U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southeast Fisheries Center
Pascagoula Facility
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Pascagoula, MS 39567-0112

NOAA Ship OREGON II Cruise 146
8/2-28/84

INTRODUCTION

The NOAA Ship OREGON II departed Pascagoula, Mississippi on August 2, 1984 for a 27 day plankton survey across the northern Gulf of Mexico. This cruise was a coordinated Southeast Area Monitoring and Assessment Program (SEAMAP) Survey with the Florida Department of Natural Resources (FDNR) and the Louisiana Department of Wildlife and Fisheries. The State of Florida sampled from Tampa, Florida to Key West, Florida and the State of Louisiana sampled their waters. The OREGON II spent one day off Louisiana and Texas monitoring an oil spill from a tanker grounded off Cameron, Louisiana. The OREGON II survey was terminated in Pascagoula, Mississippi on August 28, 1984.

OBJECTIVES

1) Collect plankton samples with bongo and neuston nets for studies of abundance and distribution of king mackerel and other commercial and recreational larval fishes in the Gulf of Mexico.

2) Collect temperature, salinity and dissolved oxygen data with CTD at the surface, mid and maximum depths (not to exceed 200 m).

3) Monitor oil spill off Cameron, Louisiana to determine its effects on marine life and their environment.

4) Collect insects to detect possible transgulf migrations, (U. S. Department of Agriculture contract with Louisiana State University).

5) Obtain deep water XBT temperature profiles (greater than 200 meters) for Minerals Management Service.

MATERIALS AND METHODS

Plankton stations were preselected along north/south transects between 5 and 1000 fathoms (fms) from Pascagoula, Mississippi and Brownsville, Texas for the first segment and from Pascagoula, Mississippi to Tampa, Florida for the second segement of the survey (Figure 1). Plankton samples were taken with standard MARMAP bongo and neuston samplers. The bongo sampler consisted of two conical 61 centimeter 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 lowered at a rate of 30 m per minute (due to winch limitations) 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 the amount of water filtered. Neuston samples were taken with a 947 micron mesh net on a 1 by 2 m frame. Tows were of 10 minute duration with half the frame submerged.

Intensive 24 hour sampling occured at one location (Figure 1) where 24 bongo tows were conducted (12 during daylight and 12 during night) to depths of 50, 100, 200, and 400 m.

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

Temperature and salinity data were recorded with a CTD unit at each station. To verify CTD data, bucket thermometers and XBTs were used and water samples were taken for salinity determinations. Dissolved oxygen measurements were taken with an oxygen meter at the surface, mid and to depths not to exceed 200 meters.

At each station, observations of cloud cover, water color, secchi disk, barometric pressure, wave height, and wind speed and direction were recorded.

Insect collections were made using 6 conical nets, one aerial net, 2 black light traps, and 11 sticky traps.

In the area of the oil spill 10-minute trawl tows (Figure 1) were made with a 40-ft. standard shrimp trawl using 8-ft. X 40-in. wooden chain doors, tickler and loopchain, mud rollers and eight sponge floats. Trawl catches were processed for composition, number and weight of each species. Shrimp samples were returned to the laboratory for analysis.

At each trawl station a mud sample was taken with Peterson mud grab and analysed for oil.

RESULTS

One hundred eighty five plankton tows (including 24 tows at the 24 hr station) were made by the OREGON II between 5 and 1000 fms from Brownsville, Texas and Tampa, Florida (Figure 1). Plankton samples were sent to NMFS, Miami, Florida for shipment to the Polish Sorting Center in Szczecin, Poland for sorting and identification.

Environmental data were returned to Pascagoula, Mississippi for interpretation. Environmental measurements included 49 secchi disk and water color measurements, 185 CTD casts, 7 XBT drops, 28 bucket thermometer measurements, 185 cholorophyll samples and 553 disolved oxygen readings.

Approximately 1500 insects were recorded from 68 stations throughout the survey. Lepidoptera (213 specimens) represented 14.2% of the total insects recorded. The majority of the insects (80.3%) were collected in the light traps.

Ten trawl stations were conducted in water depths of 5 to 10 fms between Galveston, Texas and Cameron, Louisiana. Total catch weight ranged from 150 lbs off Galveston to 21 lbs southwest of Sabine, Texas. Atlantic croaker (Micropogon undulatus) and butterfish (Peprilus burti) dominated the trawl catches with the highest catch of Atlantic croaker being 130 lbs out of a total catch of 140 lbs in a 10 min tow. Brown shrimp (Penaeus aztecus) were the dominant shrimp. The highest brown shrimp catch was 9.8 lbs in a 97 lbs tow southeast of Sabine, Texas.

