

# BOTTOM LONGLINE EXPLORATIONS

Final Cruise Report from the Vessel,  
GUIDING LIGHT

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MAY 1984

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Prepared for  
**Coastal Ecology and Fisheries Institute**  
Center for Wetland Resources  
Louisiana State University  
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## INTRODUCTION

Since at least the 1960s, investigators have been aware of potentially commercial stocks of snapper, grouper, and tilefish in 50 to 200 fathoms in the northwestern Gulf of Mexico. While a shallow-water (less than 50 fathoms) snapper-grouper fishery has been in existence off of the Florida coast since before the Civil War, deeper waters off of the Louisiana coast have not been fished until the advent of modern longlining gear.

Exploratory longline efforts by the U.S. Bureau of Commercial Fisheries, (1967 and 1968) and the Texas A. & M. University Marine Advisory Service (1978) substantiated the potential. At present, a handful of Florida and Texas vessels are longlining seasonally for snapper, grouper, and tilefish off the Louisiana coast. According to Louisiana Cooperative Extension Service-Sea Grant marine advisory agents and National Marine Fisheries Service port samplers, no Louisiana vessels are currently exploiting this fishery.

With the steadily declining profit margins in Louisiana's shrimp fishery, this fishery presents the possibility of a seasonal alternative for some of the state's offshore shrimp vessels. The purpose of this cruise was to explore the extent of the snapper-grouper-tilefish stocks off the Louisiana coast and the possibility of profitably fishing them.

## VESSEL DESCRIPTION

The vessel used in these investigations is a 97-foot steel-hulled shrimp trawler, the Guiding Light, out of the port of Lafitte, Louisiana. The vessel is powered by two 12-cylinder GM diesel engines with a 6 to 1 reduction, and carries a 4-cylinder diesel generator. The propellers are without nozzels and the vessel draws 12 feet of water, laden.

The vessel was chosen because it typifies the larger (and therefore the most expensive to operate) end of the size range of offshore shrimp vessels. While a vessel this large is certainly not necessary for longline operations, profitable operation of this vessel would obviously demonstrate the economic potential of the fishery.

## GEAR

The bottom longline used in this effort consisted of half-mile segments of 1/4-inch surplus oilfield wireline cable (Figure 1). The cable was weighted at each end with one or two 10-lb. window sash weights attached to the mainline by a monofilament snood and an A/K snap. Additional 6-lb. sash weights were added every 50 to 100 hooks. Frequently, two half-mile lengths were shackled together and fished as one mile-long line. A polypropylene buoy



line was shackled to each end of the longline. A buoy assembly was in turn shackled to the terminal end of the buoy line. The buoy assembly consists of a main pole buoy with a flag and/or radar reflector, a smaller lead buoy on a 20-foot rope attached to the pole, buoy, and a rope from the pole buoy for attachment to the buoy line.

Initially, buoy lines of 1/4-inch and 5/16-inch were used but were not strong enough, and 3/8-inch and 1/2-inch lines were substituted. Buoy lines were broken into 50-fathom lengths to allow for adjustment to fishing in varying depths. Generally, buoy lines were 20 to 60 fathoms longer than the water depth recorded on the vessel's fathometer.

Gangions were made up of 200-pound test monofilament, doubled. An A/K snap (Figure 2) was attached to one end using a clinch knot and a number 4, 5, or 6 circle hook was attached to the other end with a double-loop. Each gangion was approximately 24 to 30 inches long. Initial efforts showed that number 4 and 5 hooks (especially 5) were most effective on grouper. Most tilefish were caught on number 5 and 6 hooks, with number 6 hooks catching many small tilefish. (Note: Tilefish are very effective bait thieves; one individual recovered had seven baits in his stomach.)

Most of the bait used (especially mackerel) was moderately to heavily salted immediately after it was cut up. This effectively toughened the bait, making baiting easier and prolonging the life of the bait on the hook.

The hooks were rebaited as the longline was retrieved and were stored in shrimp baskets. The gangions were draped over the edge of the basket with the hook end on the inside. Each basket held 100 baited gangions.

The longline winch was mounted on the cabin apron in a quartering position facing the starboard side near the stern. The reel was powered with an electric motor and v-belts. The drum of the reel was divided in half by a vertical steel plate. This allowed for the storage of polypropylene rope (for kali poles and extra buoy line) on one side and cable on the other. The longline was paid out and picked up through a block hanging from a steel davit mounted on the starboard bulwark near the stern (Figure 6).

Another form of gear tested in this fishing effort was the kali pole longline (Figures 4 and 5). The poles were built of 1/2-inch, schedule 80 PVC pipe. Each pole had five to six hooks, a 1-pound weight on the bottom end, and a 4-inch Rosendahl float on the upper end. The poles were also attached to the main line using A/K snaps (Figure 4). The main line consisted of 3/8-inch polypropylene line.

Two sash weights with 8-foot snoods were used on each end of the line for anchoring. The poles, when fishing, stood vertically on the bottom and the main lines never came nearer to the bottom

than 8 feet. The kali poles were stored in a bundle of 2-inch PVC pipe when not in use (Figure 3).

Essentially auxiliary equipment consisted of a long gaff hook, several drag hooks, plenty of knives, a good whetstone, a grappling hook for retrieving the buoy, a supply of gloves, and cable-splicing equipment.

#### VESSEL MODIFICATIONS

The longline winch was welded to the cabin apron and a heavy pipe-frame davit with a pulley was welded to the starboard bulkhead (Figure 6). Stern vessel controls, while not essential, are highly desirable and were installed for this fishing effort.

The vessel was equipped with a Loran unit (essential) and a plotter (very helpful). A chromoscope was installed for accurate bottom interpretations.

#### FISHING PROCEDURES

The line was set while the vessel was moving forward at 2-4 knots, while the winch was free-spooling. One crewman controlled the speed of the drum with a foot brake. One crewman snapped the prebaited gangions on the main line, and another separated the gangions and handed them to the snapper. The gangions were spaced from 10 to 25 feet apart, depending on the concentration of fish. Kali poles were spaced from 15 to 50 feet apart. Payout of a mile of gear, plus buoy line, was done in 20-35 minutes.

Retrieving the gear was a somewhat slower procedure. One crewman unsnapped the gangions. Gangions with fish on them were dropped on the deck, off to one side. The other gangions were placed on the baiting table where a second crewman was baiting the hooks and stowing them in baskets. The third crewman gutted and washed the fish, removed the hooks, and assisted the second in baiting the gangions. The crewman who unsnapped the gangions controlled the winch speed with a remote control switch mounted on the davit.

Soak time varied from 30 minutes to 12 hours on overnight sets. Overnight sets were not productive (Table 2). At night the vessel was allowed to drift free, as all of the fishing was in water too deep for anchoring. In addition to monitoring the radar for other vessels (these areas are in shipping lanes), the crewman on watch monitored the chromoscope for likely bottom types for the next day's fishing.

Bottom longlining is very labor-intensive, with the crewman being constantly busy setting and recovering lines, baiting hooks, unhooking, gutting, and icing fish. Very little time exists for cooking meals, and fast foods are necessary.

## RESULTS

The purpose of these investigations was threefold:

- (1) To identify the extent of the resource available for bottom longlining off Louisiana.
- (2) To test the effectiveness of longlines as a harvesting tool.
- (3) To identify the areas, depths, and bottom types that are most productive for bottom longlining.

Determining the economic feasibility of the fishery was not one of the priorities of this investigation.

This effort consisted of 22 fishing days broken into three segments: I. March 1-3; II. March 9-18; III. April 2-10. Segments I and II were devoted entirely to exploratory fishing with little effort being made to exploit concentrations of fish that were found.

While much of the third segment of this investigation was also planned to be exploratory, a greater effort was planned to determine how much a vessel could catch when working in concentrations of fish. Unfortunately, three factors intervened to make this impossible. First, very poor weather conditions existed on five of the nine days of the cruise. Second, major equipment failures occurred on seven days. Third, the snappers and groupers appeared to be entering the spawning phase of their reproductive cycle. Very few male groupers were caught and virtually all of the female groupers contained well-developed egg masses. Personal conversations with experienced snapper-grouper fishermen from other states have revealed that these fish become extremely difficult to catch while spawning.

Still 677 saleable fish weighing 6,386 pounds were harvested (Table 1). In addition, approximately 210 pounds of gulf hake, Urophycis cirrata, and southern hake, U. floridana, were caught. Hake were not sold or counted as saleable fish in these investigations although there is a market for them (which varies widely between 35¢ and \$1.10 per pound).

The two primary target species, the golden tilefish, Lophaltilus chamaeleonticeps, and the yellowedge grouper, Epinephalus flavolimbatus, made up the bulk of the catch. Both by numbers of fish and poundage, the best depth for the production of yellowedge grouper in segments I and II of the cruise appears to be from 110 to 130 fathoms, with best production at 123 fathoms. A few yellowedge groupers were caught on sets as shallow as 43 fathoms and as deep as 201 fathoms.

Tilefish production appears to be centered somewhat deeper. The most productive depth for numbers of tilefish in segments I

and II of the cruise was 144 fathoms and for weight, 134 fathoms. Production of all species of salable food fishes dropped off sharply deeper than 175 fathoms. Results from the third segment of the cruise were not used in this particular observation since effort was directed to particular depths, and waters over 130 fathoms were scarcely fished.

One interesting and important observation concerns the average size of the fish. When the Bureau of Commercial Fisheries made its early exploratory bottom longline cruises for new fishery resources in the Gulf of Mexico in 1967-68, average weights of 5.9 pounds for golden tilefish and 10.3 pounds for yellowedge grouper were recorded. This is very similar to the average weights of 6.6 pounds for tilefish and 9.7 pounds for yellowedge grouper recorded in these investigations. This would seem to indicate that the stocks of these two fishes off the Louisiana coast have not been heavily exploited at this time.

Comparisons of the catch rates of kali pole longlines and conventional longlines were also made (Table 2). Conventional longlines and kali pole longlines were fished on the same day on 12 of the 22 fishing days of this study. On 11 of the 12 days, conventional longlines outfished (in catch per hook per hour) kali pole longlines, often by a large margin. Since most fishing on a given day was conducted in one area, the comparisons should be valid. Kali poles were exclusively fished on five of the remaining 10 fishing days and longlines were the only gear used on the other five days. On these days conventional longlines placed 1, 2, 4, 5, and 7 in catch per hook/hour.

The catch rate for the entire study was .144 lbs. per hook/hour, and was broken down as follows:

|                     |                          |
|---------------------|--------------------------|
| Segment I.....      | 0.098 lbs. per hook/hour |
| Longlines only..... | 0.098 lbs. per hook/hour |
| Segment II.....     | 0.155 lbs. per hook/hour |
| Longlones.....      | 0.189 lbs. per hook/hour |
| Kali poles.....     | 0.098 lbs. per hook/hour |
| Segment III.....    | 0.142 lbs. per hook/hour |
| Longlines.....      | 0.197 lbs. per hook/hour |
| Kali poles.....     | 0.104 lbs. per hook/hour |
| Entire Cruise.....  | 0.144 lbs. per hook/hour |
| Longlines.....      | 0.173 lbs. per hook/hour |
| Kali poles.....     | 0.100 lbs. per hook/hour |

Table 3 illustrates the relationship of catch to length of soak time. Because the relatively limited number of sets made (122), a strong relationship between length of soak and catch per hook is difficult to make. There does appear to be an increase in catch per hook as the soak time is increased through the 121- to

150-minute soak time period. Thereafter, the number of sets made in each soak time period is so small that conclusions are impossible.

Fish caught were sold after each segment of the cruise. Prices were relatively high (Table 4), but consistent for the time of year. Red snapper has a high demand and brought the highest price.

Groupers, in general, had the second highest price, with scamp and yellowmouth (which are sold as scamp) bringing premium prices. Payment on tilefish caught in segment II of the cruise was delayed for several days because of marketing difficulties. The demand and prices for tilefish are heavily dependent on the Atlantic Coast production of tilefish and fluctuate accordingly. The average price paid for the entire catch was \$1.34 per pound.

Prices quoted in Table 4 were for gutted fish. All fish weights listed in this report are weights "in the round" or ungutted. Weight loss through gutting is 5% to 6% for nonspawning fish of the species captured in this effort.

#### DISCUSSION

According to the information gathered by this effort, a harvestable population of reef and tilefishes does appear to exist off the Louisiana coast. Considering the current economic plight of the shrimping industry and the need for alternative fisheries to fully utilize the harvesting capacity of the fleet, further investigations may be in order. Such investigations should accomplish the following goals:

- (a) Solidification and expansion of the data base defining the biological parameters of the stock.
- (b) Further refinement of harvesting techniques and equipment.
- (c) Determination of economic restraints and incentives for seasonal conversion to bottom longlining.

The prime species identified for commercial exploitation by bottom longlining in this study was the yellowedge grouper. It seems to exist in harvestable numbers on fishable bottoms and commands a stable market price. Tilefish certainly occur in good numbers offshore, but are subject to wide vagaries in the marketplace. Several species of snapper, especially the red snapper, are also subject to capture by bottom longlines. Most snappers, however, are found shallower than 100 fathoms and on very rough bottoms. Longline gear loss on these bottoms can be excessive.

Perhaps the use of kali pole longlines (which are designed to fish rough bottoms) can overcome this obstacle. While kali pole longlines proved to catch only 58% as much fish by weight as

standard longlines in this study, the high prices paid for snapper may overcome this deficiency.

Bottoms deeper than 100 fathoms (yellowedge grouper and tilefish bottoms) are generally not as rocky and coral-encrusted. On these bottoms, the more efficient conventional longlines are the tool of choice.

Costs of rigging up for bottom longlining (Appendix I) are relatively modest when compared with conversion costs for other fisheries. Many of the items listed can be obtained second-hand or are already in a shrimper's equipment inventory. Outfitting with cable longlines instead of rope costs more initially (\$2,344) but reduces equipment loss a great deal and allows the fisherman to fish on more difficult bottoms.

A variable speed winch is a very valuable tool, whether hydraulic or electric. The faster speeds are useful in picking up buoy lines, which can be quite time-consuming. Wise time usage is of critical importance in fishing at least 3,000 hook/hours per day. The minimum 3,000 hook/hour figure is necessary to produce a substantial catch (Table 2) and can be achieved by fishing two 250-hook (5,000 ft.) lines for 12 hours per day. While one line is being retrieved the other one is soaking. Then it is reset, and the other one is retrieved.

Results show that unless an area being fished is almost barren of fish, it is preferable to concentrate on soaking as many hooks for as many hours as possible in the area, than it is to run from place to place hunting a better spot during fishing hours. The vessel may then be moved to a new area at night, before the next day's fishing begins.

FIGURE 1

BOTTOM LONGLINE

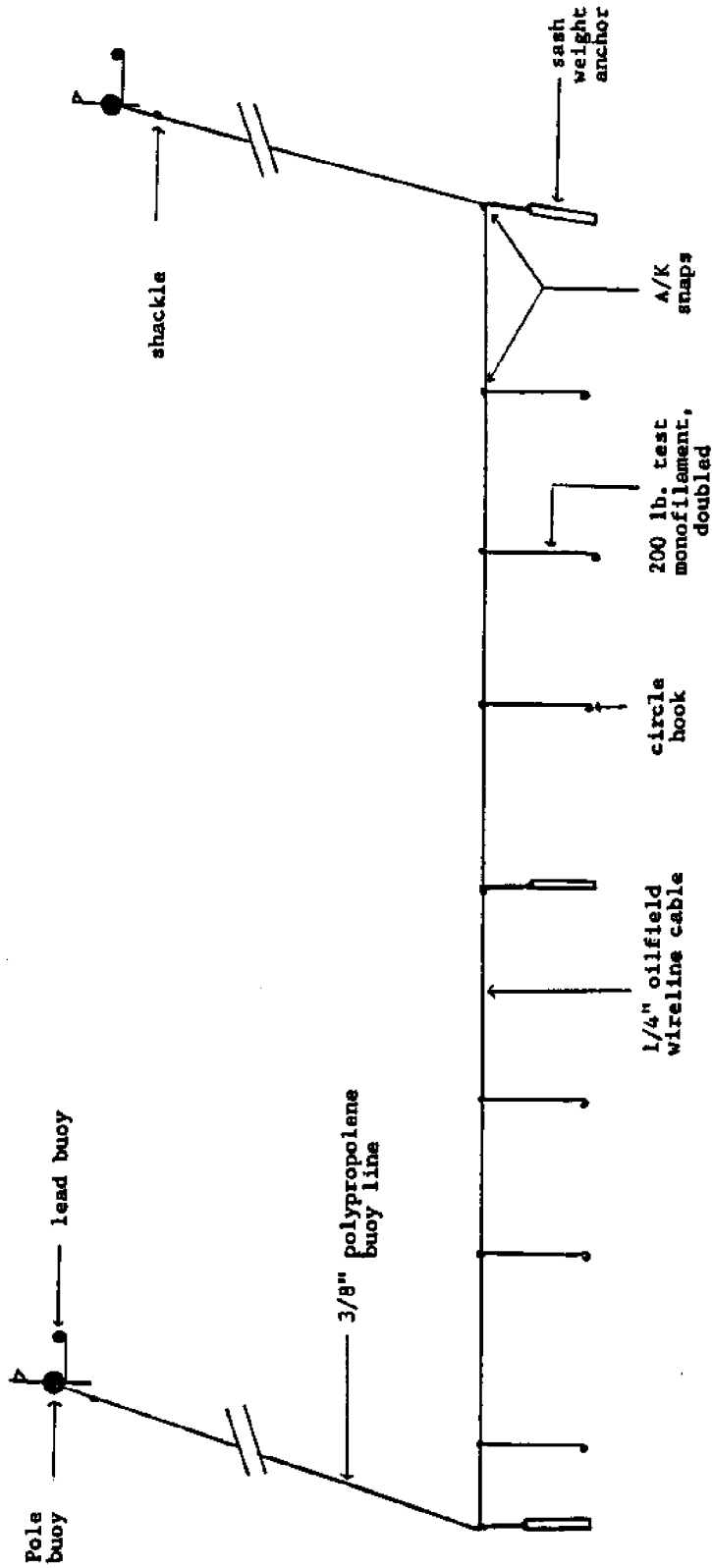
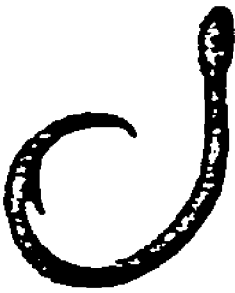
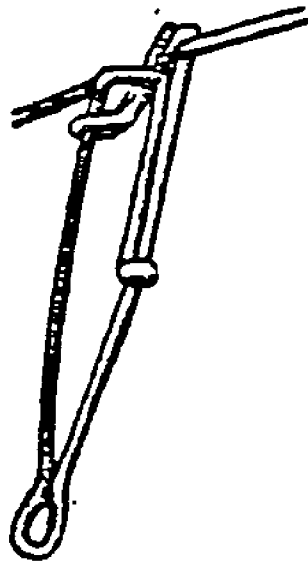


