U. S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southeast Fisheries Center
P. O. Drawer 1207
Pascagoula, Miss. 39568-1207

OREGON II Cruise 90-04 (188)
05/29-06/06/90

INTRODUCTION:

The NOAA Ship OREGON II departed Pascagoula, Miss. May 29 to conduct a reeffish survey south of Gulf Shores, Ala. in 30 to 60 fathoms (Figure 1). Trap sets were made throughout the day and night at randomly selected sites. A video camera was placed in the trap during each daylight set to provide information on species composition, behavior, density and habitat. The NOAA Ship OREGON II returned to Pascagoula, Miss. on June 6 terminating the cruise.

OBJECTIVES:

1. Assess reeffish populations and habitat using a fish trap/video recording system.

2. Collect associated environmental data.

METHODOLOGY:

An area of broken hard bottom, south of Gulf Shores, Ala., described in a Mineral Management Service (MMS) project was selected as the study area. A detailed chart of the area including side scan sonar coverage and verification of its interpretation with an underwater video system was available through MMS (Figure 1). The overall study area shown on Figure 1 was subsequently subdivided into "reef sites" based on habitat and substrate as defined in the MMS project report. These "reef sites" were then subdivided into 100 square meter sample sites. Five hundred of these sample sites were randomly selected for sampling. Relief at each preselected site was recorded on the ships SIMRAD color echo sounder. Sites showing no relief were defined as "zero" and the ship proceeded to the next site. When moderate or high relief was indicated on the ships SIMRAD recorder a single funnel (7 feet by 30 inches square) fish trap/video system was deployed.

During daylight hours (7:00am to 6:30pm) a Sony CCDV-9 Handycam video camera in an Amphibico V9 housing was mounted inside the fish trap to record habitat and fish activity. At each trap site a photograph of the SIMRAD color echo sounder recording of bottom and fish schools was taken to compare with the video record of habitat and fish schools. Traps baited with squid were soaked for one hour.

Associated environmental data including salinity, temperature, water clarity (secchi disc), chlorophyll, and dissolved oxygen was collected at 8:00am daily.

RESULTS:

Three hundred and forty eight of the 500 selected sites were surveyed. Sixty one (18%) showed sufficient relief to warrant trapping with 287 classified as no relief or zero areas. Preliminary comparisons between trap catch data and the video records indicated that trap catch data did not accurately reflect either species composition or abundance. A good relationship was noted between the SIMRAD color echo sounder and video recordings in terms of habitat, however, there was no relationship in terms of fish school abundance. Differences between the actual location of the trap set and the SIMRAD color echo sounding, or the cameras viewing angle, may be the cause of this lack of a relationship in terms of fish school abundance.

Species identification for both large and small fish from video records were generally good. Greatest accuracy was noted for those fish nearest to the video recorder, and for the larger species.

Preliminary analysis of catch data indicated night sets produced more zero catches than day sets. Red snapper (Lutjanus campechanus) and scamp (Mycteroperca phenax) were caught about equally during both day and night sets. Whereas both dominant species (vermillion snapper, Rhomboplites aurorubens; and red porgy, Pagrus pagrus) were caught most frequently during daylight hours.

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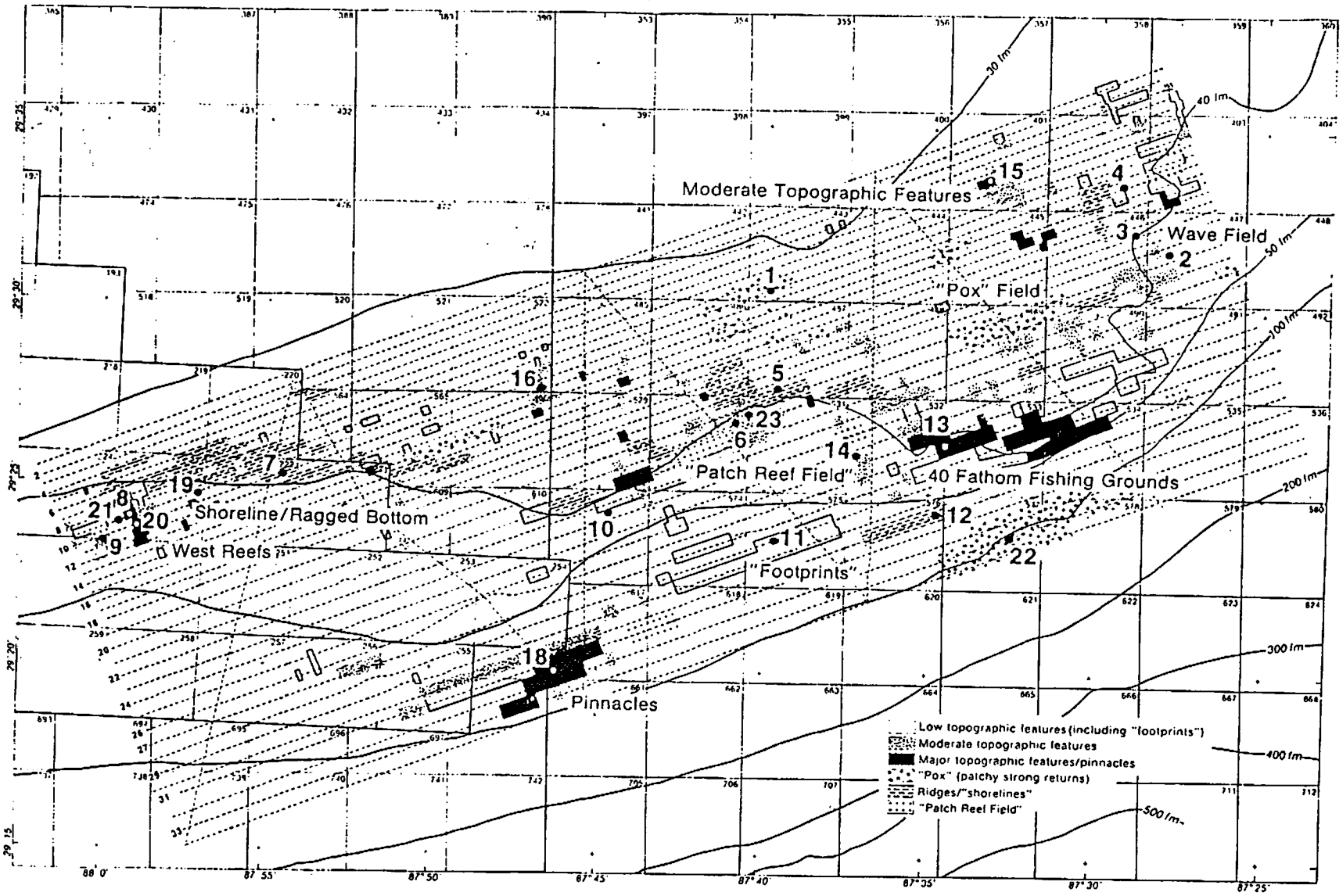

Figure 1. Map of hard-bottom study region, showing preliminary feature interpretation and sample site locations.