No traces of crude oil were found in any of the trawl catches, water or mud samples.

Cruise Participants
(8/2 to 28/84)

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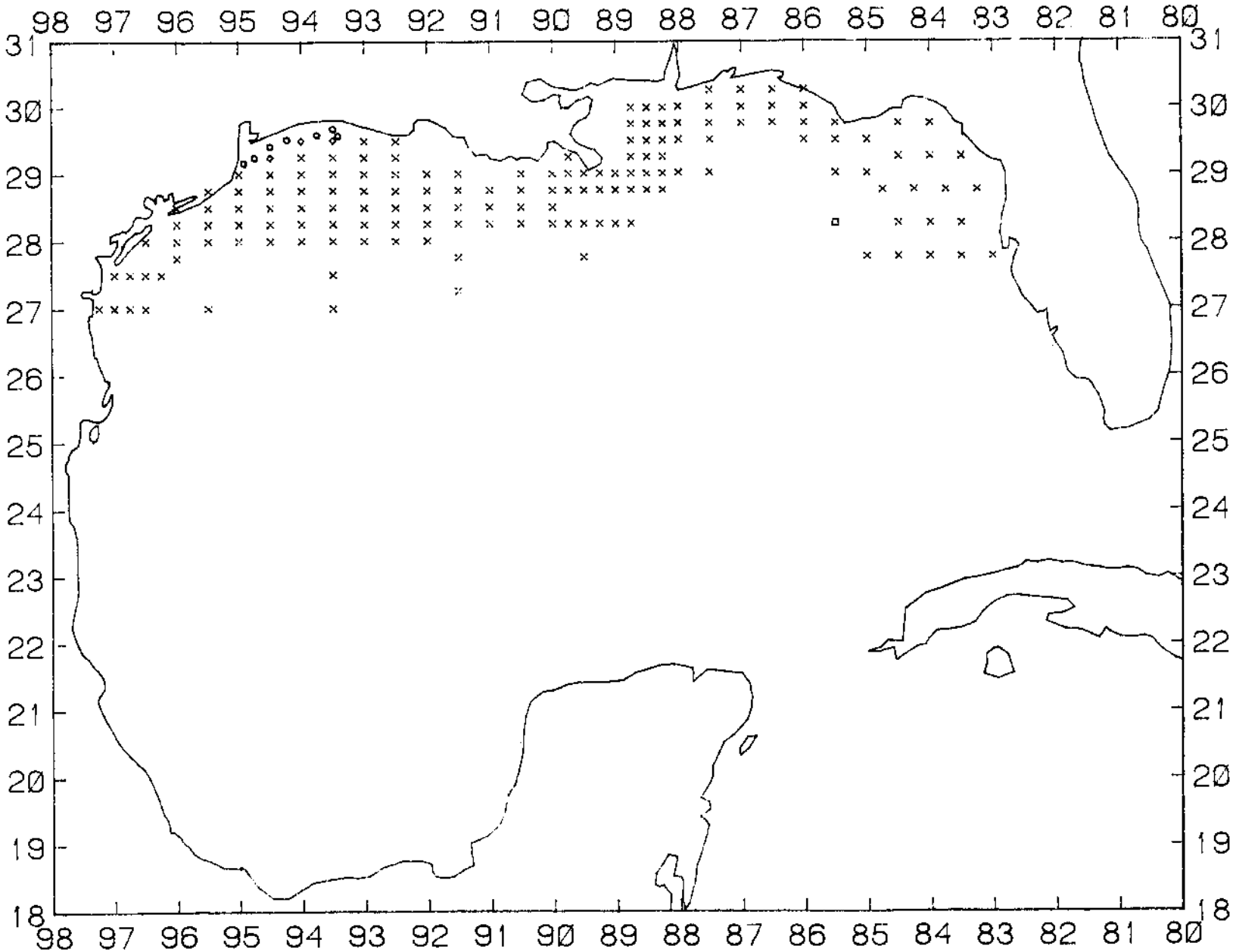

Figure 1. Station locations for cruise 146 (August 2-28, 1984). The x's represent stations where standard MARMAP bongo/neuston tows were made and environmental data collected. The square represents the 24 hour intensive sampling station. Circles represent trawl/neuston stations and the diamond symbols represent trawl/neuston and bongo stations.