FIGURE 2



Circle Hook



A/K Snap



FIGURE 3  
KALI POLE STORAGE BUNDLE

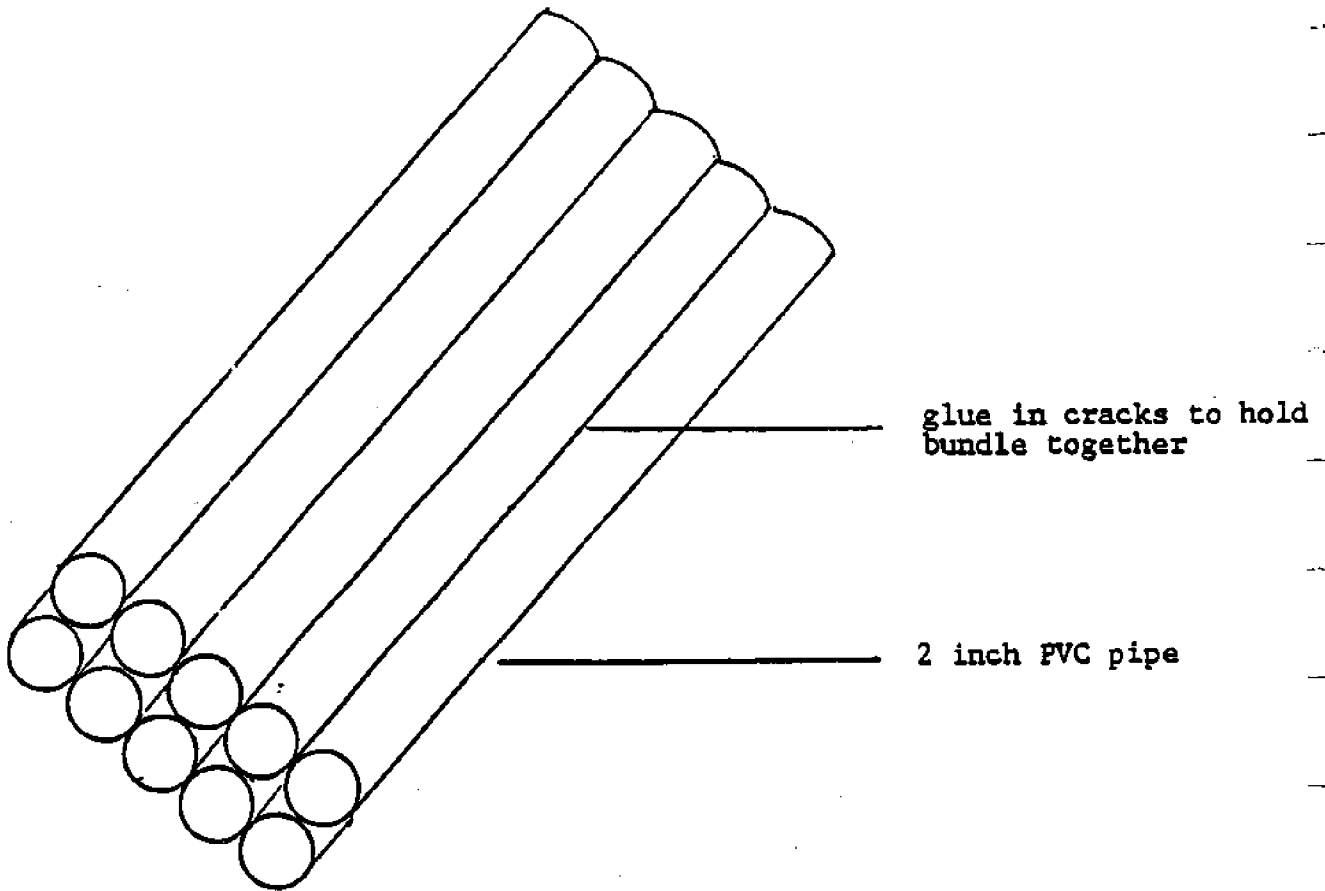


FIGURE 4

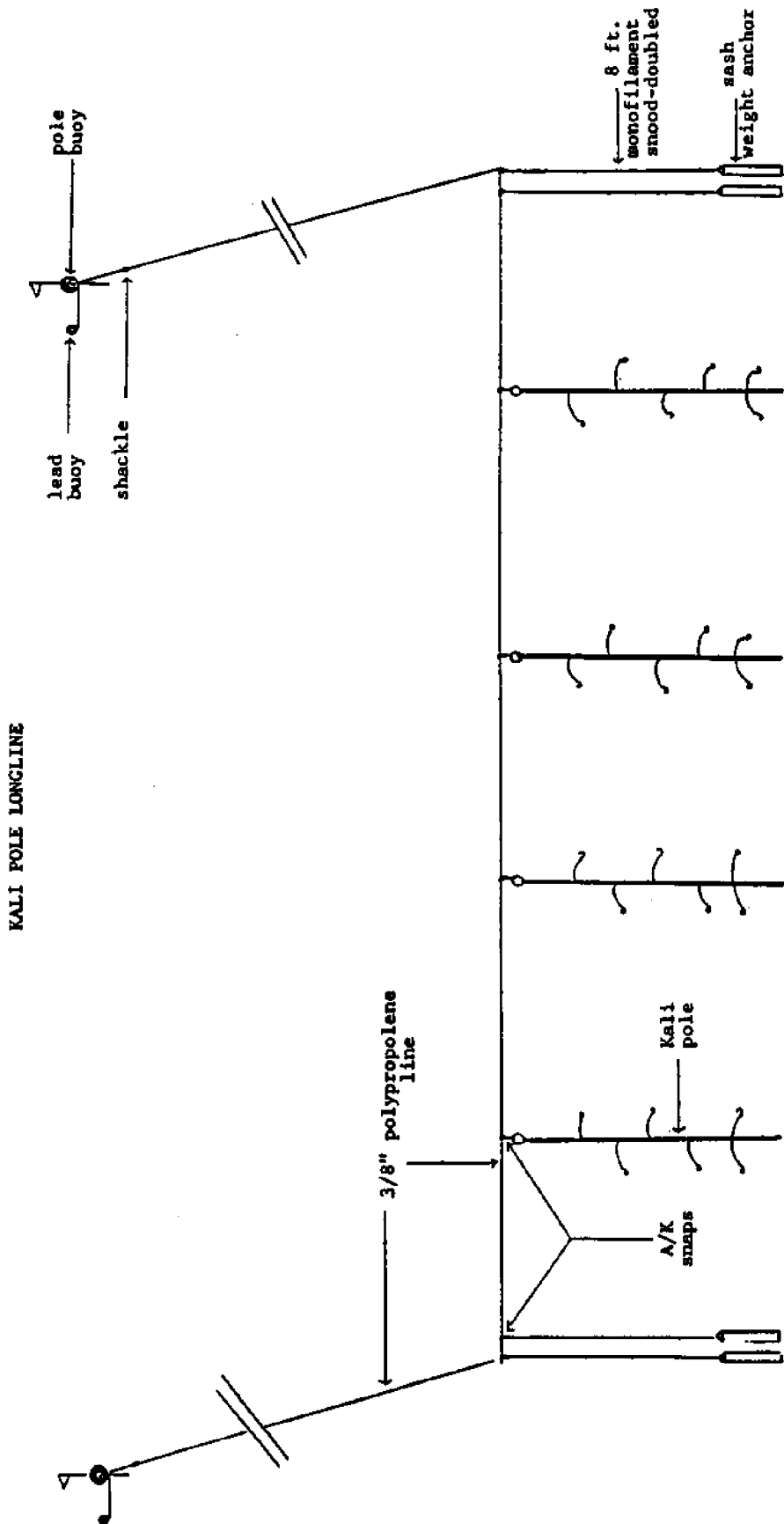


FIGURE 5

KALI POLE

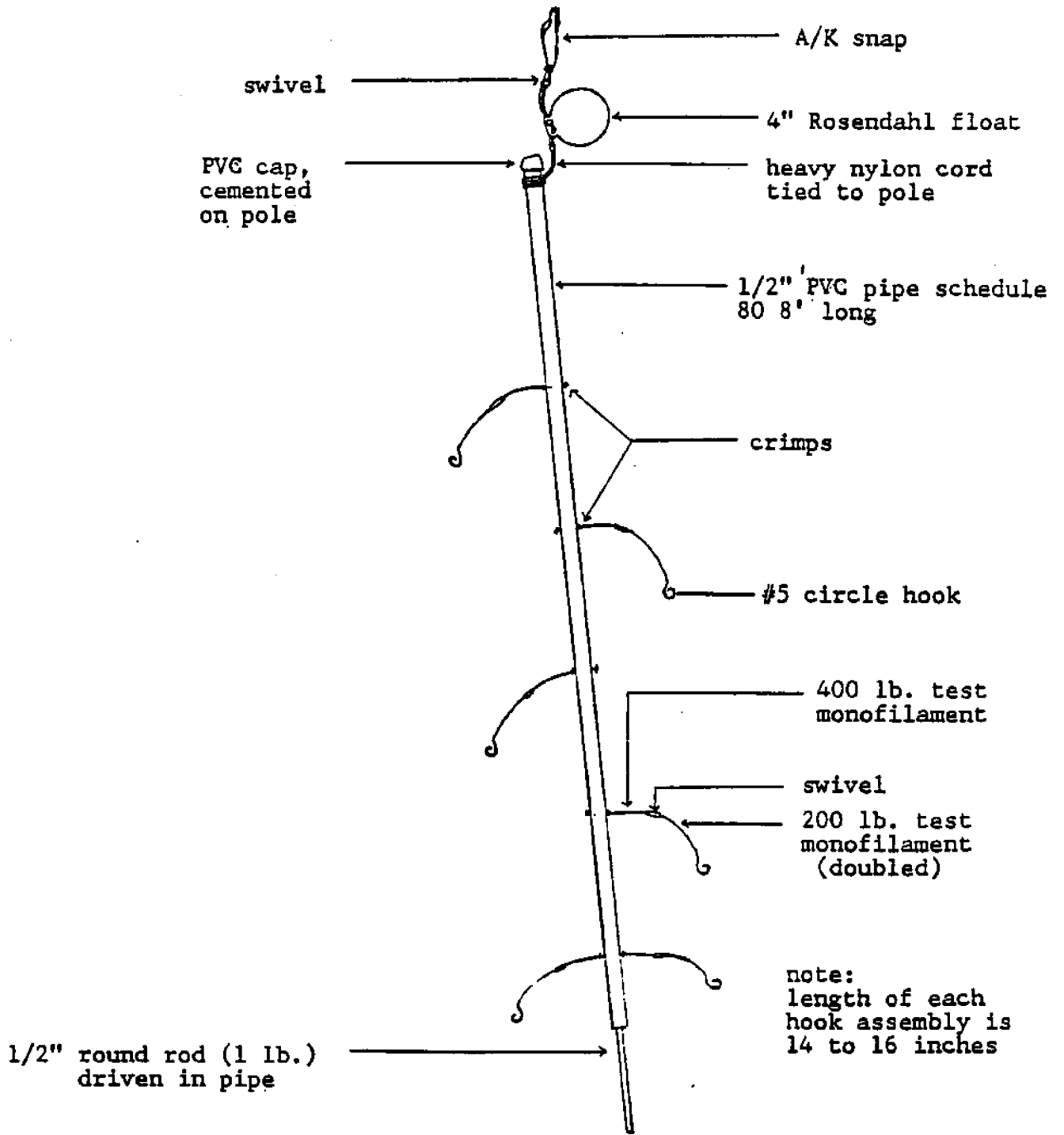


FIGURE 6

DAVIT

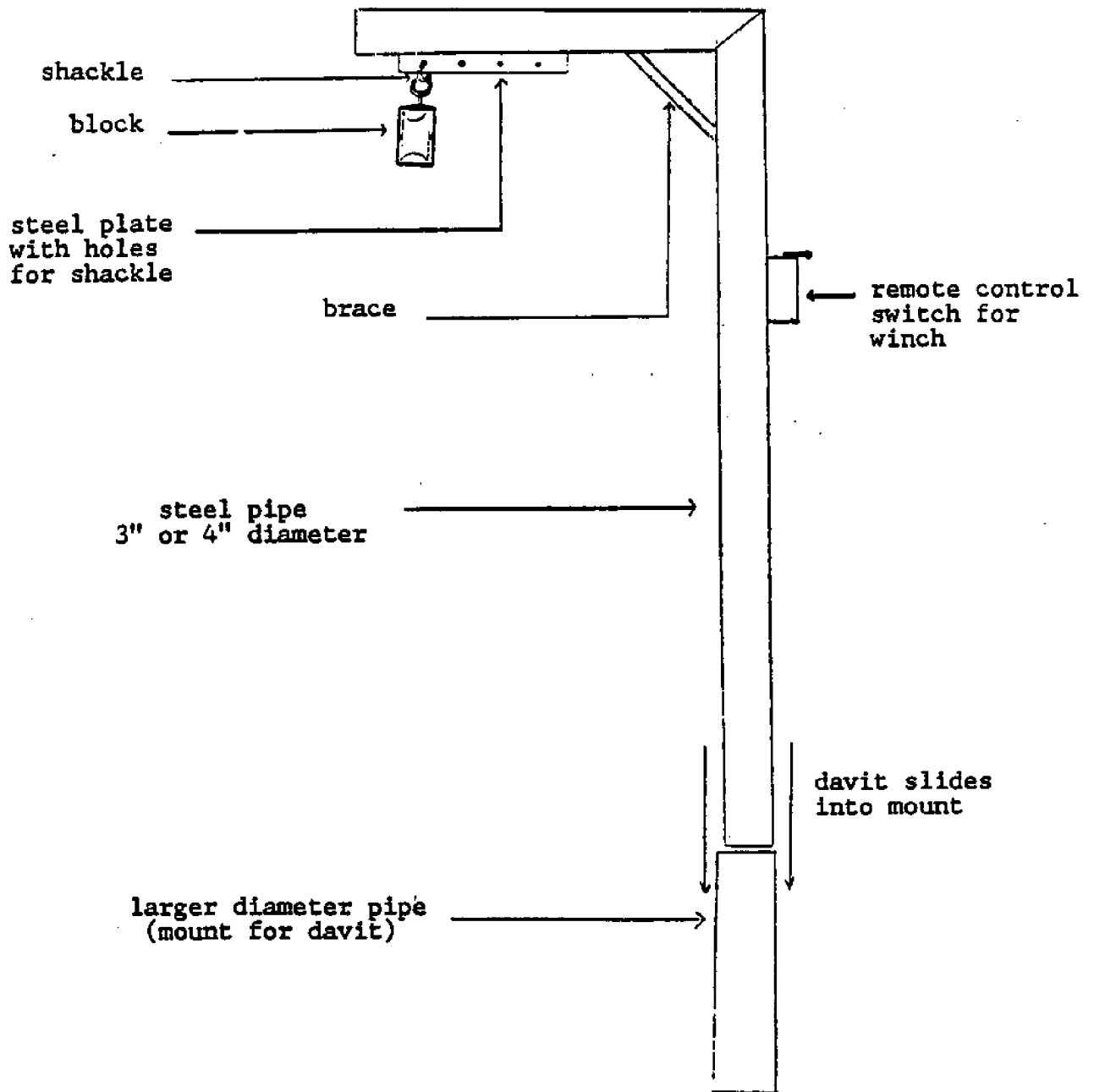


Table 1. Catch, weights, size range and depths of salable fish catch.

| Species  | Number caught | Total weight (lbs.) | Average weight (lbs.) | Size range (lbs.) | Depth range where caught (fathoms) |
|--|---------------|---------------------|-----------------------|-------------------|------------------------------------|
| <u>Yellowedge Grouper</u><br><u>Epinephalus flavolimbatus</u>    | 395           | 3816                | 9.7                   | 1.4-30.0          | 42-201                             |
| <u>Warsaw Grouper</u><br><u>Epinephalus nigrilus</u>             | 12            | 559                 | 46.6                  | 21.4-154.0*       | 43-137                             |
| <u>Snowy Grouper</u><br><u>Epinephalus niveatus</u>              | 11            | 135                 | 12.3                  | 3.5-25.5          | 41-175                             |
| <u>Yellowmouth Grouper</u><br><u>Mycteroperca interstitialis</u> | 5             | 33                  | 6.6                   | 3.7-8.7           | 47-72                              |
| <u>Scamp</u><br><u>Mycteroperca phenax</u>                       | 1             | 25                  | 25.0                  | 24.7              | 56-62                              |
| <u>Golden Tilefish</u><br><u>Lopholatilus chamaeleonticeps</u>   | 207           | 1359                | 6.6                   | 1.0-24.2          | 79-218                             |
| <u>Red Snapper</u><br><u>Lutjanus campechanus</u>                | 23            | 238                 | 10.3                  | 1.5-24.2          | 23-75                              |
| <u>Vermilion Snapper</u><br><u>Rhomboplites aurorubens</u>       | 2             | 6                   | 3.0                   | 2.0-4.2           | 41-201                             |
| <u>Queen Snapper</u><br><u>Etilis ocellatus</u>                  | 2             | 24                  | 12.0                  | 8.9-14.0          | 99-131                             |
| <u>Wenchman</u><br><u>Pristipomoides aquilonaris</u>             | 5             | 10                  | 2.0                   | N/A               | 60-131                             |
| <u>Red Porgy</u><br><u>Pagrus pagrus</u>                         | 8             | 23                  | 2.9                   | 1.5-4.4           | 41-82                              |
| <u>Greater Amberjack</u><br><u>Seriola dumerilli</u>             | 6             | 158                 | 26.3                  | 16.2-34.5         | 41-141                             |

\*Not weighed on vessel. Weight taken from fish sale ticket.

