U. S. Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P. O. Drawer 1207
Pascagoula, MS 39568-1207

NOAA Ship OREGON II Cruise 87-06 (168)
7/28-8/28/87

INTRODUCTION

The NOAA Ship OREGON II departed Pascagoula, MS on July 28, 1987 to conduct a squid survey and collect specimens in selected areas around Puerto Rico and the U. S. Virgin Islands. This cruise was conducted in response to the Caribbean council's request for assessment of unutilized squid resources and verification of species identifications made during the 1985 Johnson Sea Link II submersible survey.

Port calls were made in Mayaguez, PR August 3 - 4; St. Thomas, VI August 12 - 14; and San Juan, PR August 17 - 18. The vessel returned to Pascagoula August 27. During the August 17 San Juan port call, Mr. Justo A. Mendez, Secretary to the Department of Natural Resources, and Mr. Iven Sanchez, Executive Director of CODREMAR, toured the vessel. Discussions with Mr. Mendez and Mr. Sanchez included the cruise mission and probable objectives of further cruises to the Caribbean area. In addition, Mr. Mendez discussed his intent to make Puerto Rico the hub for fisheries development and management techniques in the Caribbean.

OBJECTIVES

1) Survey selected sites for squid with a high opening fish trawl.
2) Collect specimens to verify species identifications based on video records from the 1985 Johnson Sea Link II submersible survey of Puerto Rico and the Virgin Islands.
3) Collect CPUE and size/sex data from all species caught using bottom longlines.
4) Collect algae samples from selected hard bottom sites using a small dredge.

METHODOLOGY

Stations for specimen collections were selected based on data collected during the 1985 submersible survey. Forty foot shrimp trawls were towed both day and night between 173 and 550 fathoms (fm). Tow duration was 45 minutes. Stations for the squid survey were selected based on bottom type. High opening fish trawls were towed for one hour duration during daylight (7 a.m. to 7 p.m.) with towing depths between 175 and 520 fm. Dredge site selections were based on bottom type and optimum depths for algae growth. Dredging depths ranged between 20 and 55 fm, with tow duration between 5 and 10 minutes. Bottom longline stations were selected based on areas where previous catches of Queen snapper (*Etelis oculatus*) had occurred. Sets were made

during both day and night hours at most sites in 80 to 350 fm. Soak time was two hours and squid was used for bait.

Gear used during the survey included trawls, dredges and bottom longlines. Trawls included 40-ft. two seam semi-balloon shrimp trawls and 65 and 80 ft. high opening fish trawls. Door sizes varied from 8'x40" wooden chain doors (shrimp trawls) to 9'x40" wooden chain doors and 3 meter steel "v" doors (fish trawls). Dredges were either 2'x10" or 3'x10" and were constructed of a welded steel frame with a nylon web bag covered with polypropelene chafing gear. Weak links were placed on one side of the bridle allowing the dredge to break loose under heavy pressure, thereby preventing excessive damage. Bottom longlines consisted of 200 fm of 5/16" twisted iceline as the mainline and 100 gangions 27" long constructed from 100 pound test monofilament and No. 7 circle tuna hooks.

A 200 meters hydrocast was made at all stations which were more than 5 miles apart. Expendable bathythermal probes (XBT's) were dropped at all stations where hydrocasts were made. Hydrographic data collected included temperature, salinity and dissolved oxygen.

RESULTS

Trawl and bottom longline catch rates were low throughout the entire survey area. Dredge collections were, however, very successful, with many forms of algae collected. A total of 141 finfish and invertebrate species were caught in the 40' shrimp trawl, 195 in the combined data from the 65' and 80' fish trawls, and 19 on bottom longlines. Finfish caught in trawls were generally small deepwater species of no commercial importance. A compilation of all species caught is available through the NMFS, Mississippi Laboratories, Pascagoula Laboratory (Gary M. Russell, Chief Scientist). The great depths hampered setting trawls, which resulted in 19 water hauls and 9 sets in which the trawls became twisted. In addition, 22 trawls were destroyed by rough and rocky bottom, which prevented adequate sampling of these areas. Future efforts to sample this area will require different gear, possibly beam trawls, dredges or towed underwater camera systems.

