

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southeast Fisheries Center
Pascagoula Facility
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NOAA Ship OREGON II Cruise 140
12/6-22/83

INTRODUCTION

The NOAA Ship OREGON II departed Pascagoula, Miss. on December 6, 1983 for a 17 day ichthyoplankton survey in the northern Gulf of Mexico (Figure 1). Time was lost during the cruise due to: repairs on the CTD unit; entangling the neuston net in the ship's propeller, and inclement weather which at times included gale force winds and 11-13 foot seas. Adjustments were then made to the cruise track to provide maximum sampling coverage. The cruise terminated in Pascagoula on December 22.

OBJECTIVES

- 1) Collect ichthyoplankton samples to determine abundance and distribution patterns of eggs and larvae of commercial and recreational fishes in depths to 200 meters (m).
- 2) Collect temperature, salinity, chlorophyll and dissolved oxygen data at the surface, mid-depth and maximum depths (not to exceed 200 m).
- 3) Obtain water temperature profiles (XBTs) for Minerals Management Service.
- 4) Collect insects to detect possible transgulf migrations (U. S. Department of Agriculture through contract with Louisiana State University).

MATERIALS AND METHODS

Plankton samples were taken with standard MARMAP bongo and neuston samplers except for 9 bongo tows made with opening/closing frames. The bongo sampler consisted of two conical 61 centimeter diameter nets with a mesh size of 333 microns. Tows were made using the single oblique method with towing speed varying between 1.5 and 2.0 knots. Bongo nets were set at a pay-out rate of 50 m per minute and retrieved at 20 m per minute. Sampling depth varied from a maximum of 200 m to within 5 m of the bottom in depths less than 200 m. A torpedo shaped, digital flow meter was used to determine

amount of water filtered. Neuston samples were taken with a 947 micron mesh net on a 1 by 2 m frame. Tows were 10 minutes long with half of the frame submerged. Neuston tows were initially made simultaneously with bongo tows. However, unfavorable weather which contributed to the neuston nets entanglement in the ship's propeller, resulted in their being made after the completion of bongo tows.

Samples were initially preserved in 10% buffered formalin and after 24 hours were transferred to 70% ethyl alcohol for final preservation.

Temperature and salinity data were recorded with a CTD unit. To verify CTD data, XBTs were dropped and water samples taken for salinity determinations.

One liter of water was filtered for determining chlorophyll concentrations and dissolved oxygen was measured with an oxygen meter.

Insect collections were made using 4 conical nets, 2 black light traps, 8 pheromone traps and 12 sticky traps.

RESULTS

Seventy one stations were completed, 46 of which were XBT drops only (Figure 1). Environmental collections were returned to Pascagoula for interpretations. Collections included 71 XBT drops (for Minerals Management Service), 71 salinity samples, 72 dissolved oxygen measurements and 26 temperature/salinity profiles (CTD). Twenty five bongo/neuston samples were taken and were shipped to the Polish Sorting Center in Szczecin, Poland for sorting and identification.

A total of 116 insect specimens were obtained as follows; nets (48), sticky traps (31), black light traps (15), pheromone traps (5) and 17 specimens were collected at various locations aboard ship.

CRUISE PARTICIPANTS


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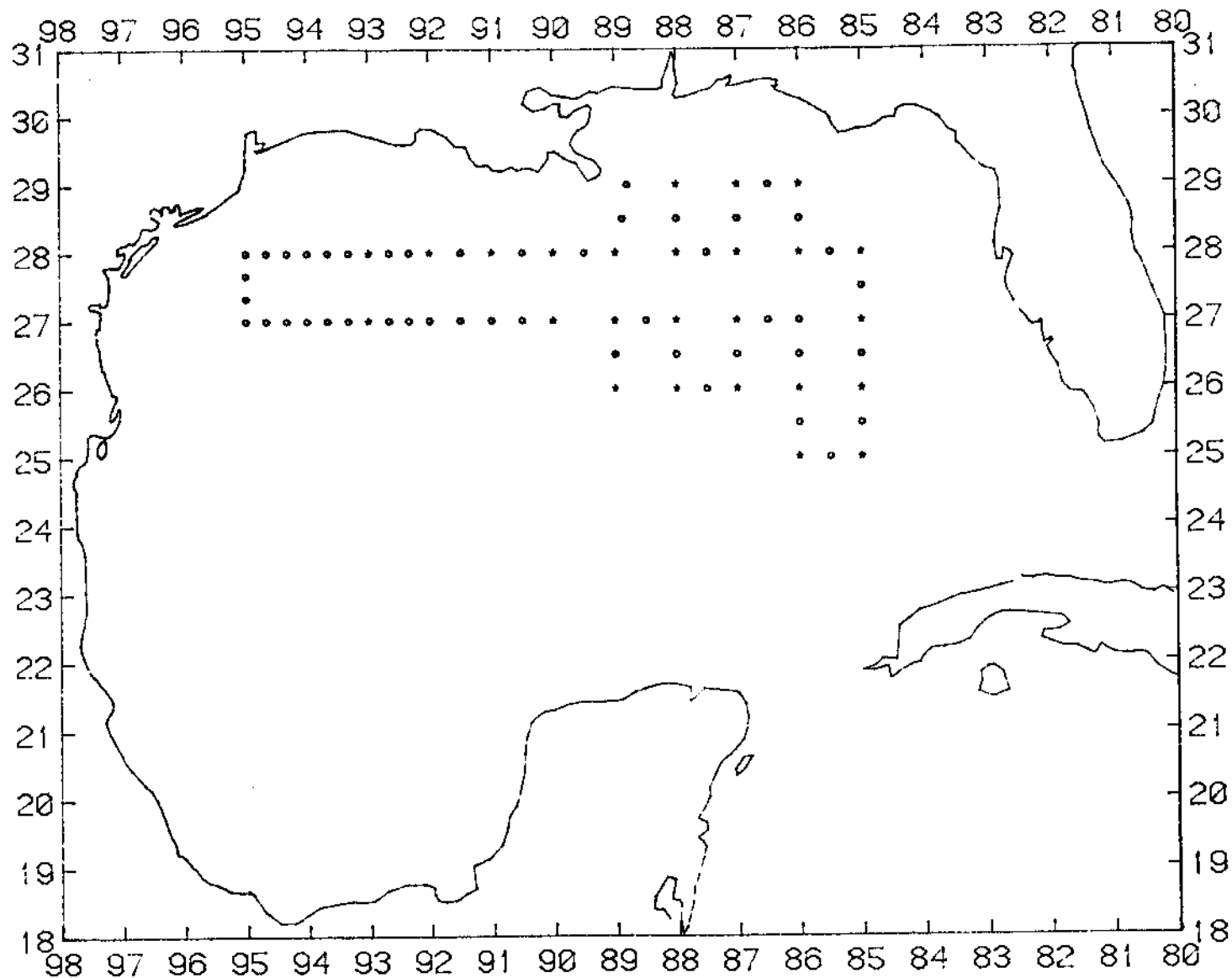


Figure 1. Station locations occupied during cruise 140. Circles represent stations where only XBTs were dropped and stars represent stations where bongo/neuston tows were made along with XBT drops and CTD casts which included the collection of water samples for dissolved oxygen, salinity, and chlorophyll determinations.