Table 2. Catch rates by set, day and gear type.

| Date      | Set No.     | Hooks<br>(no.) | Soak<br>time<br>(min.) | Catch<br>(lbs.) | Hook/hours | Catch per<br>hook/hour<br>(lbs.) |
|-----------|-------------|----------------|------------------------|-----------------|------------|----------------------------------|
| 3/1/84    | L-3/1-1     | 191            | 120                    | 134             | 382        | .351                             |
| 3/1/84    | L-3/1-2     | 198            | 180                    | 0               | 594        | .000                             |
| 3/1/84    | Longline    |                |                        | 134             | 976        | .137                             |
| 3/1/84    | Day total   |                |                        | 134             | 976        | .137                             |
| 3/2/84    | L-3/2-1     | 200            | 150                    | 0               | 500        | .000                             |
| 3/2/84    | L-3/2-2     | 350            | 110                    | 154             | 642        | .240                             |
| 3/2/84    | L-3/2-3     | 178            | 215                    | 89              | 638        | .139                             |
| 3/2/84    | L-3/2-4     | 284            | 270                    | 0               | 1278       | .000                             |
| 3/2/84    | Longline    |                |                        | 243             | 3058       | .079                             |
| 3/2/84    | Day total   |                |                        | 243             | 3058       | .079                             |
| 3/3/84    | L-3/3-1     | 288            | 120                    | 0               | 576        | .000                             |
| 3/3/84    | L-3/3-2     | 233            | 150                    | 0               | 583        | .000                             |
| 3/3/84    | L-3/3-3     | 94             | 45                     | 0               | 71         | .000                             |
| 3/3/84    | L-3/3-4     | 102            | 40                     | 75              | 68         | 1.103                            |
| 3/3/84    | L-3/3-5     | 82             | 30                     | 73              | 41         | 1.780                            |
| 3/3/84    | Longline    |                |                        | 148             | 1340       | .110                             |
| 3/3/84    | Day total   |                |                        | 148             | 1340       | .110                             |
| Segment 1 | Total       |                |                        | 525             | 5372       | .098                             |
| 3/9/84    | L-3/9-1     | 109            | 45                     | 34              | 89         | .382                             |
| 3/9/84    | L-3/9-2     | 126            | 50                     | 39              | 105        | .371                             |
| 3/9/84    | L-3/9-4     | 86             | 210                    | 151             | 301        | .502                             |
| 3/9/84    | L-3/9-5     | 286            | 70                     | 212             | 334        | .635                             |
| 3/9/84    | L-3/9-6     | 197            | 140                    | 6               | 460        | .013                             |
| 3/9/84    | L-3/9-7     | 132            | 150                    | 120             | 330        | .364                             |
| 3/9/84    | Longline    |                |                        | 562             | 1622       | .346                             |
| 3/9/84    | Day total   |                |                        | 562             | 1622       | .346                             |
| 3/10/84   | L-3/10-1(K) | 150            | 140                    | 0               | 350        | .000                             |
| 3/10/84   | L-3/10-2    | 52             | 45                     | 7               | 39         | .179                             |
| 3/10/84   | L-3/10-3    | 64             | 35                     | 0               | 37         | .000                             |
| 3/10/84   | L-3/10-4    | 73             | 55                     | 15              | 67         | .224                             |
| 3/10/84   | L-3/10-5    | 86             | 45                     | 0               | 65         | .000                             |
| 3/10/84   | L-3/10-6    | 95             | 60                     | 47              | 95         | .495                             |
| 3/10/84   | Kali pole   |                |                        | 0               | 350        | .000                             |
| 3/10/84   | Longline    |                |                        | 69              | 304        | .227                             |
| 3/10/84   | Day total   |                |                        | 69              | 654        | .106                             |
| 3/11/84   | L-3/11-1    | 132            | 110                    | 51              | 242        | .211                             |
| 3/11/84   | L-3/11-2    | 213            | 235                    | 198             | 834        | .237                             |
| 3/11/84   | L-3/11-3    | 208            | 215                    | 36              | 745        | .486                             |
| 3/11/84   | L-3/11-4    | 204            | 180                    | 240             | 612        | .392                             |
| 3/11/84   | L-3/11-5    | 161            | 140                    | 170             | 376        | .452                             |
| 3/11/84   | L-3/11-6    | 259            | 135                    | 60              | 583        | .103                             |
| 3/11/84   | L-3/11-7    | 167            | 720                    | 18              | 1512       | .012                             |
| 3/11/84   | Longline    |                |                        | 773             | 4904       | .158                             |
| 3/11/84   | Day total   |                |                        | 773             | 4904       | .158                             |
| 3/12/84   | L-3/12-1    | 50             | 330                    | 96              | 275        | .349                             |
| 3/12/84   | L-3/12-2    | 170            | 105                    | 87              | 298        | .292                             |
| 3/12/84   | L-3/12-3    | 243            | 180                    | 44              | 729        | .060                             |
| 3/12/84   | L-3/12-4    | 65             | 290                    | 63              | 314        | .201                             |
| 3/12/84   | L-3/12-5(K) | 100            | 240                    | 0               | 400        | .000                             |
| 3/12/84   | Kali pole   |                |                        | 0               | 400        | .000                             |
| 3/12/84   | Longline    |                |                        | 290             | 1616       | .179                             |
| 3/12/84   | Day total   |                |                        | 290             | 2016       | .144                             |

Table 2. Catch rates by set, day and gear type. (cont.)

| Date    | Set no.     | Hooks<br>(no.) | Soak<br>time<br>(min.) | Catch<br>(lbs.) | Hook/hours | Catch per<br>hook/hour<br>(lbs.) |
|---------|-------------|----------------|------------------------|-----------------|------------|----------------------------------|
| 3/13/84 | L-3/13-1    | 76             | 145                    | 65              | 183        | .355                             |
| 3/13/84 | L-3/13-2    | 290            | 125                    | 108             | 604        | .179                             |
| 3/13/84 | L-3/13-3    | 72             | 185                    | 38              | 222        | .171                             |
| 3/13/84 | L-3/13-4    | 260            | 120                    | 225             | 520        | .433                             |
| 3/13/84 | L-3/13-5(K) | 116            | 145                    | 91              | 280        | .325                             |
| 3/13/84 | L-3/13-6    | 63             | 310                    | 57              | 325        | .175                             |
| 3/13/84 | L-3/13-7    | 222            | 90                     | 254             | 333        | .763                             |
| 3/13/84 | L-3/13-8    | 287            | 80                     | 72              | 430        | .167                             |
| 3/13/84 | L-3/13-9    | 77             | 755                    | 8               | 969        | .008                             |
| 3/13/84 | Kali pole   |                |                        | 91              | 280        | .325                             |
| 3/13/84 | Longline    |                |                        | 827             | 3586       | .231                             |
| 3/13/84 | Day total   |                |                        | 918             | 3866       | .237                             |
| 3/14/84 | L-3/14-1    | 226            | 150                    | 92              | 565        | .163                             |
| 3/14/84 | L-3/14-2(K) | 80             | 210                    | 27              | 280        | .096                             |
| 3/14/84 | L-3/14-3(K) | 80             | 75                     | 22              | 100        | .220                             |
| 3/14/84 | L-3/14-4    | 118            | 160                    | 38              | 315        | .121                             |
| 3/14/84 | L-3/14-5    | 60             | 215                    | 26              | 215        | .121                             |
| 3/14/84 | L-3/14-6(K) | 80             | 260                    | 0               | 347        | .000                             |
| 3/14/84 | L-3/14-7(K) | 120            | 160                    | 2               | 320        | .006                             |
| 3/14/84 | Kali pole   |                |                        | 51              | 1047       | .049                             |
| 3/14/84 | Longline    |                |                        | 156             | 1095       | .142                             |
| 3/14/84 | Day total   |                |                        | 207             | 2142       | .097                             |
| 3/15/84 | L-3/15-1    | 112            | 95                     | 0               | 177        | .000                             |
| 3/15/84 | L-3/15-2    | 215            | 140                    | 104             | 502        | .207                             |
| 3/15/84 | L-3/15-3(K) | 84             | 225*                   | 117             | 315        | .371                             |
| 3/15/84 | L-3/15-4    | 180            | 165*                   | 65              | 495        | .131                             |
| 3/15/84 | L-3/15-5    | 120            | 200                    | 13              | 400        | .033                             |
| 3/15/84 | L-3/15-6(K) | 100            | 125                    | 0               | 208        | .000                             |
| 3/15/84 | L-3/15-7(K) | 275            | 95                     | 25              | 435        | .057                             |
| 3/15/84 | Kali pole   |                |                        | 142             | 1135       | .125                             |
| 3/15/84 | Longline    |                |                        | 182             | 1397       | .130                             |
| 3/15/84 | Day total   |                |                        | 324             | 2532       | .128                             |
| 3/16/84 | L-3/16-1(K) | 297            | 105                    | 79              | 520        | .152                             |
| 3/16/84 | L-3/16-2(K) | 226            | 120                    | 81              | 452        | .179                             |
| 3/16/84 | L-3/16-3(K) | 290            | 70                     | 27              | 338        | .080                             |
| 3/16/84 | L-3/16-4(K) | 209            | 130                    | 104             | 453        | .230                             |
| 3/16/84 | L-3/16-5(K) | 209            | 240                    | 7               | 836        | .008                             |
| 3/16/84 | L-3/16-6(K) | 236            | 125                    | 147             | 492        | .299                             |
| 3/16/84 | L-3/16-7(K) | 275            | 60                     | 44              | 275        | .160                             |
| 3/16/84 | L-3/16-8(K) | 165            | 125                    | 62              | 333        | .186                             |
| 3/16/84 | Kali pole   |                |                        | 551             | 3699       | .149                             |
| 3/16/84 | Day total   |                |                        | 551             | 3699       | .149                             |
| 3/17/84 | L-3/17-1(K) | 198            | 80                     | 30              | 264        | .114                             |
| 3/17/84 | L-3/17-2(K) | 231            | 180                    | 49              | 693        | .071                             |
| 3/17/84 | L-3/17-3(K) | 203            | 80                     | 23              | 271        | .085                             |
| 3/17/84 | L-3/17-4(K) | 200*           | 90                     | 8               | 300        | .027                             |
| 3/17/84 | L-3/17-5    | 178            | 115                    | 101             | 341        | .296                             |
| 3/17/84 | Kali pole   |                |                        | 110             | 1528       | .072                             |
| 3/17/84 | Longline    |                |                        | 101             | 341        | .296                             |
| 3/17/84 | Day total   |                |                        | 211             | 1869       | .113                             |
| 3/18/84 | L-3/18-1    | 200            | 180                    | 67              | 600        | .112                             |
| 3/18/84 | L-3/18-2(K) | 275            | 105*                   | 0               | 481        | .000                             |
| 3/18/84 | L-3/18-3(K) | 280            | 160*                   | 0               | 747        | .000                             |
| 3/18/84 | L-3/18-4    | 210            | 250                    | 67              | 875        | .077                             |

\*estimate

Table 2. Catch rates by set, day and gear type. (cont.)

| Date       | Set no.    | Hooks<br>(no.) | Soak<br>time<br>(min.) | Catch<br>(lbs.) | Hook/hours | Catch per<br>hook/hour<br>(lbs.) |
|------------|------------|----------------|------------------------|-----------------|------------|----------------------------------|
| 3/18/84    | Kali pole  |                |                        | 0               | 1228       | .000                             |
| 3/18/84    | Longline   |                |                        | 134             | 1475       | .091                             |
| 3/18/84    | Day total  |                |                        | 134             | 2703       | .050                             |
| Segment II | Kali pole  |                |                        | 945             | 9667       | .098                             |
| Segment II | Longline   |                |                        | 3094            | 16340      | .189                             |
| Segment II | Total      |                |                        | 4039            | 26007      | .155                             |
| 4/2/84     | L-4/2-1    | 260            | 125                    | 94              | 542        | .173                             |
| 4/2/84     | L-4/2-2    | 272            | 210                    | 179             | 952        | .188                             |
| 4/2/84     | L-4/2-3    | 200            | 205                    | 39              | 683        | .057                             |
| 4/2/84     | L-4/2-4    | 272            | 165                    | 74              | 748        | .099                             |
| 4/2/84     | L-4/2-5(K) | 108            | 155                    | 32              | 279        | .115                             |
| 4/2/84     | Kali pole  |                |                        | 32              | 279        | .115                             |
| 4/2/84     | Longline   |                |                        | 386             | 2925       | .132                             |
| 4/2/84     | Day total  |                |                        | 418             | 3204       | .130                             |
| 4/3/84     | L-4/3-1(K) | 108            | 180                    | 149             | 144        | 1.035                            |
| 4/3/84     | L-4/3-2    | 262            | 105                    | 188             | 459        | .410                             |
| 4/3/84     | L-4/3-3(K) | 183            | 120                    | 31              | 366        | .085                             |
| 4/3/84     | L-4/3-4(K) | 195            | 85                     | 44              | 276        | .159                             |
| 4/3/84     | L-4/3-5(K) | 232            | 90                     | 0               | 348        | .000                             |
| 4/3/84     | L-4/3-6(K) | 209            | 90                     | 0               | 314        | .000                             |
| 4/3/84     | L-4/3-7(K) | 151            | 60                     | 55              | 151        | .364                             |
| 4/3/84     | L-4/3-8(K) | 222            | 60                     | 21              | 222        | .095                             |
| 4/3/84     | L-4/3-9(K) | 148            | 75                     | 42              | 185        | .227                             |
| 4/3/84     | Kali pole  |                |                        | 342             | 2006       | .170                             |
| 4/3/84     | Longline   |                |                        | 188             | 459        | .410                             |
| 4/3/84     | Day total  |                |                        | 530             | 2465       | .215                             |
| 4/4/84     | L-4/4-1(K) | 202            | 45                     | 26              | 152        | .171                             |
| 4/4/84     | L-4/4-2(K) | 185            | 60                     | 0               | 185        | .000                             |
| 4/4/84     | L-4/4-3    | 208            | 60                     | 133             | 208        | .639                             |
| 4/4/84     | L-4/4-4    | 233            | 65                     | 0               | 252        | .000                             |
| 4/4/84     | L-4/4-5    | 194            | 130                    | 0               | 420        | .000                             |
| 4/4/84     | Kali pole  |                |                        | 26              | 337        | .077                             |
| 4/4/84     | Longline   |                |                        | 133             | 880        | .151                             |
| 4/4/84     | Day total  |                |                        | 159             | 1217       | .131                             |
| 4/5/84     | L-4/5-1    | 200            | 40                     | 108             | 133        | .812                             |
| 4/5/84     | L-4/5-2    | 233            | 45                     | 64              | 175        | .366                             |
| 4/5/84     | L-4/5-3(K) | 160            | 120                    | 67              | 320        | .209                             |
| 4/5/84     | L-4/5-4    | 265            | 85                     | 119             | 375        | .317                             |
| 4/5/84     | L-4/5-5(K) | 178            | 120                    | 30              | 356        | .084                             |
| 4/5/84     | L-4/5-6(K) | 130            | 60                     | 49              | 130        | .377                             |
| 4/5/84     | L-4/5-7(K) | 191            | 60                     | 9               | 191        | .047                             |
| 4/5/84     | L-4/5-8(K) | 140            | 60                     | 46              | 140        | .329                             |
| 4/5/84     | L-4/5-9(K) | 140            | 45                     | 8               | 105        | .076                             |
| 4/5/84     | Kali pole  |                |                        | 209             | 1242       | .168                             |
| 4/5/84     | Longline   |                |                        | 291             | 683        | .426                             |
| 4/5/84     | Day total  |                |                        | 500             | 1925       | .260                             |
| 4/6/84     | L-4/6-1(K) | 128            | 50                     | 7               | 107        | .065                             |
| 4/6/84     | L-4/6-2(K) | 195            | 95                     | 0               | 309        | .000                             |
| 4/6/84     | L-4/6-3(K) | 150            | 60                     | 0               | 150        | .000                             |
| 4/6/84     | L-4/6-4(K) | 130            | 40                     | 0               | 87         | .000                             |
| 4/6/84     | L-4/6-5    | 210            | 90                     | 40              | 315        | .127                             |
| 4/6/84     | L-4/6-6(K) | 120            | 105                    | 35              | 210        | .167                             |
| 4/6/84     | L-4/6-7(K) | 113            | 35                     | 0               | 66         | .000                             |



Table 2. Catch rates by set, day and gear type. (cont.)

