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National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
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NOAA Ship OREGON II 87-03 (166)  
4/14 - 5/23/87

## INTRODUCTION

The NOAA Ship OREGON II departed Pascagoula, MS on April 14, 1987 to conduct a Bluefin Tuna Ichthyoplankton Survey in the Gulf of Mexico (24°N to 30°N lat. and 84°W to 94°W long.) (Fig. 1). Two port calls were made, one on May 4 in Pascagoula and the second on May 23 in Pensacola, FL. The last day was devoted to gear trials. The cruise terminated in Pascagoula on May 25, 1987.

## OBJECTIVES

- 1) Determine abundance and distribution of bluefin eggs and larvae within the Fishery Conservation Zone (FCZ) in the Gulf of Mexico.
- 2) Collect environmental and chlorophyll data from each station.

## MATERIALS AND METHODS

Stations were located 30 nm apart (every 30 minutes of latitude and longitude) with a total of 78 stations in the cruise track. The cruise track was sampled twice. At irregular intervals during the survey, the vessel departed from the scheduled stations to run a series of stations across ocean fronts and other physical features. Time and location of these special stations were determined ashore using data received from satellite imagery processed by NMFS, Mississippi Laboratories, NSTL, Bay St. Louis, MS. Special station locations were communicated to the vessel from Pascagoula. Samples taken at these special stations consisted of bongo tows, neuston tows, chlorophyll and environmental samples. The predetermined track was resumed after completing these special stations. Approximately ten days were devoted to this activity.

The OREGON II stopped at each preselected or special station and conducted a hydrocast to collect the following environmental data: temperature, salinity, chlorophyll, oxygen, secchi depth, and forel-ule color. Each hydrographic station sampled surface, mid and maximum depth (not to exceed 200 m). XBT data and water samples were collected once a day and returned to the laboratory to verify measurement of the onboard equipment.

Bongo tows were oblique, surface to near bottom (or 200 m) and back to surface. The bongo sampler consisted of two conical nets with a mesh size of 333 microns on 61-centimeter bongo frames. Vessel speed was adjusted

with the aid of an electronic inclinometer during the tow to maintain a 45° wire angle. Bongo nets were paid out at 50 m per minute and retrieved at 20 m per minute. Neuston tows were made after the bongo tows, using a 1 x 2 m net with 0.947 mm mesh towed at surface for 10 minutes at 1.5 knots. The sampling design called for bongos and neustons to be taken at every other predetermined station and neustons only at the remaining stations. At all special stations bongo and neuston samples were taken.

All plankton samples were initially preserved in 10% buffered formalin and after 48 hours were transferred to 95% ethyl alcohol for final preservation.

#### RESULTS

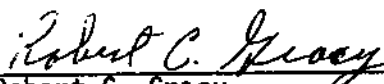
A total of 240 stations was sampled. Of these, 156 were predetermined stations and 84 were special stations located on 8 transects across the loop current boundary. In all, 320 bongo, 240 neuston, 720 oxygen and 720 chlorophyll samples were taken and 122 CTD casts and 136 XBT casts were made.

All bongo and neuston samples were shipped to NMFS, Miami, FL. Samples from predetermined stations will be shipped to the Polish Sorting Center in Szczecin, Poland. Samples from the loop current stations will be sorted at the Miami Laboratory. The environmental data were returned to the Pascagoula Laboratory for interpretation.

#### CRUISE PARTICIPANTS


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