Shrimp Trawls

Thirty-nine shrimp trawl stations were completed, of which 11 had no catch. In the remaining tows, catch rates were very low, ranging from 1 to 47 pounds per tow with a total catch of only 124 pounds. By weight fin fish represented 52%, sponge and sea urchins 29%, crustaceans 13% and other species 5% of the catch. One misty grouper (*Epinephelus mystacinus*) was collected. No other commercially important species of snapper, grunts, or porgy were caught in shrimp trawls during the cruise.

Fish Trawls

Thirty fish trawl stations were occupied, of which 8 had no catch. Catch rates were again very low ranging from 1 to 187 pounds per tow with a total catch of only 706 pound. By weight, sponge and urchin made up 67%; finfish, 23%; crustaceans, 3%; and others, 6% of the catch. One Queen snapper was collected, but no other commercially important species were taken in fish

trawls. Squid were collected at several stations but catch rates were generally low, ranging from .1 to 4 pounds. A total of only 8.3 pounds of squid were caught during the cruise.

Bottom Longlines

Fifteen bottom longline sets were made with catches ranging from 2 to 140 pounds. A total catch of 507 pounds was taken during the cruise. Queen snapper represented 9%; Wenchmen snapper (*Pristipomoides macrophthalmus*), 2%; and sharks, 82% by weight of bottom longline catches. Catch rates of snapper and grouper in the survey areas were lower than expected.

Dredges

Twenty five dredge hauls resulted in the collection of many species of algae. However, identifications of these collections will require months of laboratory work at the University of Puerto Rico, Mayaguez, Puerto Rico. Those data will be available through the NMFS, Pascagoula Laboratory when the identifications are completed.

CRUISE PARTICIPANTS

Mike Russell, Field Party Chief, Pascagoula, MS	7/28-8/27/87
Karen Lecke, Fisheries Biologist, Pascagoula, MS	7/28-8/27/87
Jim Benton, Fisheries Biologist, Pascagoula, MS	7/28/8/27/87
Bennie Rohr, Fisheries Biologist, Pascagoula, MS	7/28-8/27/87
Sara Templeton, Cooperator, Auburn, AL	7/28-8/27/87
Sharon Riemer, Cooperator, Auburn, AL	7/28-8/27/87
Tomio Iwamoto, Fisheries Biologist, California Academy of Science, San Francisco, CA	7/28-8/22/87
Angie McGehee, Fisheries Biologist, U of PR, Mayaguez, PR	8/04-8/17/87
Joe Kimmel, Fisheries Biologist, Codremar, Mayaguez, PR	8/04-8/17/87
Dannie Hensley, Fisheries Biologist, U of PR, Mayaguez, PR	8/04-8/13/87
David Ballantine, Fisheries Biologist, U of PR Mayaguez, PR	8/04-8/13/87
Aida Rosario, Fisheries Biologist, Codremar, Mayaguez, PR	8/04-8/13/87 and 8/18-8/22/87
Bertha Cutress, Fisheries Biologist, U of PR, Mayaguez, PR	8/04-8/13/87 and 8/18-8/22/87
Felix Toro, Fishing Gear Expert, Codremar, Mayaguez, PR	8/14-8/17/87
George Dennis, Fisheries Biologist, U of PR, Mayaguez, PR	8/14-8/22/87
Lena Sang, Fisheries Biologist, U of PR, Mayaguez, PR	8/14-8/22/87
Yvonne Sadovy, Fisheries Biologist, U of PR, Mayaguez, PR	8/18-8/22/87
Jay Rooker, Fisheries Biologist, U of PR, Mayaguez, PR	8/18-8/22/87
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SUBMITTED BY:

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APPROVED BY:

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