| Date        | Set no.     | Hooks<br>(no.) | Soak<br>time<br>(min.) | Catch<br>(lbs.) | Hook/hours | Catch per<br>hook/hour<br>(lbs.) |
|-------------|-------------|----------------|------------------------|-----------------|------------|----------------------------------|
| 4/6/84      | L-4/6-8(K)  | 147            | 45                     | 0               | 110        | .000                             |
| 4/6/84      | L-4/6-9(K)  | 191            | 80                     | 24              | 255        | .094                             |
| 4/6/84      | L-4/6-10(K) | 130            | 50                     | 0               | 108        | .000                             |
| 4/6/84      | L-4/6-11(K) | 96             | 420                    | 6               | 672        | .009                             |
| 4/6/84      | Kali pole   |                |                        | 72              | 2074       | .035                             |
| 4/6/84      | Longline    |                |                        | 40              | 315        | .127                             |
| 4/6/84      | Day total   |                |                        | 112             | 2389       | .047                             |
| 4/7/84      | L-4/7-1(K)  | 139            | 45                     | 8               | 104        | .077                             |
| 4/7/84      | L-4/7-2(K)  | 103            | 75                     | 6               | 129        | .047                             |
| 4/7/84      | L-4/7-3(K)  | 132            | 45                     | 0               | 99         | .000                             |
| 4/7/84      | Kali pole   |                |                        | 14              | 332        | .042                             |
| 4/7/84      | Day total   |                |                        | 14              | 332        | .042                             |
| 4/8/84      | L-4/8-1(K)  | 106            | 60                     | 10              | 106        | .094                             |
| 4/8/84      | Kali pole   |                |                        | 10              | 106        | .094                             |
| 4/8/84      | Day total   |                |                        | 10              | 106        | .094                             |
| 4/9/84      | L-4/9-1(K)  | 92             | 55                     | 0               | 84         | .000                             |
| 4/9/84      | L-4/9-2(K)  | 123            | 90                     | 9               | 185        | .049                             |
| 4/9/84      | L-4/9-3(K)  | 90             | 105                    | 21              | 157        | .134                             |
| 4/9/84      | L-4/9-4(K)  | 110            | 45                     | 0               | 82         | .000                             |
| 4/9/84      | L-4/9-5(K)  | 101            | 70                     | 0               | 118        | .000                             |
| 4/9/84      | L-4/9-6(K)  | 120            | 40                     | 0               | 80         | .000                             |
| 4/9/84      | L-4/9-7(K)  | 129            | 60                     | 27              | 129        | .209                             |
| 4/9/84      | Kali pole   |                |                        | 57              | 835        | .068                             |
| 4/9/84      | Day total   |                |                        | 57              | 835        | .068                             |
| 4/10/84     | L-4/10-1(K) | 134            | 90                     | 5               | 201        | .025                             |
| 4/10/84     | L-4/10-2(K) | 78             | 110                    | 17              | 143        | .119                             |
| 4/10/84     | Kali pole   |                |                        | 22              | 344        | .064                             |
| 4/10/84     | Day total   |                |                        | 22              | 344        | .064                             |
| Segment III | Kali pole   |                |                        | 784             | 7555       | .104                             |
| Segment III | Longline    |                |                        | 1038            | 5262       | .197                             |
| Segment III | Total       |                |                        | 1822            | 12817      | .142                             |
| Cruise      | Kali pole   |                |                        | 1729            | 17222      | .100                             |
| Cruise      | Longline    |                |                        | 4657            | 26974      | .173                             |
| Cruise      | Total       |                |                        | 6386            | 44196      | .144                             |

Table 3. Catch per hook in relation to soak time.

|                 | Soak time<br>(minutes) |       |        |         |         |         |         |         |          |   |
|-----------------|------------------------|-------|--------|---------|---------|---------|---------|---------|----------|---|
|                 | 30-60                  | 61-90 | 91-120 | 121-150 | 151-180 | 181-210 | 211-240 | 241-270 | over 271 |   |
| Number of sets  | 36                     | 19    | 20     | 18      | 8       | 6       | 6       | 3       | 6        | 6 |
| Pounds per hook | .178                   | .316  | .313   | .389    | .312    | .597    | .505    | .106    | .678     |   |

Table 4. Price structure by species.

| Species             | Price range/lb. |
|---------------------|-----------------|
| Yellowedge grouper  | \$1.40-\$1.60   |
| Warsaw grouper      | \$1.00-\$1.20   |
| Snowy grouper       | \$1.40-\$1.60   |
| Yellowmouth grouper | \$1.70          |
| Scamp               | \$1.70          |
| Golden tilefish     |                 |
| over 12 lb.         | \$1.00-\$1.20   |
| 8-12 lb.            | \$1.00          |
| 4-8 lb.             | \$ .80-\$1.00   |
| under 4 lb.         | \$ .60-\$1.00   |
| Red Snapper         |                 |
| over 10 lb.         | \$2.25-\$2.50   |
| 4-10 lb.            | \$2.25          |
| 2-4 lb.             | \$2.00          |
| 1-2 lb.             | \$1.75          |
| Vermilion Snapper   | \$1.50          |
| Queen Snapper       | \$1.50          |
| Wenchman            | \$ .50          |
| Red Porgy           | \$ .50          |
| Amberjack           | \$ .30-\$ .35   |

APPENDIX I  
BOTTOM LONGLINE  
GEAR AND TRIP COSTS

## BOTTOM LONGLINE GEAR COSTS

The cost of rigging up for bottom longlining is assumed to be a one-time cost. Naturally equipment will have to be replaced as it is lost or damaged. The amount of lost or damaged equipment depends on the skill and experience of the fisherman and, of course, luck. The prices quoted are for new equipment (except for the cable and the styrofoam blocks). Costs of rigging up are, of course, reduced as a fisherman "bargain hunts" and/or draws on his own inventory of existing supplies and equipment.

The cost of rigging includes no installation costs (such as welding) or electronic equipment costs. A radar and a Loran receiver are essential and will probably already be on most offshore shrimp vessels. A Loran plotter is very useful, but not essential. A paper or video depth recorder is absolutely essential and may or may not already be on the vessel.

Also not included in the cost of rigging are stern controls, since most vessels already have them. While longlining can be conducted without stern controls, it is much more difficult.

Prices are given both for rigging with steel cable and with rope. While it is more expensive initially to rig for cable, gear loss is greatly reduced.

### Bottom Longline Gear Costs - Cable

| <u>Item</u>                 | <u>Quantity</u> | <u>Cost<br/>per unit</u> | <u>Total<br/>Cost</u> |
|-----------------------------|-----------------|--------------------------|-----------------------|
| hydraulic winch             | 1               | @ \$3,365.00             | \$3,365               |
| hydraulic switch and lines  | -               | @ -                      | 250                   |
| davit fabrication materials | -               | @ -                      | 100                   |
| 1/4" oilfield cable         | 15,000 ft.      | @ .05                    | 750                   |
| 3/8" poly buoy rope         | 5,500 ft.       | @ .08                    | 440                   |
| cable splice crimps         | 200             | @ .15                    | 30                    |
| splicing tool               | 1               | @ 70.00                  | 70                    |
| cable stops                 | 1,300           | @ .08                    | 104                   |
| stop crimping tool          | 1               | @ 70.00                  | 70                    |
| 3/16" cable shackles        | 50              | @ 1.00                   | 50                    |
| A/K snaps & swivels         | 1,000           | @ .90                    | 900                   |
| circle hooks                | 1,500           | @ .23                    | 345                   |
| 170 lb. test monofilament   | 12 lbs.         | @ 13.00                  | 156                   |
| 10 lb. anchor weights       | 20              | @ 2.15                   | 43                    |
| 6 lb. line weights          | 50              | @ 1.90                   | 95                    |
| radar reflectors            | 6               | @ 15.00                  | 90                    |
| red ball buoys              | 8               | @ 9.00                   | 72                    |
| light sticks                | 100             | @ 2.00                   | 200                   |
| 10' aluminum pipes (2 1/2") | 8               | @ 20.00                  | 160                   |
| 2' square styrofoam blocks  | 8               | @ -                      | -                     |
| gaff hook                   | 1               | @ 22.00                  | 22                    |
| pews                        | 2               | @ 9.00                   | 18                    |

| <u>Item</u>                    | <u>Quantity</u> |   | <u>Cost<br/>per unit</u> | <u>Total<br/>Cost</u> |
|--------------------------------|-----------------|---|--------------------------|-----------------------|
| drag hooks                     | 2               | @ | 13.00                    | 26                    |
| grappling hooks                | 2               | @ | 12.00                    | 24                    |
| butcher knives                 | 2               | @ | 5.00                     | 10                    |
| boning knives                  | 2               | @ | 5.00                     | 10                    |
| whetstone                      | 1               | @ | 10.00                    | 10                    |
| orange fluorescent spray paint | 2 cans          | @ | 5.00                     | 10                    |
| duct tape                      | 4 rolls         | @ | 6.00                     | 24                    |
| fishing gloves                 | 2 doz.          | @ | 27.00                    | 54                    |
| rubber gloves                  | 2 doz.          | @ | 18.00                    | 36                    |
|                                |                 |   |                          | <u>\$7,534</u>        |

Bottom Longline Gear Costs - Rope

| <u>Item</u>                    | <u>Quantity</u> |   | <u>Cost<br/>per unit</u> | <u>Total<br/>Cost</u> |
|--------------------------------|-----------------|---|--------------------------|-----------------------|
| electric winch                 | 1               | @ | \$1,200.00               | \$1,200               |
| electric switch and wires      | -               | @ | 100.00                   | 100                   |
| davit fabrication materials    | -               | @ | -                        | 100                   |
| 1/4" poly groundline rope      | 15,000 ft       | @ | .07                      | 1,050                 |
| 1/4" poly buoy rope            | 5,500 ft        | @ | .07                      | 385                   |
| 3/16" shackles                 | 50              | @ | 1.00                     | 50                    |
| A/K snaps & swivels            | 1,000           | @ | .90                      | 900                   |
| circle hooks                   | 1,500           | @ | .23                      | 345                   |
| 170 lbs. test monofilament     | 12 lbs.         | @ | 13.00                    | 156                   |
| 10 lb. anchor weights          | 20              | @ | 2.15                     | 43                    |
| 6 lb. line weights             | 50              | @ | 1.90                     | 95                    |
| radar reflectors               | 6               | @ | 15.00                    | 90                    |
| red ball buoys                 | 8               | @ | 9.00                     | 72                    |
| light sticks                   | 100             | @ | 2.00                     | 200                   |
| 10' aluminum pipes (2 1/2")    | 8               | @ | 20.00                    | 160                   |
| 2' square styrofoam blocks     | 8               | @ | -                        | -                     |
| gaff hook                      | 1               | @ | 22.00                    | 22                    |
| pews                           | 2               | @ | 9.00                     | 18                    |
| drag hooks                     | 2               | @ | 13.00                    | 26                    |
| grappling hooks                | 2               | @ | 12.00                    | 24                    |
| butcher knives                 | 2               | @ | 5.00                     | 10                    |
| boning knives                  | 2               | @ | 5.00                     | 10                    |
| whetstone                      | 1               | @ | 10.00                    | 10                    |
| orange fluorescent spray paint | 2 cans          | @ | 5.00                     | 10                    |
| duct tape                      | 4 folls         | @ | 6.00                     | 24                    |
| fishing gloves                 | 2 doz.          | @ | 27.00                    | 54                    |
| rubber gloves                  | 2 doz.          | @ | 18.00                    | 36                    |
|                                |                 |   |                          | <u>\$5,190</u>        |

Brummel hooks (@ \$3.20 each) may be substituted for the shackles and are faster to work with. The radar reflectors, aluminum pipes, and styrofoam blocks are used for making buoys. Light sticks are put on buoys that will be retrieved after dark. Hiflier pole buoys may be substituted for the pipe and styrofoam buoys but are somewhat more expensive.

The stops listed under cable longline supplies are spaced on the cable from 10 to 25 feet apart and crimped into place. The stops prevent snagged hooks from sliding into a bunch on the line and allow for faster retrieval.

The orange fluorescent spray paint is used for marking lines. Pews and drag hooks are used to handle fish on board the vessel.

The cost of a 100-pole set of kali poles is shown below. Since kali poles will probably be used in association with conventional longlines, the associated gear (buoys, knives, gloves, etc.) is not relisted.

|  |                |
|--|----------------|
| 5600 feet of 3/8-inch braided nonrotating poly rope @ 8¢/ft..... | \$ 448         |
| Cost of materials for 100 kali poles.....                        | \$1,100        |
| 100 ten-foot lengths of 2-inch PVC pipe for storage bundle.....  | \$ 518         |
|  | <u>\$2,066</u> |

Materials for the kali poles include the following: 8-foot lengths of 1/2-inch PVC pipe, steel rods for weights, 4-inch Rosendahl floats, 1/2-inch nylon rope for tying float to pole, PVC pipe caps, A.K. snaps, circle hooks, monofilament and monofilament crimps (Figure 5).

#### BOTTOM LONGLINE TRIP COSTS

The trip costs are calculated for a 10-fishing-day trip with a 97-foot steel vessel equipped with twin-screw V-12 diesel engines. Use of a smaller vessel with less power would accordingly decrease costs.

| <u>Item</u> | <u>Quantity</u> |   | <u>Price</u> | <u>Cost</u> |
|-------------|-----------------|---|--------------|-------------|
| diesel fuel | 2,200 gal.      | @ | \$ .87       | \$1,914     |
| oil         | 55 gal.         | @ | 3.27         | 180         |
| ice         | 125 bars        | @ | 5.00         | 625         |
| groceries   | -               |   | -            | 900         |
| bait        | 1,200 lbs.      | @ | .40          | 480         |
| salt        | 400 lbs.        | @ | .10          | 40          |

Diesel fuel costs were figured at 100 gallons per day while fishing and 600 gallons each way, in and out. Ice costs can be expected to increase slightly if fishing is conducted during the warm seasons. Salt is used to apply to the bait after it is cut to preserve and toughen it.

APPENDIX II

CRUISE LOG



| Longline Set No. | Lozan C and Set Direction  | Wind Dir. | Seas Ft. | Depth Fath.     | Bottom Description  | No. Hooks | Bait                                  | Time Set      | Soak Time      | Catch                                 | lbs. | Bycatch   | Comments   |
|------------------|----------------------------|-----------|----------|-----------------|---|-----------|---------------------------------------|---------------|----------------|---------------------------------------|------|---|--|
| L-3/1-1          | 28436.7<br>46730.5<br>S    | S-SW      | 0-1      | 46<br>to<br>61  | rolling   | 191       | squid                                 | 9:15<br>p.m.  | 2 hr           | 4 red snapper<br>2 yellowedge grouper | 97   | 12 smooth dogfish<br>3 broadband dogfish<br>6 moray eels<br>1 rock sea bass   |  |
| L-3/1-2          | 28421.9<br>46727.3<br>S    | S-SW      | 0-1      | 54<br>to<br>105 | rough-rolling   | 198       | squid                                 | 10:53<br>p.m. | 3 hr           |                                       |      | 22 giant snake eels<br>2 scalloped hammerhead sharks<br>2 broadband dogfish   |  |
| L-3/2-1          | 28422.2<br>46726.4<br>N-NE | S-SW      | 0-1      | 56<br>to<br>102 | gentle slope with small hills                             | 200       | 50 shark<br>150 mackeral              | 1:33<br>a.m.  | 2 hr<br>30 min | 1 warsaw grouper                      | 154  | 53 giant snake eels<br>10 broadband dogfish   |  |
| L-3/2-2          | 28430.5<br>46729.5<br>E    | S-SW      | 0-1      | 43<br>to<br>46  | very gentle slope   | 350       | 50 mackeral<br>100 squid<br>200 shark | 6:30<br>a.m.  | 1 hr<br>50 min |                                       |      | 1 broadband dogfish<br>2 Atl. sharpnose sharks<br>2 ? sharks<br>1 moray eel   |  |
| L-3/2-3          | 28383.2<br>46696.8<br>S    | S-SE      | 0-1      | 84<br>to<br>116 | steep slope soft mud on deep end, hard mud on shallow end | 178       | mackeral                              | 11:30<br>a.m. | 3 hr<br>35 min | 4 yellowedge grouper                  | 89   | 36 broadband dogfish<br>16 giant snake eels<br>22 hake  | many eels and all grouper struck hake that took bait. All grouper in middle of line, eels on deep end and dogfish shallow. |
| L-3/2-4          | 28358.9<br>46705.6<br>NW   | S-SE      | 0-1      | 74<br>to<br>118 | level with one sharp drop                                 | 284       | mackeral shark                        | 12:32<br>p.m. | 4 hr<br>30 min |                                       |      | 7 giant snake eels<br>34 broadband dogfish  |  |
| L-3/3-1          | 28294.1<br>46650.1<br>S-SE | S         | 2-4      | 60<br>to<br>61  | flat - small mud lumps                                    | 288       | squid and mackeral                    | 6:10<br>a.m.  | 2 hr           |                                       |      | 11 smooth dogfish<br>2 sandbar sharks<br>1 giant snake eel<br>2 moray eels<br>1 scorpion fish<br>3 white trout<br>1 croaker | all trout and croaker shark damaged  |

| Lo.-line Set No. | Loran C and Set Direction     | Wind Dir. | Seas Ft. | Depth Fath. | Bottom Description                            | No. Hooks | Bait              | Time Set   | Soak Time                | Catch   | lbs.                | Bycatch   | Comments                         |
|------------------|-------------------------------|-----------|----------|-------------|---|-----------|-------------------|------------|--------------------------|---|---------------------|---|----------------------------------|
| L-3/3-2          | 28280.2<br>46654.1<br>N-NW    | S         | 2-4      | 59 to 61    | flat - small mud lumps                        | 233       | squid             | 7:00 a.m.  | 2 hr 30 min              |   |                     | 7 giant snake eels<br>7 smooth dogfish<br>1 scalloped hammerhead shark  |                                  |
| L-3/3-3          | 28285.5<br>46625.9<br>NW      | S-SE      | 2-4      | 74 to 80    | flat mud bottom near small coral covered hill | 94        | squid             | 11:30 a.m. | 45 min                   |   |                     | 3 hake  |                                  |
| L-3/3-4          | 28282.8<br>46635.8<br>N       | S-SE      | 2-4      | 79 to 73    | rock and coral covered hill                   | 102       | squid             | 2:20 p.m.  | 40 min                   | 1 yellowedge grouper<br>1 warsaw grouper<br>1 red porgy<br>1 amberjack                    | 18<br>30<br>3<br>24 | 4 hake<br>1 white trout<br>1 giant snake eel<br>1 moray eel<br>1 shark? |                                  |
| L-3/3-5          | 28285.2<br>46635.3<br>NW      | S-SE      | 2-4      | 82          | rock and coral hill                           | 103       | squid             | 3:45 p.m.  | 30 min                   | 2 warsaw grouper<br>1 red porgy   | 70<br>3             | 1 giant snake eel   |                                  |
| L-3/9-1          | 27789.2<br>46622.7<br>N       | calm      | 0-1      | 77 to 56    | rock bank, rough                              | 109       | squid             | 5:50 a.m.  | 45 min                   | 7 yellowedge grouper  | 34                  | 1 smooth dogfish  | set on Diaphus Bank              |
| L-3/9-2          | 27782.1<br>46625.6            | calm      | 0-7      | 41 to 62    | rock bank, rough                              | 126       | squid             | 7:50 a.m.  | 50 min                   | 1 vermillion snapper<br>1 red porgy<br>1 amberjack<br>1 snowy grouper                     | 2<br>2<br>29<br>6   | 1 smooth dogfish  | set on Diaphus Bank              |
| L-3/9-3          | 27782.0<br>46625.6<br>SW to W | NE        | 0-1      | 47 to 52    | rock bank, rough                              | 108       | squid             | 8:05 a.m.  | Lost with line was hung. | entire line, all snaps and hooks. Broke other buoy line (5/16") because vessel propeller. |                     |   | Cut one buoy line (1/2") because |
| L-3/9-4          | 27699.1<br>46606.2<br>SW      | NE        | 1-2      | 115 to 122  | gentle rise and fall, sandy mud and coral     | 86        | squid, some shark | 12:15 p.m. | 3 hr 30 min              | 8 yellowedge grouper<br>1 snowy grouper<br>1 warsaw grouper<br>3 tilefish                 | 98<br>25<br>21<br>7 | 1 broadband dogfish<br>8 hake   |                                  |
| L-3/9-5          | 27687.9<br>46603.7<br>NE      | NE        | 1-2      | 168 to 118  | sharp slope to level                          | 286       | squid             | 12:45 p.m. | 1 hr 10 min              | 12 yellowedge grouper<br>1 snowy grouper<br>1 tilefish                                    | 192<br>13<br>7      | 1 broadband dogfish<br>1 Atl. sharpnose shark<br>3 hake<br>1 moray eel  |                                  |

