling operation, the fishermen also played a major role in the onboard sieving of the benthic samples and their preservation in formalin.

Fishermen were not only involved in the field operation they played a role in benthic sample presorting, helped review underwater video, and contributed to the project report. Project scientist Dr. Allan Michael held a benthic infauna sorting class for the fishermen in Scituate at BKAM. There Frank Mirarchi, John Shea, and other project fishermen spent several weeks staring through dissecting microscopes, and presorted many of the 72 benthic grab samples into vials for annelids, mollusks, crustaceans and other organisms. Frank Mirarchi also assisted Dr. Barbara Hecker and Chip Ryther in the review of underwater video data providing the research team with valuable local knowledge of the fish and invertebrates at the study sites which he fishes. Mr. Mirarchi also contributed to the final report providing his knowledge of fishing gear, the environmental and geologic features of the study areas, and the fishing history of these sites.

For further information on the Cooperative Research Partners Programs please contact:

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