

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

FRS OREGON II Cruise 134
4/21-5/24/83

INTRODUCTION

The FRS OREGON II departed Pascagoula, Miss. on April 21, 1983 for a 34 day ichthyoplankton survey in the northern Gulf of Mexico. A port call scheduled for Brownsville, Tex. on May 8 and 9 was cancelled so that the OREGON II could return to Pascagoula on May 4 and 5 in order to make changes in the remaining cruise track. Additional port calls were made in St. Petersburg, Fla. on May 13 (to offload a malfunctioning STD unit) and Key West, Fla. (May 16 and 17). The cruise terminated on May 24 in Pascagoula.

The cruise was conducted under the auspices of the Southeast Area Monitoring and Assessment Program (SEAMAP) with participation by the Instituto Nacional de Pesca (INDP) of the Mexican government.

OBJECTIVES

- 1) Collect ichthyoplankton samples to a maximum depth of 200 meters (m) to determine abundance and distribution patterns of eggs and larvae of commercial and recreational fishes.
- 2) Collect temperature, salinity, chlorophyll and dissolved oxygen data at the surface, mid-depth and maximum depths (not to exceed 200 m).
- 3) Conduct sea trials for newly acquired Conductivity-Temperature-Depth (CTD) unit.
- 4) Evaluate satellite communication system for use on subsequent cruises.
- 5) Drop XBTs for Marine Minerals Management Service.
- 6) Conduct comparative ichthyoplankton tows with the RV ONJUKU of INDP.
- 7) Monitor entomological radar for occurrence of insect migrations over the Gulf of Mexico (U. S. Department of Agriculture).
- 8) Collect surface temperature, salinity and chlorophyll data at half hour intervals for comparison with remotely sensed data collected by satellite.

MATERIALS AND METHODS

Plankton samples were taken with bongo and neuston samplers. The bongo sampler consisted of two conical 61 centimeter diameter nets with a mesh size of 333 microns. Tows were made using a double oblique method with towing speed varying between 1.5 and 2.0 knots with a setting rate of 50 m per minute and a retrieval rate of 20 m per minute. Sampling depth varied from within 5 m of the bottom to a maximum of 200 m. A flow meter was used to determine the amount of water filtered. Neuston samples were taken simultaneously during bongo tows with a 947 micron mesh net on a 1 m by 2 m frame. Tows were 10 minutes long with half the frame submerged in the water.

All samples were initially preserved in 10% buffered formalin. After 24 hours, bongo samples were transferred to 3% buffered formalin and neuston samples to 70% ethyl alcohol for final preservation.

Temperature and salinity data were acquired with a CTD unit, when functional, otherwise XBTs were dropped and water casts made for discrete depth sampling for salinity. A bucket thermometer and refractometer were also used to record surface temperatures and salinities.

Chlorophyll and dissolved oxygen readings were taken with a fluorometer and oxygen meter respectively. Chlorophyll filtrations were also taken to calibrate surface fluorometer readings.

RESULTS

One hundred thirty-three stations were completed, 22 of which were XBT drops only (Figure 1). Plankton samples were shipped to the Polish Sorting Center in Szczecin, Poland for sorting and identification.

Twenty-seven temperature and salinity profiles were obtained with the CTD unit which was operational for the first 12 days of the cruise. The unit then began malfunctioning and was offloaded in St. Petersburg, Fla. for repairs.

Environmental data collections were returned to Pascagoula for interpretations. Collections included 115 XBT drops (for Marine Minerals Management Service), 219 salinity samples, 246 fluorometer readings, 154 chlorophyll filtrations and 300 dissolved oxygen measurements. Also, 738 surface temperature, salinity and chlorophyll readings were taken for satellite remote sensing comparisons.

Satellite communications system was tested during the first three weeks of the cruise. The system eventually proved to be operational after repairing the shore based antenna located in Bay St. Louis, Miss. Test results showed that the ship board instruments were working properly.

The entomological radar detected insects only when the ship was down wind and within 200 miles of shore. Southeast winds prevailed during most of the trip and insect targets were detected within 200 miles of southern Florida and western Cuba.

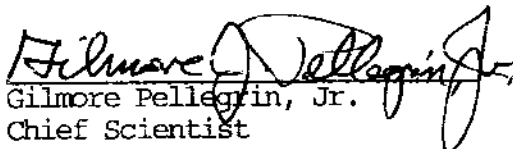
A rendezvous with the RV ONJUKU was made on May 22 at 26° N and 87° W where 10 comparative bongo and neuston tows were made. Catch comparisons will be made subsequent to sorting and identification of samples from the respective vessels.