| Longline Set No. | Loran C and Set Direction     | Wind Dir. | Seas Ft. | Depth Fath. | Bottom Description                       | No. Hooks       | Bait                       | Time Set   | Soak Time   | Catch  | lbs.                 | Bycatch   | Comments                   |
|------------------|-------------------------------|-----------|----------|-------------|--|-----------------|----------------------------|------------|-------------|--|----------------------|---|----------------------------|
| L-3/9-6          | 27693.2<br>46604.5<br>NW to W | NE        | 1-2      | 122 to 218  | sharp slope sandy clay mud               | 197             | squid, some hake and shark | 3:20 p.m.  | 2 hr 20 min | 2 tilefish   | 6                    | 2 broadband dogfish<br>1 cuban dogfish<br>1 Atl. sharpnose shark<br>1 cow shark<br>8 hake |                            |
| L-3/9-7          | 27694.9<br>46605.4<br>NW      | NE        | 1-2      | 120 to 130  | level, sandy clay mud                    | 132             | squid, some hake           | 4:45 p.m.  | 2 hr 30 min | 7 yellowedge grouper<br>4 tilefish                                   | 91<br>29             | 16 hake<br>1 moray eel  |                            |
| L-3/10-1 (K) *   | 27600.2<br>46640.8<br>SE      | SE        | 3-5      | 34 to 38    | rock                                     | 150 on 30 poles | mackeral                   | 7:05 a.m.  | 2 hr 20 min |  |                      | 1 tiger shark   | set on Ewing Bank          |
| L-3/10-2         | 27581.8<br>46644.3<br>NW      | SE        | 3-5      | 42 to 53    | edge of rock bank                        | 52              | squid                      | 7:45 a.m.  | 45 min      | 1 yellowedge grouper   | 7                    |   | set on Ewing Bank          |
| L-3/10-3         | 27474.2<br>46634.2<br>S       | SE        | 2-4      | 58 to 70    | rolling - hard on hill tops              | 64              | mackeral some squid        | 11:30 a.m. | 35 min      |  |                      |   | no catch                   |
| L-3/10-4         | 27448.0<br>46619.9            | SE        | 3-5      | 82          | level                                    | 73              | squid and mackeral         | 1:35 p.m.  | 55 min      | 2 yellowedge grouper   | 15                   |   |                            |
| L-3/10-5         | 27423.2<br>46615.4<br>SW      | SE        | 3-5      | 117 to 122  | gentle slope sandy clay                  | 86              | mackeral                   | 3:35 p.m.  | 45 min      |  |                      | 2 broadband dogfish<br>4 hake   |                            |
| L-3/10-6         | 27346.7<br>46615.7            | SE        | 3-5      | 137 to 98   | steep slope rock and clay                | 95              | mackeral some squid        | 6:15 p.m.  | 1 hr        | 1 warsaw grouper   | 47                   | 1 hake  |                            |
| L-3/11-1         | 27004.7<br>46630.1<br>S       | SE        | 1-2      | 113 to 119  | very gentle rolling bottom               | 132             | mackeral some squid        | 6:35 a.m.  | 1 hr 50 min | 3 yellowedge grouper<br>1 tilefish                                   | 42<br>9              | 4 broadband dogfish<br>1 hake   |                            |
| L-3/11-2         | 26996.9<br>46625.5<br>S       | SE        | 1-2      | 99 to 131   | very gentle roll/rock and very sandy mud | 213             | mackeral some squid        | 6:55 a.m.  | 3 hr 55 min | 12 yellowedge grouper<br>5 tilefish<br>2 queen snapper<br>2 wenchman | 133<br>37<br>24<br>4 | 3 Atl. sharpnose sharks<br>2 moray eels   | south side of Phleger Bank |
| L-3/11-3         | 26986.8<br>46629.9<br>NW      | SE        | 3-5      | 79 to 129   | rolling                                  | 208             | mackeral some shark        | 10:00 a.m. | 3 hr 35 min | 3 yellowedge grouper<br>2 tilefish                                   | 21<br>15             | 1 giant snake eel<br>2 moray eels   |                            |

\* (K) denotes kalli pole set

| Longline Set No. | Loran C and Set Direction  | Wind Dir. | Seas Ft. | Depth Fath. | Bottom Description                | No. Hooks       | Bait                   | Time Set   | Soak Time        | Catch   | lbs.           | Bycatch  | Comments  |
|------------------|----------------------------|-----------|----------|-------------|-----------------------------------|-----------------|------------------------|------------|------------------|---|----------------|--|---|
| L-3/11-4         | 26995.9<br>46623.8         | SE        | 3-5      | 145 to 96   | level to sloping/sandy clay       | 204             | mackerel some shark    | 12:30 p.m. | 3 hr             | 23 yellowedge grouper<br>7 tilefish                         | 192<br>48      | 2 Atl. sharpnose<br>4 giant snake<br>eels<br>1 moray eel   |   |
| L-3/11-5         | 26981.5<br>46622.9<br>E-SE | E-SE      | 3-5      | 114 to 175  | moderate slope/sandy clay         | 161             | mackerel               | 3:10 p.m.  | 2 hr 20 min      | 5 yellowedge grouper<br>1 snowy grouper<br>13 tilefish      | 54<br>26<br>90 | 1 broadband dogfish<br>1 cow shark<br>6 hake   |   |
| L-3/11-6         | 26690.0<br>46623.1<br>S-SE | E-SE      | 3-5      | 113 to 178  | gradual slope/sandy clay          | 259             | crewfish mackerel      | 5:00 p.m.  | 2 hr 15 min      | 1 yellowedge grouper<br>9 tilefish                          | 12<br>48       | 2 giant snake<br>eels<br>6 hake  |   |
| L-3/11-7         | 26984.1<br>46622.5<br>E-SE | E-SE      | 5-7      | 133 to 160  | gentle slope to sandy clay        | 167             | mackerel               | 6:30 p.m.  | 12 hr over night | 2 yellowedge grouper<br>see comments                        | 18             | 1 broadband dogfish  | lost 2/3 of line and 111 snaps and hooks. defective shackles broke. |
| L-3/12-1         | 26989.5<br>46621.5<br>N-NW | S         | 5-7      | 167 to 134  | moderate slope sandy-clay         | 50              | mackerel               | 7:40 a.m.  | 5 hr 30 min      | 5 yellowedge grouper<br>6 tilefish                          | 50<br>46       | 2 cow sharks<br>2 hake   |   |
| L-3/12-2         | 26980.6<br>46620.0<br>W-NW | S         | 5-7      | 201 to 92   | moderate slope/sandy clay         | 170             | mackerel               | 8:30 a.m.  | 1 hr 45 min      | 3 yellowedge grouper<br>11 tilefish<br>1 vermillion snapper | 16<br>67<br>4  | 4 Atl. sharpnose<br>sharks<br>2 broadband dogfish<br>1 cow shark<br>1 giant snake<br>eel<br>3 moray eels<br>1 hake |   |
| L-3/12-3         | 26988.9<br>46618.9<br>W-NW | variable  | 5-7      | 212 to 195  | edge of slope mud                 | 243             | mackerel crewfish      | 12:45 p.m. | 3 hr             | 5 tilefish  | 44             | 1 broadband dogfish<br>2 cow sharks<br>6 hake  | cross-slope set   |
| L-3/12-4         | 26980.0<br>46621.1<br>NW   | N         | 3-5      | 172 to 157  | moderate slope                    | 65              | mackerel some crewfish | 1:55 p.m.  | 4 hr 50 min      | 7 tilefish  | 63             | 1 broadband dogfish<br>2 cow sharks<br>5 hake  |   |
| L-3/12-5 (R)     | 26986.6<br>46622.5         | N         | 3-5      | 127 to 111  | moderate slope rocks on upper end | 100<br>20 poles | mackerel               | 2:10 p.m.  | 4 hr             |   |                |  | seas walked the poles into a pile                                   |

| Log. line Set no. | Loran C and Set Direction  | Wind Dir. | Sess Ft. | Depth Fath. | Bottom Description                     | No. Hooks       | Bait     | Time Set   | Soak Time    | Catch                                   | lbs.       | Bycatch   | Comments  |
|-------------------|----------------------------|-----------|----------|-------------|--|-----------------|----------|------------|--------------|---|------------|---|---|
| L-3/13-1          | 26999.1<br>46623.8<br>NW   | S-SE      | 1-3      | 132 to 116  | moderate sharp slope                   | 76              | mackerel | 6:10 a.m.  | 2 hr 25 min  | 6 yellowedge grouper<br>1 tilefish      | 60<br>5    |   |   |
| L-3/13-2          | 26994.5<br>46622.4         | S-SE      | 1-3      | 148 to 190  | gentle slope firm mud                  | 290             | mackerel | 7:40 a.m.  | 2 hr 5 min   | 1 yellowedge grouper<br>22 tilefish     | 7<br>101   | 2 cow sharks<br>2 giant snake eels<br>1 moray eels<br>34 hake | followed firm mud contour on chromosome                           |
| L-3/13-3          | 26991.5<br>46624.3<br>E    | E-SE      | 1-3      | 119 to 134  | gentle slope                           | 72              | mackerel | 9:15 a.m.  | 3 hr 5 min   | 2 yellowedge grouper<br>2 tilefish      | 23<br>15   |   | line badly tangled. Set out too slow.                             |
| L-3/13-4          | 26994.6<br>46621.5<br>NW   | E-SE      | 1-3      | 163 to 135  | moderate sharp slope                   | 260             | mackerel | 11:15 a.m. | 2 hr         | 15 yellowedge grouper<br>16 tilefish    | 129<br>96  | 1 Atl. sharp-shark<br>1 giant snake eel<br>1 hake             |   |
| L-3/13-5 (R)      | 26996.3<br>46624.8         | E-SE      | 1-3      | 109 to 111  | gentle slope with one rock topped hill | 116<br>21 poles | mackerel | 12:25 p.m. | 2 hr 25 min  | 5 yellowedge grouper<br>1 snowy grouper | 72<br>19   |   | all fish on 3 poles in one spot (hill?) lost one pole - bad snap. |
| L-3/13-6          | 27002.3<br>46624.2         | E-SE      | 1-3      | 135 to 136  | edge of slope                          | 63              | mackerel | 1:00 p.m.  | 5 hr 10 min  | 3 yellowedge grouper<br>4 tilefish      | 23<br>34   |   | cross-slope set   |
| L-3/13-7          | 26999.2<br>46621.8<br>NE   | E-SE      | 1-3      | 150 to 145  | edge of slope to sandy-clay            | 222             | mackerel | 2:30 p.m.  | 1 hr 30 min  | 14 yellowedge grouper<br>17 tilefish    | 148<br>106 | 1 hake  | line tangled on one end. set out too slow.                        |
| L-3/13-8          | no reading                 | E-SE      | 1-3      | 160 to 143  | level sandy - clay                     | 287             | mackerel | 5:40 p.m.  | 1 hr 20 min  | 5 yellowedge grouper<br>5 tilefish      | 46<br>26   | 1 giant snake eel<br>1 moray eel<br>5 hake                    |   |
| L-3/13-9          | 26991.6<br>46622.9<br>NW   | variable  | 1-3      | 143 to 130  | steep slope to clay                    | 77              | mackerel | 6:45 p.m.  | 12 hr 35 min | 1 yellowedge grouper                    | 8          | 2 giant snake eels<br>6 hake                                  | overnight set   |
| L-3/14-1          | 26999.2<br>46625.3<br>W-SW | E-NE      | 1-3      | 113 to 75   | rolling rise edge of rock bank         | 226             | mackerel | 5:40 a.m.  | 2 hr 30 min  | 3 yellowedge grouper<br>1 amberjack     | 59<br>33   | 2 broadband dogfish<br>1 moray eel                            | set on Phleger Bank, broke line lost 97 hooks.                    |

| Logline Set No. | Loran C and Set Direction       | Wind Dir. | Seas Ft. | Depth Fath. | Bottom Description  | No. Hooks       | Bait     | Time Set   | Soak Time   | Catch   | lbs.          | Bycatch   | Comments   |
|-----------------|---------------------------------|-----------|----------|-------------|---|-----------------|----------|------------|-------------|---|---------------|---|--|
| L-3/14-2 (K)    | 27028.3<br>46626.3              | E-NE      | 1-3      | 43 to 45    | rugged rock   | 80<br>70 poles  | mackerel | 6:35 a.m.  | 3 hr 30 min | 1 red snapper<br>1 red porgy                      | 24<br>3       |   | set on Sweet Bank  |
| L-3/14-3 (K)    | 27031.9<br>46624.8<br>W-NW      | E-NE      | 1-3      | 75 to 58    | rolling rock piles, coarse sandy clay                       | 80<br>70 poles  | mackerel | 11:20 a.m. | 1 hr 15 min | 1 red snapper                                     | 22            |   | set on Sweet Bank, lost one pole.  |
| L-3/14-4        | 27032.6<br>46621.8<br>SE        | E-NE      | 1-3      | 113 to 133  | moderate to strong slope mud and sandy mud                  | 118             | mackerel | 11:55 a.m. | 2 hr 40 min | 2 yellowedge grouper<br>1 tilefish                | 31<br>7       |   |  |
| L-3/14-5        | 27040.7<br>46620.9              | E-NE      | 1-3      | 117         | very gentle roll, sandy mud                                 | 60              | mackerel | 12:10 p.m. | 3 hr 35 min | 3 yellowedge grouper                              | 26            | 3 giant snake eels<br>1 moray eel<br>1 hake             |  |
| L-3/14-6 (K)    | 27029.9<br>46625.2<br>W         | E-NE      | 1-3      | 59 to 78    | rolling - rough   | 80<br>70 poles  | mackerel | 1:10 p.m.  | 4 hr 20 min |   |               |   | set on Sweet Bank  |
| L-3/14-7 (K)    | 26721.9<br>46652.0              | E-NE      | 2-4      | 56 to 61    | rock  | 120<br>30 poles | mackerel | 10:20 p.m. | 2 hr 40 min | 1 red porgy                                       | 2             | 1 shark?  | set on edge of bank - circle set. not set right, strong current.         |
| L-3/15-1 (K)    | 26727.6<br>46653.2<br>SE        | SE        | 1-3      | 69 to 98    | down side of bank/sandy mud and clay                        | 112<br>73 poles | mackerel | 6:30 a.m.  | 1 hr 35 min |   |               | 1 moray eel   |  |
| L-3/15-2        | 26743.2<br>46645.4<br>S-SE      | SE        | 1-3      | 118 to 100  | only shal- lower than 112 on one hill. fine sandy clay mud. | 215             | mackerel | 7:20 a.m.  | 2 hr 20 min | 10 yellowedge grouper<br>3 tilefish               | 86<br>18      | 3 Atl. sharp-nose shark<br>2 moray eels                 | broke line, retrieved both ends broke 50 gang-ions. all fish near break. |
| L-3/15-3 (K)    | 26731.0<br>46648.9<br>W-NW      | SE        | 1-3      | 107 to 111  | rolling with irregularities                                 | 84<br>70 poles  | mackerel | 9:15 a.m.  | 3 hr 45 min | 13 yellowedge grouper<br>1 tilefish               | 100<br>17     | 1 Atl. sharp-nose shark                                 | 3 to 5 fish per pole on poles that caught.                               |
| L-3/15-4        | 26749.5<br>46644.7<br>W to W-NW | SE        | 1-3      | 141 to 106  | gentle slope with hill at end. mud                          | 180             | mackerel | 12:40 p.m. | N/A         | 1 yellowedge grouper<br>5 tilefish<br>1 amberjack | 8<br>41<br>16 | 2 Atl. sharp-nose shark<br>2 giant snake eels<br>1 hake |  |

