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National Marine Fisheries Service
Southeast Fisheries Center
Pascagoula Facility
P O Drawer 1207
Pascagoula, MS 39568-1207

NOAA Ship OREGON II Cruise 161
9/2-26/86

INTRODUCTION

The NOAA Ship OREGON II departed Pascagoula, Miss. on September 2, 1986 to conduct a 25-day Southeast Area Monitoring and Assessment Program (SEAMAP) ichthyoplankton survey and to collect king mackerel eggs and larvae within the Mississippi River plume area. The cruise operated from the Mississippi River delta around the eastern Gulf of Mexico and along the Atlantic coast (Figure 1). Bongo and neuston samples were taken between 5 and 1,400 fathoms. A port call was made in Key West, Florida on September 13 and 14. The cruise terminated in Pascagoula, Miss. on September 26, 1986.

OBJECTIVES

1) Collect ichthyoplankton samples with bongo and neuston nets for studies of abundance and distribution of eggs and larvae of king mackerel and other commercial and recreational species.

2) Collect environmental data profiles and water samples with a CTD unit to a maximum depth of 200 m for: a) salinity, b) water temperature, c) light transmission, and d) O_2 concentrations.

3) Collect chlorophyll samples.

Materials and Methods

Plankton samples were taken with standard SEAMAP bongo and neuston samplers. The bongo sampler consisted of two conical nets with a mesh size of 333 microns on 61-centimeter bongo frames. Single oblique bongo tows were made at speeds varying between 1.5 and 2.0 knots. Bongo nets were set at a payout rate of 50 m per minute and retrieved at 20 m per minute. Sampling varied from a maximum depth of 200 m to within 5 m of the bottom. Volume of filtered water was determined using a torpedo shaped digital flow meter installed within the bongo frame.

Neuston samples were taken with 947-micron mesh nets on 1 X 2 m frames, towed for 10 minutes, with half the frame submerged. Two neuston nets were towed simultaneously at 1.5 knots. An additional single 10-minute neuston tow was made near midnight at 3.0 knots.

Stations were preselected and separated by 30 minutes of latitude and longitude throughout the entire area except along the Mississippi River plume. These stations were set along transect lines perpendicular to the plume and samples were taken inside and outside the interface and through the fresh/sea water interface.

The bongo and one neuston sample per station were initially preserved in 10% buffered formalin and transferred to 95% ethyl alcohol after 24 hours. The second neuston sample was initially preserved in 95% ethyl alcohol and transferred to 95% ethyl alcohol after 24 hours. Those single neuston samples collected near midnight were frozen.

Selected environmental data were collected at each station. A CTD unit was used to collect water, salinity, temperature, and light transmission data. Daily XBT casts were made to check CTD temperature profiles. Water samples for dissolved oxygen determinations were collected from the surface, midwater, and bottom (or maximum sample depth of 200 m).

Daily water samples were retained for laboratory salinity analysis as a check on CTD readings. Secchi disc and Forel-Ule water color readings were taken at daylight stations. Surface sea water samples were filtered for chlorophyll using GF/C filters. Chlorophyll samples were frozen in foil wrapped petri dishes for laboratory analysis.

RESULTS

A total of 128 stations were occupied and sampled (Figure 1). Shipments were made to the following laboratories: NMFS, Miami 92 bongo samples; Gulf Coast Research Laboratory, Ocean Springs, Miss. 92 bongo and 91 neuston samples; NMFS, Panama City 126 preserved neuston and 12 frozen neuston samples.

One hundred eighteen surface sea water samples were filtered for chlorophyll and 118 CTD profiles were taken.

Scientific Personnel

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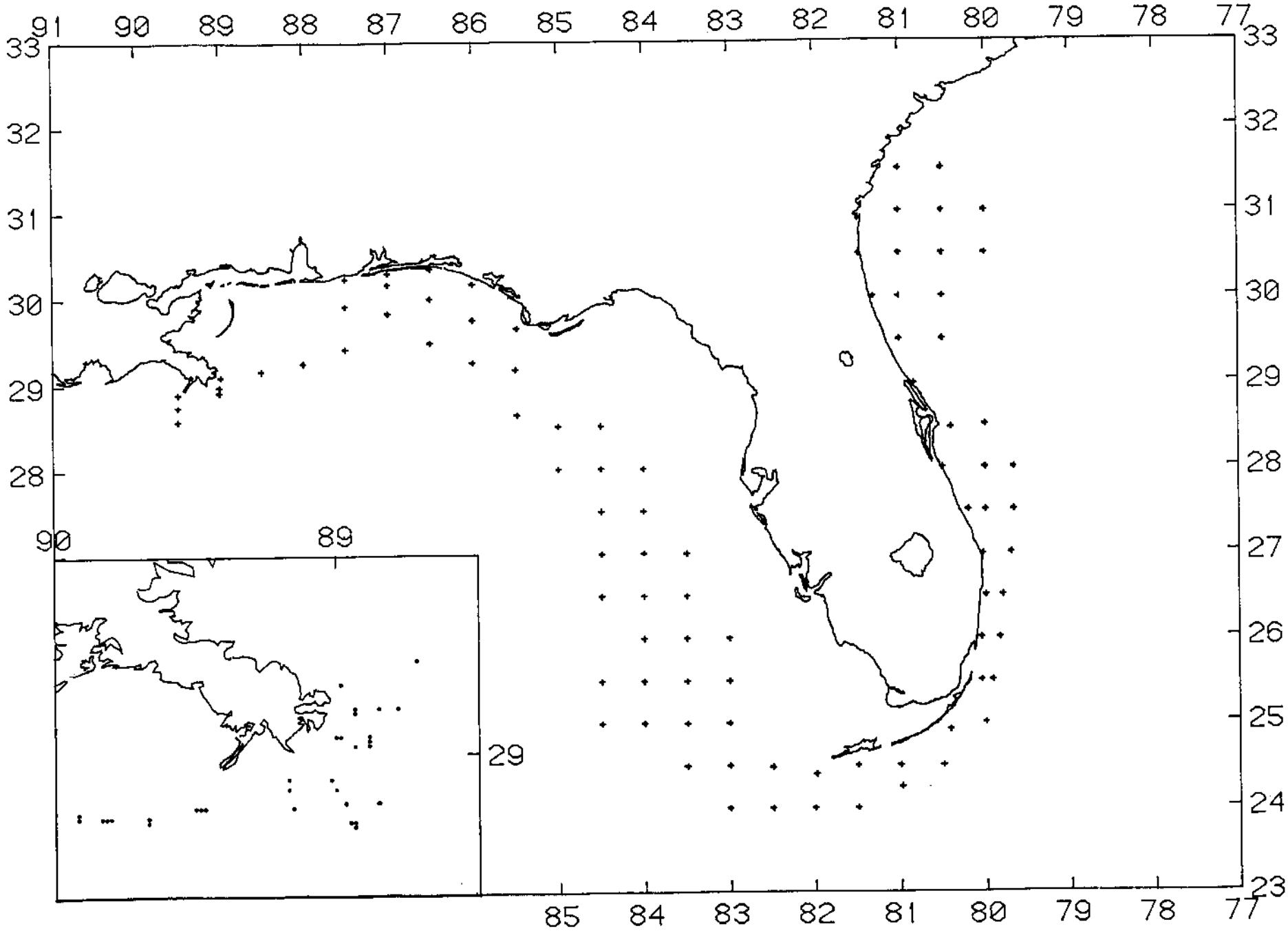

Figure 1. OREGON II Cruise 161 SEAMAP ichthyoplankton stations (+). Mississippi River plume stations (•) shown in inset.