As time permitted, a bridge watch was maintained for sightings of marine mammals and endangered species. Saddleback dolphins (Delphinus delphis) were sighted at 28°04' N and 88°50' W (school of 15-20), 28°30' N and 84°00' W (school of 10-15) and 26°08' N and 88°32' W (school of 75-100).

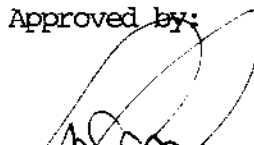
CRUISE PARTICIPANTS

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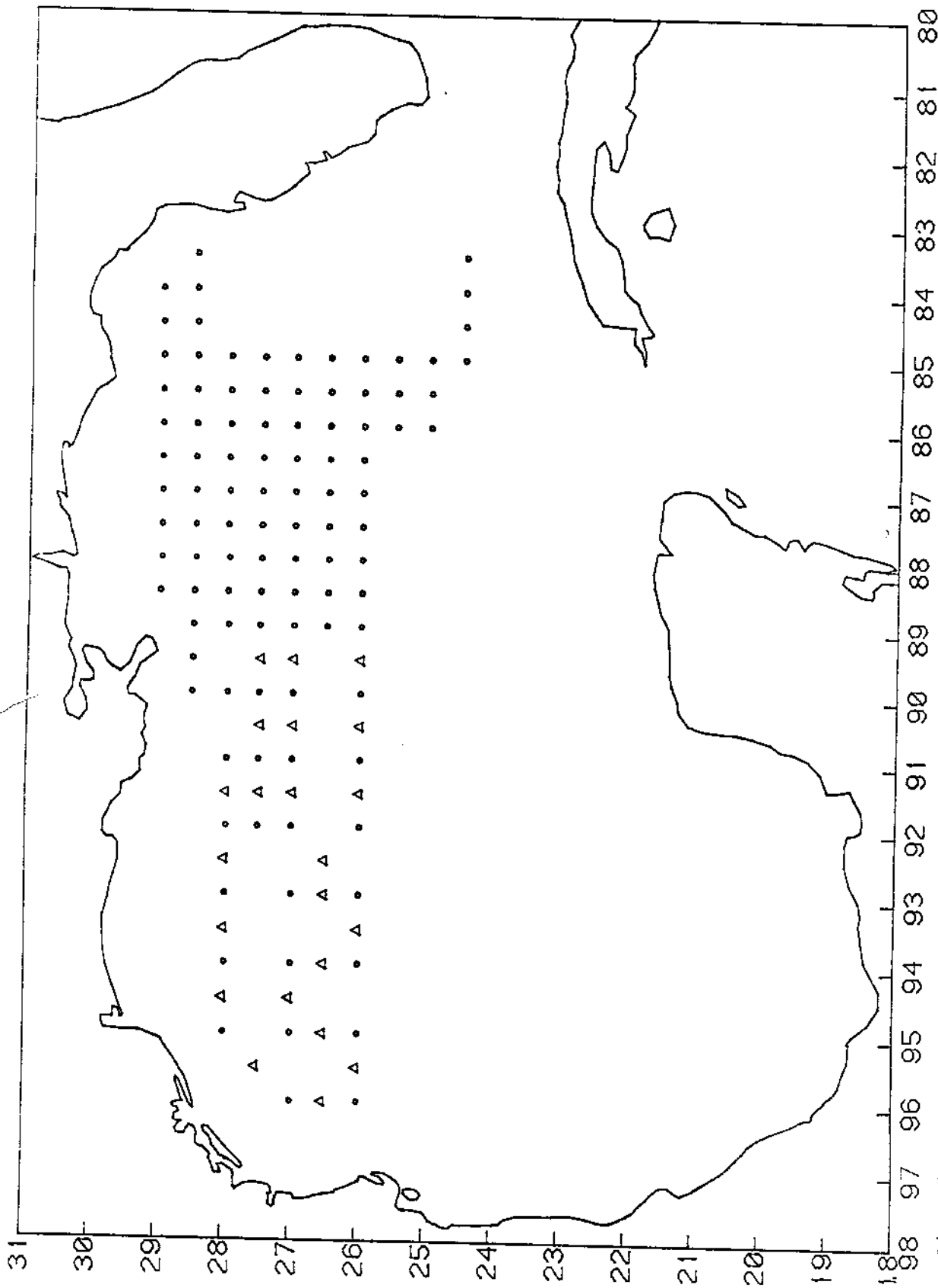


Figure 1.--Station locations occupied during cruise 134. Triangles represent stations where only XBTs were dropped and circles represent stations where bongo and neuston tows were made, and either XBTs dropped or CTD casts made.