| Lo. line<br>Set No. | Loran C<br>and Set<br>Direction                     | Wind<br>Dir. | Seas<br>Ft. | Depth<br>Fath.   | Bottom<br>Description   | No. Hooks          | Bait                         | Time<br>Set   | Soak<br>Time      | Catch   | Ibs.         | Bycatch  | Comments  |
|---------------------|---|--------------|-------------|------------------|---|--------------------|------------------------------|---------------|-------------------|---|--------------|--|---|
| L-3/15-5            | 26743.1<br>46646.3                                  | SE           | 1-3         | 120<br>to<br>94  | very broken   | 120                | mackerel                     | 2:00<br>p.m.  | 3 hr<br>20<br>min | 2 yellowedge grouper                                  | 13           |  | circle set  |
| L-3/15-6<br>(K)     | 26731.3<br>46648.7<br>E-SE                          | SE           | 1-3         | 123<br>to<br>114 | gentle slope<br>to<br>soft mud  | 100<br>20<br>poles | mackerel<br>and<br>crawfish  | 5:00<br>p.m.  | 2 hr<br>5<br>min  |   |              | 1 sixgill shark<br>1 giant snake<br>eel                                |   |
| L-3/15-7<br>(K)     | 26731.1<br>46650.1                                  | SE           | 2-4         | 105<br>to<br>112 | 1/2 soft mud<br>1/2 clay<br>1/2 hard ?  | 275<br>50<br>poles | mackerel<br>and<br>crawfish  | 6:35<br>p.m.  | 1 hr<br>35<br>min | 1 yellowedge grouper                                  | 25           |  | fish was on clay<br>bottom  |
| L-3/16-1<br>(K)     | 26739.1<br>46642.6                                  | SE           | 1-3         | 119<br>to<br>140 | moderate -<br>weak slope<br>mixed bottom  | 297<br>34<br>poles | mackerel<br>and<br>crawfish  | 7:15<br>a.m.  | 1 hr<br>45<br>min | 8 yellowedge grouper<br>1 tilefish                    | 76<br>3      | 2 sharks?<br>2 giant snake<br>eels                                     | no fish bit<br>crawfish. most<br>fish caught on<br>clay or clay -<br>sand bottom. |
| L-3/16-2<br>(K)     | 26745.8<br>46642.1<br>SE                            | SE           | 1-3         | 135<br>to<br>147 | half sloping;<br>very irregu-<br>lar, half<br>more even -<br>clay and<br>sandy clay | 226<br>41<br>poles | mackerel<br>some<br>crawfish | 8:00<br>a.m.  | 2 hr              | 5 yellowedge grouper<br>4 tilefish                    | 47<br>34     | 3 Atl. sharpnose<br>sharks   | no fish bit<br>crawfish   |
| L-3/16-3<br>(K)     | 26737.1<br>46642.3<br>E-SE to<br>26739.0<br>46641.9 | SE           | 1-3         | 121<br>to<br>131 | gentle slope.<br>sand, clayey<br>sand and<br>muddy sand.                            | 290<br>54<br>poles | mackerel<br>some<br>crawfish | 9:35<br>a.m.  | 1 hr<br>10<br>min | 4 yellowedge grouper<br>1 tilefish                    | 22<br>5      |  | broke line, re-<br>trived both ends<br>lost one pole                              |
| L-3/16-4<br>(K)     | 26744.2<br>46643.3<br>E-SE to<br>26745.3<br>46642.6 | SE           | 1-3         | 111<br>to<br>131 | 1/3 on ir-<br>regular rock.<br>2/3 on sharp<br>mud slope.                           | 209<br>38<br>poles | mackerel                     | 10:20<br>a.m. | 2 hr<br>10<br>min | 7 yellowedge grouper<br>1 spiny grouper<br>1 tilefish | 91<br>6<br>7 | 5 broadband dog-<br>fish<br>1 moray eel                                | broke line, re-<br>trived both ends<br>lost 9 poles                               |
| L-3/16-5<br>(K)     | 26736.4<br>46640.5<br>S to<br>26735.0<br>46639.2    | SE           | 1-3         | 146<br>to<br>159 | moderate<br>slope<br>smooth<br>bottom   | 209<br>38<br>poles | mackerel                     | 12:05<br>p.m. | 4 hr              | 2 tilefish  | 7            | 7 smooth dogfish<br>1 Atl. sharpnose<br>shark                          |   |
| L-3/16-6<br>(K)     | 26742.6<br>46643.3<br>S-SE to<br>26743.6<br>46642.5 | SE           | 1-3         | 106<br>to<br>136 | rough rock<br>moderate drop   | 236<br>43<br>poles | mackerel                     | 3:15<br>p.m.  | 2 hr<br>5<br>min  | 16 yellowedge grouper                                 | 147          | 7 broadband dog-<br>fish<br>1 Atl. sharpnose<br>sharks<br>2 moray eels |   |

| Logline<br>set No. | Loran C<br>and Set<br>Direction                      | Wind<br>Dir. | Seas<br>Ft. | Depth<br>Fath.   | Bottom<br>Description  | No.<br>Hooks       | Bait     | Time<br>Set   | Soak<br>Time      | Catch  | lbs.                | Bycatch   | Comments   |
|--------------------|--|--------------|-------------|------------------|--|--------------------|----------|---------------|-------------------|--|---------------------|---|--|
| 1-3/16-7<br>(K)    | 26744.5<br>46643.5<br>S to<br>26743.7<br>46642.4     | SE           | 1-3         | 112<br>to<br>134 | down side of<br>hill (very<br>irregular)<br>then level                               | 275<br>30<br>poles | mackerel | 5:10<br>p.m.  | 1 hr              | 4 yellowedge grouper   | 44                  | 5 broadband dog-<br>fish<br>1 cusk eel                              |  |
| 1-3/16-8<br>(K)    | 26711.1<br>46671.2<br>NW to<br>26711.7<br>46673.0    | SE           | 1-2         | 62<br>to<br>56   | level with<br>clay mud<br>balls (6 ft.<br>diameter)                                  | 160<br>29<br>poles | mackerel | 11:15<br>p.m. | 2 hr<br>5<br>min  | 4 red snapper<br>1 scamp<br>1 yellowmouth grouper<br>1 snowy grouper     | 26<br>25<br>7<br>4  | 12 sharks?  |  |
| 1-3/17-1<br>(K)    | 26713.7<br>46672.9<br>S-SW to<br>26711.7<br>46672.0  | E-SE         | 1-2         | 55<br>to<br>58   | level with<br>sand bottom<br>and clay mud<br>balls                                   | 198<br>36<br>poles | mackerel | 6:30<br>a.m.  | 1 hr<br>20<br>min | 4 red snapper<br>1 yellowmouth grouper                                   | 26<br>4             |   | lost one pole -<br>untied. fish were<br>all on poles on<br>sand bottom.                |
| 1-3/17-2<br>(K)    | 26736.3<br>46669.9<br>S-SE to<br>26736.4<br>46668.7  | E-SE         | 1-2         | 47<br>to<br>56   | steep drop on<br>edge of rock<br>and coral<br>bank to level<br>clay and sand<br>area | 231<br>42<br>poles | mackerel | 7:00<br>a.m.  | 3 hr              | 3 red snapper<br>3 red porgy<br>3 yellowmouth grouper<br>1 snowy grouper | 11<br>10<br>22<br>6 | 1 tiger shark   | edge of Rezak<br>Bank, almost all<br>fish were on level<br>area of set off<br>the bank |
| 1-3/17-3<br>(K)    | 26730.8<br>46666.0<br>S-SE to<br>26732.4<br>46666.4  | E-SE         | 1-2         | 43<br>to<br>81   | steep drop<br>down jagged<br>face of rock<br>bank then<br>levels out on<br>soft mud. | 203<br>37<br>poles | mackerel | 9:35<br>a.m.  | 1 hr<br>20<br>min | 2 yellowedge grouper<br>1 tilefish                                       | 7<br>16             |   | edge of Sidner<br>Bank, the fish<br>were on the few<br>poles on the clay<br>bottom.    |
| 1-3/17-4<br>(K)    | 26744.0<br>46643.4<br>SE to E<br>in an arc           | E-SE         | 1-3         | 111<br>to<br>133 | gradual slope<br>with low<br>hills.  | N/A                | mackerel | 1:00<br>p.m.  | 1 hr<br>30<br>min | 1 tilefish   | 8                   | 2 moray eels  | broke line, re-<br>trived both ends,<br>lost one pole.                                 |
| 1-3/17-5<br>(K)    | 26746.5<br>46644.2<br>NW to NE<br>26744.9<br>46646.2 | E-SE         | 1-3         | 126<br>to<br>120 | level with<br>one hill (80)<br>clay, sandy<br>clay, some<br>coral                    | 178                | mackerel | 1:55<br>p.m.  | 1 hr<br>55<br>min | 6 yellowedge grouper<br>5 tilefish                                       | 56<br>45            | 2 cuban dogfish<br>2 giant snake<br>eels<br>2 moray eels<br>21 hake |  |
| 1-3/18-1<br>(K)    | 27699.9<br>46607.2<br>S-SW to<br>27694.8<br>46604.7  | S-SE         | 1-2         | 115<br>to<br>122 | gentle rise<br>and fall on<br>very gentle<br>slope                                   | 200                | mackerel | 6:15<br>a.m.  | 3 hr              | 3 yellowedge grouper<br>4 tilefish                                       | 50<br>17            | 1 cuban dogfish<br>1 scorpion fish<br>3 hake                        |  |



| Lon-line Set No. | Loran C and Set Direction   | Wind Dir. | Seas Ft. | Depth Fath. | Bottom Description   | No. Hooks       | Bait     | Time Set   | Soak Time   | Catch   | lbs.           | Bycatch   | Comments   |
|------------------|---|-----------|----------|-------------|--|-----------------|----------|------------|-------------|---|----------------|---|--|
| 1-3/18-2 (K)     | 27689.6<br>46605.2<br>SW to<br>27684.0<br>46604.8                                 | S-SE      | 1-2      | 152 to 217  | half steep to slope, half gentle mud slope, vary soft whole set. | 275<br>50 poles | mackerel | 6:30 a.m.  | 1 hr 45 min |   |                | 2 cuban dogfish<br>1 cow shark                                | set too deep<br>bottom too soft  |
| 1-3/18-3 (K)     | 27691.4<br>46607.4<br>SE to<br>27692.2<br>46604.8                                 | S-SE      | 1-2      | 136 to 131  | edge of sharp to drop, very soft mud                             | 280<br>51 poles | mackerel | 9:10 a.m.  | N/A         |   |                | 3 cuban dogfish<br>3 hake                                     | cross-slope set<br>bottom too soft   |
| 1-3/18-4         | 27695.0<br>46605.6<br>U-shaped to<br>27695.8<br>46607.9                           | E-SE      | 1-3      | 120 to 168  | gentle rise and fall, cross-slope set                            | 210             | mackerel | 10:40 a.m. | 4 hr 10 min | 3 yellowedge grouper<br>3 tilefish                    | 55<br>12       | 2 dogfish?<br>5 gulf hake                                     | rudder jammed in reverse, while fixing, vessel drag this line across 1-3/18-5 tangling both, lost half this set and all of 3/18-5, retrieved all gear. |
| 1-3/18-5 (K)     | 27699.7<br>46607.4<br>S to<br>27695.1<br>46606.0                                  | E-SE      | 1-3      | 115 to 118  | gentle rise and fall.  | 386<br>72 poles | mackerel | 1:00 p.m.  |             | lost set. see 1-3/18-4. Retrieved gear, broke 2 poles |                |   |  |
| 1-4/2-1          | Returned to port to repair<br>27692.3<br>46606.2<br>E-NE to<br>27704.8<br>46606.7 | E-SE      | 3-5      | 128 to 112  | rudder and longline winch, moderate slope to level               | 260             | mackerel | 5:35 a.m.  | 2 hr 5 min  | 8 yellowedge grouper<br>1 tilefish                    | 92<br>2        | 20 hake<br>1 sixgill shark<br>3 dogfish<br>1 shark?<br>3 eels | buoy line broke.<br>lost 52 hooks.   |
| 1-4/2-2          | 27704.3<br>46605.9<br>W-NW to<br>27694.9<br>46605.2                               | E-SE      | 3-5      | 113 to 119  | level to rolling   | 272             | mackerel | 6:05 a.m.  | 3 hr 30 min | 7 yellowedge grouper<br>1 tilefish<br>1 amberjack     | 142<br>2<br>35 | 6 hake<br>2 sharks?<br>2 moray eels<br>1 scorpion fish        | heavy wind and rain delayed pickup   |

| Longline Set No. | Loran C and Set Direction                                   | Wind Dir. | Seas Ft. | Depth Fath.      | Bottom Description                 | No. Hooks          | Bait     | Time Set     | Soak Time         | Catch                                    | lbs.      | Bycatch   | Comments  |
|------------------|---|-----------|----------|------------------|------------------------------------|--------------------|----------|--------------|-------------------|--|-----------|---|---|
| L-4/2-3          | 27691.1<br>46604.1<br>E-NE to E<br>to<br>27699.4<br>46605.2 | E-SE      | 3-5      | 139<br>to<br>118 | gradual<br>slope                   | 200                | mackerel | 9:30<br>a.m. | 3 hr<br>25<br>min | 1 yellowedge grouper<br>2 tilefish       | 8<br>31   | 16 hake<br>4 sharks?<br>2 moray eels<br>1 giant snake<br>eel                    |   |
| L-4/2-4          | 27698.7<br>46605.9<br>E-SE to<br>27700.6<br>46605.9         | E-SE      | 3-5      | 116<br>to<br>122 | cross slope<br>set<br>mud          | 272                | mackerel | 2:16         | 2 hr<br>45<br>min | 3 yellowedge grouper<br>2 tilefish       | 54<br>20  | 9 hake<br>5 sharks?<br>3 moray eels<br>2 giant snake<br>eels<br>1 scorpion fish | rudder jammed<br>backwards and<br>line had to be<br>dropped. after<br>repairs line was<br>hung. lost at<br>least 4 "float-<br>ers". |
| L-4/2-5<br>(K)   | 27708.4<br>46604.3<br>N-NE to N<br>to<br>27709.8<br>46607.2 | E-SE      | 3-5      | 111              | flat-rocky                         | 108<br>18<br>poles | mackerel | 2:14<br>p.m. | 2 hr<br>35<br>min | 2 yellowedge grouper                     | 32        | 2 hake<br>2 sharks?   |   |
| L-4/3-1<br>(K)   | 26948.0<br>46646.5<br>NW to<br>26947.8<br>46647.2           | E         | 3-5      | 83<br>to<br>79   | flat,<br>sandy-clay                | 108<br>18<br>poles | mackerel | 5:42<br>a.m. | 1 hr<br>20<br>min | 7 yellowedge grouper<br>1 warsaw grouper | 77<br>72  | 2 sharks  |   |
| L-4/3-2          | 26952.0<br>46646.8<br>SE to<br>26951.0<br>46644.0           | E         | 3-5      | 82<br>to<br>90   | slope                              | 262                | mackerel | 5:55<br>a.m. | 2 hr<br>45<br>min | 27 yellowedge grouper<br>4 tilefish      | 152<br>36 |   |   |
| L-4/3-3<br>(K)   | 26949.4<br>46647.6<br>NW to<br>26949.1<br>46648.4           | E         | 3-5      | 73<br>to<br>68   | rough or rock<br>coral             | 183<br>31<br>poles | mackerel | 7:42<br>a.m. | 2 hr              | 4 yellowedge grouper                     | 31        |   |   |
| L-4/3-4<br>(K)   | 26952.4<br>46646.4<br>NW to<br>26951.5<br>46647.7           | E         | 3-5      | 74<br>to<br>78   | level, one<br>hill<br>rough bottom | 195<br>33<br>poles | mackerel | 9:10<br>a.m. | 1 hr<br>25<br>min | 9 yellowedge grouper                     | 44        |   |   |

| Longline Set No. | Loran C and Set Direction                           | Wind Dir. | Seas Ft. | Depth Fath. | Bottom Description                              | No. Hooks       | Bait     | Time Set   | Soak Time   | Catch  | lbs.          | Bycatch                     | Comments                                  |
|------------------|---|-----------|----------|-------------|---|-----------------|----------|------------|-------------|--|---------------|-----------------------------|---|
| L-4/3-5 (K)      | 26956.5<br>46647.5<br>N-NW to<br>26956.2<br>46648.8 | E         | 3-5      | 80 to 73    | gradual roll fairly rough bottom, very soft mud | 232<br>40 poles | mackerel | 10:15 a.m. | 1 hr 30 min |  |               | 1 giant snake eel           |   |
| L-4/3-6 (K)      | 26941.8<br>46647.4<br>NW to<br>26945.3<br>46648.5   | E         | 3-5      | 78 to 72    | rough, rising slope                             | 209<br>36 poles | mackerel | 11:24 a.m. | 1 hr 30 min | no catch   |               |                             |   |
| L-4/3-7 (K)      | 26946.9<br>46645.6<br>NW to<br>26945.0<br>46646.8   | E         | 3-5      | 85 to 80    | flat, rough bottom                              | 151<br>26 poles | mackerel | 12:44 p.m. | 1 hr        | 4 yellowedge grouper                             | 55            | 1 moray eel                 |   |
| L-4/3-8 (K)      | 26943.8<br>46645.6<br>NW to<br>26944.6<br>46646.7   | E         | 3-5      | 86 to 82    | gentle roll rough bottom                        | 222<br>39 poles | mackerel | 2:18 p.m.  | 1 hr        | 2 yellowedge grouper                             | 21            | 4 hake<br>1 giant snake eel |   |
| L-4/3-9 (K)      | 26948.6<br>46645.9<br>N to<br>26950.7<br>46647.3    | E         | 3-5      | 84 to 81    | almost flat                                     | 148<br>26 poles | mackerel | 2:34 p.m.  | 1 hr 15 min | 11 yellowedge grouper                            | 42            |                             | Loran readings may not be exact. problems |
| L-4/4-1 (K)      | 26926.4<br>46639.9<br>N-NE to<br>26929.6<br>46640.8 | N-NW      | 3-5      | 95 to 99    | rolling hills 4 to 6 fathoms tail               | 202<br>36 poles | mackerel | 5:45 a.m.  | 45 min      | 3 yellowedge grouper<br>2 tilefish<br>1 wanchman | 14<br>10<br>2 |                             |   |
| L-4/4-2 (K)      | 26948.0<br>46646.3<br>NW to<br>26947.8<br>46647.2   | N-NW      | 3-5      | 83 to 79    | gradual slope                                   | 185<br>33 poles | mackerel | 7:25 a.m.  | 1 hr        | no catch   |               |                             |   |

