

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 91-02 (193)
03/17-04/12/90

INTRODUCTION:

The NOAA Ship OREGON II departed Pascagoula, Miss. March 17, 1991 to conduct a reefish survey from south of Sabine Lake, La. to Tortugas Bank, Fla. in five to 60 fathoms (Figure 1). During daylight hours, one fish trap with a video camera mounted inside, was deployed at 117 randomly selected sites. Video data collected during the cruise will be analyzed at the NMFS Pascagoula Laboratory for species composition and abundance. The NOAA Ship OREGON II returned to Pascagoula March 28 to change scientific crews and departed again March 29. The vessel returned to Pascagoula April 12, terminating the cruise.

OBJECTIVES:

1. Assess relative abundances of reefish populations and habitat using a fish trap/video recording system.
2. Collect associated environmental data.

METHODOLOGY:

Natural reefish habitat from Brownsville, Tex. to the southern tip of Florida at 81°00 W. longitude and 24°39' N. latitude between five and 60 fathoms was inscribed on navigation charts. The area was then divided into east and west Gulf at 89°20'00 W. longitude. Both areas were again subdivided into 10 x 10 nautical mile blocks, and reef habitat within each block was divided into 100 meter square sample sites. Blocks to be surveyed were randomly selected with probabilities proportional to size (size being the number of sample sites in a block).

Within each selected block 100 sample sites were randomly selected and their positions placed into the ships navigation plotter. Each selected block was occupied for one 24 hr period, where night hours were devoted to echo sounder surveys of selected sample sites and daytime hours to trap/video sampling. Echo sounder surveys required the ship to pass over the center of as many sample sites as was logistically possible. Sample sites

possessing bottom type characteristics of reef fish habitat were listed, and eight sites were randomly selected for sampling. If no reef habitat was located, the vessel proceeded to the next randomly selected block and began an echo survey for reef habitat.

An over-the-side camera was deployed on three occasions to evaluate bottom type; however, picture quality was so poor the system could not be used. Trap/video sampling normally began one hour after sun up and ended one hour before sun down, though some adjustments in set and recovery times occurred based on water depth and clarity and weather conditions. A Sony CCDV-9 Handycam video camera in an Amphibico V9 housing was mounted inside a single funnel fish trap (7 feet long by 30 inches square) to record habitat and fish activity. The trap/video system was baited with squid and soaked for one hour.

A small experimental platform with two video cameras mounted back to back (i.e. pointing in opposite directions) was lowered to the bottom and soaked for one hour. The potential for losing two cameras and difficulties in handling the platform limited the use of this system to one effort.

Associated environmental data, including salinity, temperature, chlorophyll, and dissolved oxygen, were collected at 8:00am and 12:00 noon daily.

RESULTS

Twenty four blocks were selected for survey, 10 in the west and 14 in the east Gulf. One block in the west and three in the east did not have sufficient relief to warrant deployment of the trap/video system. Underwater visibility in the area south of Mobile Bay was poor, preventing survey of two blocks. The low profiles of many reefs in the eastern Gulf were difficult to identify; however, a good relationship was noted between the SIMRAD color echo sounder and video recordings of bottom habitat.

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

Preliminary analysis of catch data indicated catches in the eastern Gulf were greater than those for the western Gulf in both total numbers and species caught (Table 1).

Species composition of trap catches in the western Gulf were dominated by cubbyu (Equetus umbrosus), while in the eastern Gulf white grunt (Haemulon plumieri) dominated. Red porgy (Pagrus pagrus) were taken in both the east and west Gulf, however, catches of this species were greatest in the east with 34 specimens. Red snapper (Lutjanus campechanus) and scamp (Mycteroperca phenax) were

taken in equal numbers and only in the western Gulf. Snappers and groupers caught in the eastern Gulf included: 13 red grouper (Epinephelus morio); 9 lane snapper (Lutjanus synagris); and 19 vermilion snapper (Rhomboplites aurorubens) (Table 1).

SCIENTIFIC PERSONNEL

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COOPERATORS

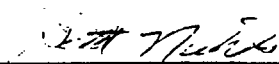
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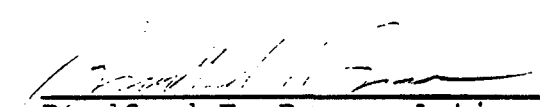
Approved By:



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Table 1. Species composition of trap catches for east and west Gulf of Mexico, including numbers and weights in pounds.

<u>Western Gulf of Mexico</u>		No.	Wt.
<u>Caulolatilus intermedius</u>	(anchor tilefish)	3	2.7
<u>Equetus umbrosus</u>	(cubbyu)	5	0.5
<u>Gymnothorax moringa</u>	(spotted moray)	1	2.3
<u>Gymnothorax ocellatus</u> (complex)	(blackedge moray)	2	0.9
<u>Hemipteronotus novacula</u>	(pearly razorfish)	4	1.1
<u>Lutjanus campechanus</u>	(red snapper)	3	6.8
<u>Mycteroperca phenax</u>	(scamp)	3	9.3
<u>Pagrus pagrus</u>	(red porgy)	2	1.8
<u>Serranus phoebe</u>	(tattler)	1	0.2
<u>Eastern Gulf of Mexico</u>			
<u>Balistes capriscus</u>	(gray triggerfish)	1	0.2
<u>Calamus nodosus</u>	(knobbed porgy)	3	1.3
<u>Calamus proridens</u>	(littlehead porgy)	10	2.0
<u>Caranx crysos</u>	(blue runner)	2	0.4
<u>Caranx hippos</u>	(crevalle jack)	1	0.8
<u>Centropristis ocyurus</u>	(bank sea bass)	9	1.8
<u>Centropristis philadelphica</u>	(rock sea bass)	3	0.3
<u>Chaetodon sedentarius</u>	(reef, butterflyfish)	1	0.1
<u>Diplectrum formosum</u>	(sand perch)	41	6.9
<u>Epinephelus morio</u>	(red grouper)	13	9.2
<u>Haemulon aurolineatum</u>	(tomatate)	49	5.8
<u>Haemulon parrai</u>	(sailors choice)	21	3.4
<u>Haemulon plumieri</u>	(white grunt)	56	11.9
<u>Holacanthus bermudensis</u>	(blue angelfish)	3	2.7
<u>Lactophrys quadricornis</u>	(scrawled cowfish)	1	0.3
<u>Lagodon rhomboides</u>	(pinfish)	1	0.1
<u>Lutjanus synagris</u>	(lane snapper)	9	1.7
<u>Malacanthus plumieri</u>	(sand filefish)	1	0.6
<u>Monacanthus ciliatus</u>	(fringed filefish)	3	0.6
<u>Monacanthus hispidus</u>	(planehead filefish)	6	0.3
<u>Monacanthus setifer</u>	(pygmy filefish)	3	0.3
<u>Nicholsina usta</u>	(emerald parrotfish)	1	0.2
<u>Ocyurus chrysurus</u>	(yellowtail snapper)	2	0.2
<u>Pagrus pagrus</u>	(red porgy)	34	10.8
<u>Rhomboplites aurorubens</u>	(vermilion snapper)	19	1.8
<u>Crusacea</u>			
Galatheidae	(crab)	1	0.1
<u>Other</u>			
Scleractinia	(coral)	2	0.4

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