| Longline Set No. | Loran C and Set Direction                         | Wind Dir. | Seas Ft. | Depth Fath.      | Bottom Description                                  | No. Hooks          | Bait     | Time Set      | Soak Time         | Catch  | lbs.                | Bycatch                           | Comments  |
|------------------|---|-----------|----------|------------------|---|--------------------|----------|---------------|-------------------|--|---------------------|-----------------------------------|---|
| L-4/4-3          | 26952.5<br>46646.9<br>SE to<br>26951.9<br>46644.9 | N-NW      | 3-5      | 81<br>to<br>86   | gradual slope<br>with 10<br>fathom hill<br>midway   | 208                | mackerel | 7:40<br>a.m.  | 1 hr              | 14 yellowedge grouper<br>2 tilefish<br>1 amberjack<br>1 wenchman | 99<br>11<br>21<br>2 |                                   |   |
| L-4/4-4          | 26953.7<br>46644.9<br>N to<br>26956.7<br>46647.9  | N-NW      | 3-5      | 86<br>to<br>79   | gradual slope<br>small hills                        | 233                | mackerel | 9:53<br>a.m.  | 1 hr<br>5<br>min  |  |                     | 9 giant snake<br>eels             |   |
| L-4/4-5          | 26960.7<br>46647.8<br>S to<br>26958.8<br>46645.4  | N-NW      | 3-5      | 78<br>to<br>85   | gentle slope<br>small hills                         | 194                | mackerel | 10:21<br>a.m. | 2 hr<br>10<br>min |  |                     | 1 giant snake<br>eel<br>1 shark?  | wind and seas<br>picked up. belt<br>drive on winch<br>causing trouble.<br>stopped fishing<br>and moved west-<br>ward. |
| L-4/5-1          | 26829.5<br>46646.5<br>NW to<br>26826.9<br>46648.6 | N-NW      | 6-8      | 130<br>to<br>109 | upslope<br>rolling hills<br>sandy clay              | 200                | mackerel | 8:00<br>a.m.  | 40<br>min         | 8 yellowedge grouper<br>1 snowy grouper<br>3 tilefish            | 82<br>5<br>21       |                                   |   |
| L-4/5-2          | 26825.0<br>46646.3<br>N to<br>26825.4<br>46648.7  | N-NW      | 6-8      | 132<br>to<br>108 | cross-slope<br>set gentle<br>slope with<br>one hill | 233                | mackerel | 9:58<br>a.m.  | 45<br>min         | 6 yellowedge grouper<br>1 tilefish                               | 59<br>5             | 1 hake                            | longline winch<br>malfunctioning<br>badly. burned<br>up several sets<br>of belts. down<br>to last set.                |
| L-4/5-3<br>(K)   | 26827.7<br>46648.7<br>SE to<br>26828.9<br>46648.2 | N-NW      | 6-8      | 108<br>to<br>111 | cross-slope<br>set sandy<br>clay                    | 160<br>79<br>poles | mackerel | 10:17<br>a.m. | 2 hr              | 1 yellowedge grouper<br>1 snowy grouper<br>1 warsaw grouper      | 10<br>15<br>42      | 1 moray eel                       |   |
| L-4/5-4          | 26824.2<br>46647.3<br>E to<br>26829.0<br>46647.5  | N-NW      | 6-8      | 122<br>to<br>114 | gentle slope  | 265                | mackerel | 11:58<br>a.m. | 1 hr<br>25<br>min | 4 yellowedge grouper<br>1 warsaw grouper<br>4 tilefish           | 47<br>34<br>38      | 1 dogfish<br>1 giant snake<br>eel | gear-box on<br>winch broke a<br>seal. repaired.<br>lost one yellow-<br>edge and 1 tile-<br>fish "floater".            |

| Longline Set No. | Loran C and Set Direction                         | Wind Dir. Ft. | Seas Ft. | Depth Fath.      | Bottom Description                            | No. Hooks          | Bait     | Time Set     | Soak Time         | Catch                              | lbs.    | Bycatch                             | Comments |
|------------------|---|---------------|----------|------------------|---|--------------------|----------|--------------|-------------------|------------------------------------|---------|-------------------------------------|----------|
| 1-4/5-5 (K)      | 26826.2<br>46648.0<br>SW to<br>26820.2<br>46647.9 | N-NW          | 3-5      | 110<br>to<br>116 | almost flat                                   | 178<br>33<br>poles | mackerel | 1:08<br>p.m. | 2 hr              | 1 warsaw grouper                   | 30      |                                     |          |
| (K)              | 46648.2<br>E to<br>26831.7<br>46647.9             |               |          | to<br>110        | sandy clay                                    | 24<br>poles        |          | p.m.         |                   | 1 tilefish                         |         |                                     |          |
| 1-4/5-7 (K)      | 26824.1<br>46647.6<br>SE to<br>26827.1<br>46648.1 | N-NW          | 3-5      | 115<br>to<br>123 | rolling hills                                 | 191<br>36<br>poles | mackerel | 3:35<br>p.m. | 1 hr              | 1 yellowedge grouper               | 9       | 1 hake                              |          |
| 1-4/5-8 (K)      | 26833.0<br>46648.0<br>NW to<br>26832.4<br>46649.1 | N-NW          | 3-5      | 105<br>to<br>100 | gradual slope<br>to<br>sandy clay             | 140<br>27<br>poles | mackerel | 4:16<br>p.m. | 1 hr              | 6 yellowedge grouper<br>1 tilefish | 37<br>9 |                                     |          |
| 1-4/5-9 (K)      | 26831.8<br>46651.2<br>N to<br>26831.7<br>46651.8  | N-NW          | 3-5      | 90               | hilly   | 140<br>27<br>poles | mackerel | 5:38<br>p.m. | 45<br>min         | 1 yellowedge grouper               | 8       |                                     |          |
| 1-4/6-1 (K)      | 26833.3<br>46653.6<br>SE to<br>26834.5<br>46652.9 | N-NE          | 1-2      | 69<br>to<br>88   | small hill<br>to<br>steep slope               | 128<br>25<br>poles | mackerel | 3:29<br>a.m. | 50<br>min         | 1 yellowedge grouper               | 7       | 2 hake                              |          |
| 1-4/6-2 (K)      | 26828.7<br>46651.4<br>SW to<br>26827.8<br>46650.2 | N-NE          | 1-2      | 90<br>to<br>94   | gradual slope<br>to<br>sandy clay<br>and rock | 195<br>39<br>poles | mackerel | 3:43<br>a.m. | 1 hr<br>35<br>min |                                    |         | 2 moray eels<br>2 hake<br>1 dogfish |          |

| ouglne<br>et No. | Loran C<br>and Set<br>Direction                     | Wind<br>Dir. | Seas<br>Ft. | Depth<br>Fath.   | Bottom<br>Description                         | No.<br>Hooks       | Bait     | Time<br>Set   | Soak<br>Time      | Catch   | lbs.           | Bycatch                            | Comments  |
|------------------|---|--------------|-------------|------------------|---|--------------------|----------|---------------|-------------------|---|----------------|------------------------------------|---|
| L-4/6-3<br>(K)   | 26827.8<br>46647.6<br>SE to<br>26829.4<br>46646.4   | N-NE         | 1-2         | 113<br>to<br>133 | sloping<br>sandy clay                         | 150<br>30<br>poles | mackerel | 5:02<br>a.m.  | 1 hr              |   |                | 3 dogfish<br>1 giant snake<br>eel  |   |
| L-4/6-4<br>(K)   | 26742.0<br>46646.5<br>SE to<br>26742.4<br>46645.5   | N-NE         | 1-2         | 94<br>to<br>112  | cross-slope<br>set. gentle<br>slope           | 130<br>26<br>poles | mackerel | 7:36<br>a.m.  | 40<br>min         | no catch  |                |                                    |   |
| L-4/6-5          | 26743.2<br>46643.7<br>SE to<br>26748.2<br>46642.1   | N-NE         | 1-2         | 106<br>to<br>138 | gradual<br>slope, coral<br>or rock<br>patches | 210                | mackerel | 7:56<br>a.m.  | 1 hr<br>30<br>min | 2 yellowedge grouper<br>1 snowy grouper<br>1 tilefish | 17<br>10<br>13 |                                    | gear and belt<br>problems on winch.<br>longline retrieved<br>with trynet winch. |
| L-4/6-6<br>(K)   | 26745.5<br>46643.8<br>NW to<br>26744.3<br>46644.0   | N-NE         | 1-2         | 137<br>to<br>124 | gradual<br>slope                              | 120<br>24<br>poles | mackerel | 8:55<br>a.m.  | 1 hr<br>45<br>min | 1 warsaw grouper                                      | 35             |                                    |   |
| L-4/6-7<br>(K)   | 26742.4<br>46645.3<br>SE to<br>26744.2<br>46644.9   | N-NE         | 1-2         | 110<br>to<br>122 | smooth<br>slope                               | 113<br>24<br>poles | mackerel | 11:01<br>a.m. | 35<br>min         | no catch  |                |                                    |   |
| L-4/6-8<br>(K)   | 26712.6<br>46653.1<br>N-NE to<br>26714.8<br>46654.2 | N-NE         | 1-2         | 84<br>to<br>76   | gradual<br>slope,<br>smooth                   | 147<br>20<br>poles | mackerel | 12:45<br>p.m. | 45<br>min         | no catch  |                |                                    |   |
| L-4/6-9<br>(K)   | 26718.1<br>46655.3<br>N-NE to<br>26722.0<br>46655.8 | N-NE         | 1-2         | 62<br>to<br>54   | hills on a<br>gradual rise                    | 191<br>39<br>poles | mackerel | 12:59<br>p.m. | 1 hr<br>20<br>min | 1 warsaw grouper                                      | 24             |                                    |   |
| L-4/6-10<br>(K)  | N/A   | S-SE         | 2-4         | 98<br>to<br>120  | smooth<br>slope                               | 130<br>27<br>poles | mackerel | 6:57<br>p.m.  | 50<br>min         |   |                | 1 hake<br>1 moray eel<br>1 dogfish |   |

| Longline Set No. | Loran C and Set Direction                           | Wind Dir. | Seas Ft. | Depth Fath. | Bottom Description                   | No. Hooks          | Bait     | Time Sat  | Soak Time   | Catch                                 | lbs.   | Bycatch                            | Comments  |
|------------------|---|-----------|----------|-------------|--------------------------------------|--------------------|----------|-----------|-------------|---------------------------------------|--------|------------------------------------|---|
| 1-4/6-11 (K)     | 26338.4<br>46696.3                                  | SE        | 2-4      | 58 to 62    |                                      | 96<br>70<br>poles  | mackerel | 1:45 p.m. | 7 hr        | 1 red snapper                         | 6      | 1 moray eel<br>3 sharks?<br>1 hake | tried to set on a pipeline  |
| 1-4/7-1 (K)      | 26348.1<br>46695.1<br>N-NE<br>26351.9<br>46696.1    | SE        | 2-4      | 62 to 60    | level, smooth with a few coral heads | 139<br>79<br>poles | mackerel | 7:58 a.m. | 45 min      | 1 yellowedge grouper<br>1 wenchman    | 6<br>2 | 1 rock sea bass                    |   |
| 1-4/7-2 (K)      | 26354.8<br>46693.8<br>SW to<br>26351.9<br>46693.0   | SE        | 2-4      | 63 to 64    | level, smooth                        | 103<br>77<br>poles | mackerel | 8:19 a.m. | 1 hr 15 min | 1 yellowedge grouper                  | 6      |                                    |   |
| 1-4/7-3 (K)      | 26221.4<br>46654.8<br>NW to<br>26219.3<br>46655.6   | SE        | 3-5      | 84 to 107   | gentle slope to level                | 132<br>78<br>poles | mackerel | 1:03 p.m. | 45 min      | no catch                              |        |                                    | wind and seas becoming very heavy. lay to rest of day.                                |
| 1-4/8-1 (K)      | 26021.8<br>46679.5<br>E-SE to<br>26023.4<br>46679.4 | E         | 3-5      | 96 to 92    | gradual slope                        | 106<br>73<br>poles | mackerel | 5:25 a.m. | 1 hr        | 1 yellowedge grouper                  | 10     |                                    | near East Flower Garden. winch broke down. replace belt drive with gear and sprocket. |
| 1-4/9-1 (K)      | 25992.4<br>46702.5<br>NE to<br>25995.9<br>46703.1   | E         | 2-4      | 72 to 66    | rolling with gentle rise             | 92<br>70<br>poles  | mackerel | 5:21 a.m. | 55 min      |                                       |        | 1 hake                             | on East Flower Garden.  |
| 1-4/9-2 (K)      | 25988.5<br>46702.2<br>SE to<br>25989.1<br>46701.4   | E         | 2-4      | 47 to 68    | rolling hills some coral             | 123<br>77<br>poles | mackerel | 5:33 a.m. | 1 hr 30 min | 1 yellowedge grouper<br>3 red snapper | 4<br>5 |                                    |   |

| Longline Set No. | Loran C and Set Direction                           | Wind Dir. | Seas Ft. | Depth Fath. | Bottom Description          | No. Hooks       | Bait     | Time Set   | Soak Time   | Catch                              | lbs.    | Bycatch                           | Comments  |
|------------------|---|-----------|----------|-------------|-----------------------------|-----------------|----------|------------|-------------|------------------------------------|---------|-----------------------------------|---|
| 1-4/9-3 (K)      | 25988.5<br>46702.8<br>W to<br>25984.0<br>46702.9    | E         | 2-4      | 38 to 23    | rough, coral or rock        | 90<br>70 poles  | mackerel | 6:34 a.m.  | 1 hr 45 min | 2 red snapper                      | 21      |                                   | line broke, lost some poles. winch drive broke for good on remaining sets line retrieved with try-net power-head. |
| 1-4/9-4 (K)      | 25986.7<br>46703.0<br>W to<br>25984.8<br>46703.1    | E-SE      | 2-4      | 30 to 27    | dense coral                 | 110<br>75 poles | mackerel | 12:01 p.m. | 45 min      | no catch                           |         |                                   | broke line. retrieved other end. lost one pole.   |
| 1-4/9-5 (K)      | 25982.0<br>46703.0<br>SW to<br>25979.4<br>46702.7   | E-SE      | 2-4      | 30 to 28    | gradual slope coral or rock | 101<br>73 poles | mackerel | 12:12 p.m. | 1 hr 10 min | no catch                           |         |                                   | lost 2 poles bad snaps  |
| 1-4/9-6 (K)      | 25867.0<br>46692.8<br>N to<br>25867.0<br>46693.4    | SE        | 1-3      | 91 to 85    | gentle rolling hills        | 120<br>78 poles | mackerel | 3:53 p.m.  | 40 min      |                                    |         | 1 eel                             |   |
| 1-4/9-7 (K)      | 25775.5<br>46689.9<br>NE to<br>25776.9<br>46690.0   | S         | 1-3      | 100 to 106  | edge of steep slope         | 129<br>30 poles | mackerel | 6:38 p.m.  | 1 hr        | 7 yellowedge grouper<br>1 tilefish | 24<br>3 | 1 bearded brotula<br>2 morsy eels |   |
| 1-4/10-1 (K)     | 25773.9<br>46687.8<br>NE to<br>25776.9<br>46688.3   | SE        | 3-5      | 113 to 109  | gentle slope                | 134<br>32 poles | mackerel | 7:32 a.m.  | 1 hr 30 min | 2 tilefish                         | 5       | 1 giant snake eel                 |   |
| 1-4/10-2 (K)     | 25775.5<br>46689.2<br>W-NW to<br>25774.9<br>46689.8 | SE        | 3-5      | 105 to 97   | gentle slope, some coral    | 78<br>19 poles  | mackerel | 7:56 a.m.  | 1 hr 50 min | 2 yellowedge grouper<br>3 tilefish | 9<br>8  |                                   |   |



APPENDIX III  
LENGTHS AND WEIGHTS OF FISHES

## LENGTHS AND WEIGHTS OF FISHES

All salable fish taken during the course of this investigation were weighed on a scale accurate to the tenth of a pound (44.8 grams). Each fish's length was also recorded in millimeters. The lengths and weights are listed by set number. Pertinent information on each set is found in Appendix II. No weights are available for fishes taken on sets L-3/1-1 through L-3/3-5.

| <u>Species</u>     | <u>L-3/1-1</u><br><u>length</u> | <u>weight</u> |
|--------------------|---------------------------------|---------------|
| red snapper        | 850                             | -             |
| " "                | 850                             | -             |
| " "                | 856                             | -             |
| " "                | 821                             | -             |
| yellowedge grouper | 904                             | -             |
| " "                | 903                             | -             |
|                    |                                 |               |
| warsaw grouper     | L-3/2-2<br>1556                 | -             |
|                    |                                 |               |
| yellowedge grouper | L-3/2-3<br>987                  | -             |
| " "                | 874                             | -             |
| " "                | 816                             | -             |
| " "                | 965                             | -             |
|                    |                                 |               |
| yellowedge grouper | L-3/3-4<br>902                  | -             |
| warsaw grouper     | 1010                            | -             |
| red porgy          | 414                             | -             |
| greater amberjack  | 881                             | -             |
|                    |                                 |               |
| warsaw grouper     | L-3/3-5<br>1180                 | -             |
| " "                | 1021                            | -             |
| red porgy          | 405                             | -             |
|                    |                                 |               |
| yellowedge grouper | L-3/9-1<br>741                  | 13.5          |
| " "                | 403                             | 1.5           |
| " "                | 430                             | 2.0           |
| " "                | 385                             | 1.3           |
| " "                | 583                             | 5.4           |
| " "                | 564                             | 4.8           |
| " "                | 591                             | 5.5           |
|                    |                                 |               |
| snowy grouper      | L-3/9-2<br>586                  | 6.1           |
| vermillion snapper | 393                             | 2.0           |
| red porgy          | 326                             | 1.5           |
| amberjack          | 990                             | 28.8          |
|                    |                                 |               |
| yellowedge grouper | L-3/9-4<br>986                  | 29.5          |
| " "                | 854                             | 18.8          |
| " "                | 561                             | 6.4           |
| " "                | 687                             | 9.2           |

|                    |          |      |
|--------------------|----------|------|
| yellowedge grouper | 666      | 7.9  |
| " "                | 738      | 10.4 |
| " "                | 720      | 10.5 |
| " "                | 530      | 5.2  |
| warsaw grouper     | 902      | 21.4 |
| snowy grouper      | 974      | 25.4 |
| golden tilefish    | 517      | 3.5  |
| " "                | 396      | 1.5  |
| " "                | 401      | 1.7  |
|                    | L-3/9-5  |      |
| yellowedge grouper | 788      | 13.8 |
| " "                | 791      | 14.6 |
| " "                | 722      | 10.8 |
| " "                | 789      | 14.8 |
| " "                | 861      | 16.9 |
| " "                | 542      | 4.1  |
| " "                | 781      | 14.3 |
| " "                | 964      | 29.2 |
| " "                | 757      | 12.3 |
| " "                | 789      | 14.7 |
| " "                | 895      | 24.8 |
| " "                | 874      | 21.2 |
| snowy grouper      | 868      | 13.4 |
| golden tilefish    | 639      | 7.4  |
|                    | L-3/9-6  |      |
| golden tilefish    | 546      | 4.6  |
| " "                | 418      | 1.7  |
|                    | L-3/9-7  |      |
| yellowedge grouper | 795      | 16.4 |
| " "                | 743      | 13.0 |
| " "                | 660      | 8.3  |
| " "                | 774      | 14.6 |
| " "                | 727      | 11.9 |
| " "                | 655      | 8.6  |
| " "                | 852      | 17.9 |
| golden tilefish    | 440      | 2.4  |
| " "                | 777      | 14.6 |
| " "                | 665      | 8.7  |
| " "                | 494      | 3.0  |
|                    | L-3/10-2 |      |
| yellowedge grouper | 603      | 6.8  |
|                    | L-3/10-4 |      |
| yellowedge grouper | 664      | 7.2  |
| " "                | 677      | 7.5  |
|                    | L-3/10-6 |      |
| warsaw grouper     | 1237     | 46.9 |
|                    | L-3/11-1 |      |
| yellowedge grouper | 827      | 15.5 |
| " "                | 822      | 14.3 |
| " "                | 751      | 12.3 |
| golden tilefish    | 700      | 9.0  |

|                    | L-3/11-2 |      |
|--------------------|----------|------|
| yellowedge grouper | 766      | 12.3 |
| " "                | 715      | 10.0 |
| " "                | 647      | 7.5  |
| " "                | 623      | 6.8  |
| " "                | 751      | 10.6 |
| " "                | 695      | 10.3 |
| " "                | 658      | 7.5  |
| " "                | 758      | 10.5 |
| " "                | 746      | 14.8 |
| " "                | 866      | 19.6 |
| " "                | 725      | 9.0  |
| " "                | 805      | 13.7 |
| golden tilefish    | 476      | 2.9  |
| " "                | 744      | 11.0 |
| " "                | 669      | 8.3  |
| " "                | 736      | 10.6 |
| " "                | 673      | 4.5  |
| queen snapper      | 776      | 14.0 |
| " "                | 660      | 8.9  |
| wenchman           | 405      | 1.9  |
| " "                | 390      | 1.8  |

|                    | L-3/11-3 |      |
|--------------------|----------|------|
| yellowedge grouper | 775      | 12.3 |
| " "                | 552      | 4.4  |
| " "                | 510      | 4.7  |
| golden tilefish    | 557      | 3.9  |
| " "                | 743      | 11.0 |

|                    | L-3/11-4 |      |
|--------------------|----------|------|
| yellowedge grouper | 658      | 7.1  |
| " "                | 624      | 6.2  |
| " "                | 640      | 7.1  |
| " "                | 626      | 6.8  |
| " "                | 630      | 6.6  |
| " "                | 769      | 13.4 |
| " "                | 661      | 7.5  |
| " "                | 785      | 11.5 |
| " "                | 751      | 8.8  |
| " "                | 700      | 8.5  |
| " "                | 730      | 9.9  |
| " "                | 593      | 5.6  |
| " "                | 714      | 9.4  |
| " "                | 685      | 8.5  |
| " "                | 710      | 9.0  |
| " "                | 611      | 7.2  |
| " "                | 656      | 8.1  |
| " "                | 572      | 5.7  |
| " "                | 650      | 8.0  |
| " "                | 714      | 9.8  |
| " "                | 757      | 11.4 |
| " "                | 662      | 8.2  |
| " "                | 626      | 7.5  |
| golden tilefish    | 615      | 6.2  |
| " "                | 880      | 18.2 |
| " "                | 580      | 5.1  |
| " "                | 607      | 5.3  |

|                    |          |      |
|--------------------|----------|------|
| golden tilefish    | 582      | 4.7  |
| " "                | 556      | 3.3  |
| " "                | 611      | 5.6  |
|                    | L-3/11-5 |      |
| yellowedge grouper | 742      | 12.6 |
| " "                | 766      | 12.7 |
| " "                | 620      | 7.5  |
| " "                | 632      | 7.3  |
| " "                | 797      | 14.3 |
| snowy grouper      | 953      | 25.5 |
| golden tilefish    | 701      | 10.0 |
| " "                | 555      | 4.2  |
| " "                | 574      | 4.7  |
| " "                | 494      | 3.2  |
| " "                | 481      | 2.5  |
| " "                | 558      | 4.3  |
| " "                | 557      | 4.7  |
| " "                | 597      | 5.6  |
| " "                | 674      | 7.1  |
| " "                | 886      | 22.4 |
| " "                | 635      | 7.0  |
| " "                | 699      | 9.2  |
|                    | L-3/11-6 |      |
| yellowedge grouper | 769      | 11.6 |
| golden tilefish    | 615      | 6.2  |
| " "                | 580      | 5.3  |
| " "                | 528      | 3.6  |
| " "                | 467      | 2.5  |
| " "                | 645      | 6.4  |
| " "                | 518      | 3.6  |
| " "                | 801      | 13.9 |
| " "                | 532      | 4.0  |
| " "                | 494      | 2.4  |
|                    | L-3/11-7 |      |
| yellowedge grouper | 650      | 6.4  |
| " "                | 730      | 11.2 |
|                    | L-3/12-1 |      |
| yellowedge grouper | 621      | 7.2  |
| " "                | 782      | 13.8 |
| " "                | 649      | 7.9  |
| " "                | 651      | 7.6  |
| " "                | 798      | 13.3 |
| golden tilefish    | 572      | 4.9  |
| " "                | 541      | 4.0  |
| " "                | 891      | 22.4 |
| " "                | 560      | 4.2  |
| " "                | 630      | 5.2  |
| " "                | 583      | 5.1  |
|                    | L-3/12-2 |      |
| yellowedge grouper | 616      | 5.3  |
| " "                | 692      | 9.4  |
| " "                | 399      | 1.4  |
| golden tilefish    | 606      | 5.4  |

|                   |     |      |
|-------------------|-----|------|
| golden tilefish   | 554 | 4.1  |
| " "               | 458 | 1.8  |
| " "               | 500 | 2.8  |
| " "               | 821 | 15.1 |
| " "               | 496 | 2.5  |
| " "               | 733 | 9.7  |
| " "               | 655 | 6.4  |
| " "               | 548 | 3.6  |
| " "               | 859 | 10.2 |
| " "               | 616 | 5.4  |
| vermilion snapper | 470 | 4.2  |

|                 |          |      |
|-----------------|----------|------|
|                 | L-3/12-3 |      |
| golden tilefish | 880      | 18.5 |
| " "             | 551      | 4.2  |
| " "             | 854      | 10.2 |
| " "             | 685      | 7.8  |
| " "             | 540      | 3.5  |

|                 |          |      |
|-----------------|----------|------|
|                 | L-3/12-4 |      |
| golden tilefish | 604      | 5.0  |
| " "             | 779      | 13.0 |
| " "             | 685      | 8.5  |
| " "             | 649      | 7.4  |
| " "             | 858      | 19.4 |
| " "             | 527      | 3.4  |
| " "             | 629      | 6.1  |

|                    |          |      |
|--------------------|----------|------|
|                    | L-3/13-1 |      |
| yellowedge grouper | 676      | 8.3  |
| " "                | 672      | 8.7  |
| " "                | 698      | 9.8  |
| " "                | 700      | 9.2  |
| " "                | 722      | 10.2 |
| " "                | 805      | 13.4 |
| golden tilefish    | 478      | 5.1  |

|                    |          |     |
|--------------------|----------|-----|
|                    | L-3/13-2 |     |
| yellowedge grouper | 675      | 7.1 |
| golden tilefish    | 607      | 5.7 |
| " "                | 485      | 3.0 |
| " "                | 529      | 3.2 |
| " "                | 589      | 5.6 |
| " "                | 638      | 6.8 |
| " "                | 469      | 2.1 |
| " "                | 585      | 5.1 |
| " "                | 502      | 2.9 |
| " "                | 729      | 8.6 |
| " "                | 569      | 3.6 |
| " "                | 506      | 2.8 |
| " "                | 586      | 5.5 |
| " "                | 599      | 5.7 |
| " "                | 562      | 4.2 |
| " "                | 519      | 3.5 |
| " "                | 622      | 6.1 |
| " "                | 532      | 3.8 |
| " "                | 538      | 3.5 |
| " "                | 588      | 5.9 |

|                    |              |      |
|--------------------|--------------|------|
| golden tilefish    | 486          | 2.9  |
| " "                | 619          | 5.6  |
| " "                | 564          | 5.1  |
|                    | L-3/13-3     |      |
| yellowedge grouper | 769          | 13.0 |
| " "                | 725          | 10.0 |
| golden tilefish    | 723          | 9.3  |
| " "                | 600          | 5.5  |
|                    | L-3/13-4     |      |
| yellowedge grouper | 614          | 5.5  |
| " "                | 633          | 6.1  |
| " "                | 686          | 8.7  |
| " "                | 604          | 5.3  |
| " "                | 622          | 5.9  |
| " "                | 583          | 6.0  |
| " "                | 513          | 6.3  |
| " "                | 816          | 14.2 |
| " "                | 763          | 10.8 |
| " "                | 686          | 7.3  |
| " "                | 657          | 7.1  |
| " "                | 693          | 9.0  |
| " "                | 758          | 11.5 |
| " "                | 779          | 13.5 |
| " "                | 769          | 12.2 |
| golden tilefish    | 639          | 5.6  |
| " "                | 640          | 6.3  |
| " "                | 627          | 6.1  |
| " "                | 615          | 5.8  |
| " "                | 597          | 5.3  |
| " "                | 926          | 24.2 |
| " "                | 581          | 5.2  |
| " "                | 466          | 2.4  |
| " "                | 614          | 5.2  |
| " "                | 576          | 5.2  |
| " "                | 581          | 4.8  |
| " "                | 582          | 4.9  |
| " "                | 608          | 4.5  |
| " "                | 630          | 5.7  |
| " "                | 561          | 3.9  |
| " "                | 407          | 1.2  |
|                    | L-3/13-5 (K) |      |
| yellowedge grouper | 856          | 16.6 |
| " "                | 678          | 8.9  |
| " "                | 720          | 10.5 |
| " "                | 874          | 16.4 |
| " "                | 914          | 19.4 |
| snowy grouper      | 863          | 19.4 |
|                    | L-3/13-6     |      |
| yellowedge grouper | 742          | 11.2 |
| " "                | 641          | 7.9  |
| " "                | 509          | 3.4  |
| golden tilefish    | 601          | 5.5  |
| " "                | 855          | 16.2 |

|                    |          |      |
|--------------------|----------|------|
| golden tilefish    | 647      | 6.1  |
| " "                | 635      | 6.1  |
|                    | L-3/13-7 |      |
| yellowedge grouper | 774      | 13.2 |
| " "                | 858      | 16.4 |
| " "                | 609      | 7.1  |
| " "                | 826      | 13.8 |
| " "                | 687      | 8.1  |
| " "                | 758      | 12.3 |
| " "                | 800      | 12.0 |
| " "                | 664      | 8.7  |
| " "                | 692      | 9.1  |
| " "                | 641      | 7.8  |
| " "                | 751      | 12.1 |
| " "                | 690      | 9.1  |
| " "                | 665      | 8.3  |
| " "                | 722      | 10.3 |
| golden tilefish    | 618      | 4.9  |
| " "                | 826      | 15.2 |
| " "                | 535      | 3.8  |
| " "                | 595      | 5.2  |
| " "                | 515      | 3.0  |
| " "                | 729      | 9.3  |
| " "                | 581      | 5.0  |
| " "                | 554      | 4.2  |
| " "                | 840      | 15.9 |
| " "                | 660      | 8.5  |
| " "                | 471      | 2.3  |
| " "                | 529      | 4.0  |
| " "                | 744      | 7.0  |
| " "                | 541      | 3.9  |
| " "                | 509      | 3.8  |
| " "                | 539      | 4.6  |
| " "                | 600      | 5.3  |
|                    | L-3/13-8 |      |
| yellowedge grouper | 672      | 8.2  |
| " "                | 761      | 14.8 |
| " "                | 663      | 7.5  |
| " "                | 646      | 7.7  |
| " "                | 649      | 8.0  |
| golden tilefish    | 564      | 4.4  |
| " "                | 583      | 4.6  |
| " "                | 622      | 6.5  |
| " "                | 558      | 4.6  |
| " "                | 610      | 5.5  |
|                    | L-3/13-9 |      |
| yellowedge grouper | 751      | 7.7  |
|                    | L-3/14-1 |      |
| yellowedge grouper | 785      | 11.8 |
| " "                | 901      | 17.4 |
| " "                | 1007     | 30.0 |
| greater amberjack  | 1046     | 32.9 |



|                    |              |      |
|--------------------|--------------|------|
|                    | L-3/14-2 (K) |      |
| red snapper        | 778          | 24.2 |
| red porgy          | 388          | 2.5  |
|                    | L-3/14-3 (K) |      |
| red snapper        | 823          | 21.5 |
|                    | L-3/14-4     |      |
| yellowedge grouper | 830          | 15.4 |
| "                  | 826          | 15.2 |
| golden tilefish    | 619          | 6.7  |
|                    | L-3/14-5     |      |
| yellowedge grouper | 705          | 9.2  |
| "                  | 464          | 2.7  |
| "                  | 810          | 14.0 |
|                    | L-3/14-7 (K) |      |
| red porgy          | 342          | 1.7  |
|                    | L-3/15-2     |      |
| yellowedge grouper | 898          | 21.5 |
| "                  | 700          | 7.8  |
| "                  | 732          | 9.3  |
| "                  | 789          | 15.1 |
| "                  | 661          | 8.5  |
| "                  | 615          | 5.2  |
| "                  | 616          | 6.1  |
| "                  | 526          | 3.7  |
| "                  | 432          | 1.8  |
| "                  | 667          | 7.3  |
| golden tilefish    | 563          | 4.0  |
| "                  | 500          | 3.2  |
| "                  | 722          | 10.5 |
|                    | L-3/15-3 (K) |      |
| yellowedge grouper | 503          | 3.3  |
| "                  | 504          | 3.3  |
| "                  | 580          | 5.1  |
| "                  | 701          | 8.5  |
| "                  | 682          | 8.2  |
| "                  | 604          | 6.4  |
| "                  | 567          | 5.2  |
| "                  | 598          | 5.9  |
| "                  | 610          | 6.1  |
| "                  | 688          | 8.7  |
| "                  | 655          | 7.5  |
| "                  | 885          | 16.6 |
| "                  | 807          | 15.5 |
| golden tilefish    | 828          | 16.6 |
|                    | L-3/15-4     |      |
| yellowedge grouper | 690          | 8.1  |
| golden tilefish    | 854          | 14.7 |
| "                  | 706          | 9.4  |

|                    |              |      |
|--------------------|--------------|------|
| golden tilefish    | 662          | 6.9  |
| " "                | 596          | 5.2  |
| " "                | 599          | 5.0  |
| greater amberjack  | 828          | 16.2 |
|                    | L-3/15-5     |      |
| yellowedge grouper | 673          | 7.9  |
| " "                | 591          | 5.2  |
|                    | L-3/15-7 (K) |      |
| yellowedge grouper | 973          | 25.0 |
|                    | L-3/16-1 (K) |      |
| yellowedge grouper | 801          | 13.1 |
| " "                | 787          | 11.8 |
| " "                | 575          | 4.7  |
| " "                | 851          | 15.4 |
| " "                | 669          | 7.9  |
| " "                | 663          | 8.5  |
| " "                | 764          | 10.1 |
| " "                | 570          | 4.5  |
| golden tilefish    | 544          | 3.4  |
|                    | L-3/16-2 (K) |      |
| yellowedge grouper | 807          | 13.1 |
| " "                | 603          | 6.0  |
| " "                | 584          | 6.0  |
| " "                | 663          | 7.5  |
| " "                | 845          | 13.9 |
| golden tilefish    | 881          | 19.4 |
| " "                | 597          | 5.4  |
| " "                | 604          | 5.0  |
| " "                | 583          | 4.6  |
|                    | L-3/16-3 (K) |      |
| yellowedge grouper | 645          | 6.3  |
| " "                | 482          | 2.8  |
| " "                | 703          | 8.3  |
| " "                | 585          | 4.4  |
| golden tilefish    | 610          | 5.2  |
|                    | L-3/16-4 (K) |      |
| yellowedge grouper | 729          | 9.5  |
| " "                | 684          | 9.2  |
| " "                | 669          | 7.4  |
| " "                | 912          | 20.9 |
| " "                | 868          | 17.4 |
| " "                | 635          | 6.4  |
| " "                | 876          | 19.8 |
| snowy grouper      | 652          | 6.0  |
| golden tilefish    | 690          | 7.2  |
|                    | L-3/16-5 (K) |      |
| golden tilefish    | 542          | 4.0  |
| " "                | 524          | 3.0  |

|                     |              |      |
|---------------------|--------------|------|
|                     | L-3/16-6 (K) |      |
| yellowedge grouper  | 666          | 7.5  |
| " "                 | 664          | 7.2  |
| " "                 | 866          | 19.0 |
| " "                 | 945          | 23.2 |
| " "                 | 549          | 4.8  |
| " "                 | 644          | 7.1  |
| " "                 | 671          | 7.9  |
| " "                 | 707          | 8.8  |
| " "                 | 649          | 6.1  |
| " "                 | 592          | 5.2  |
| " "                 | 828          | 16.5 |
| " "                 | 623          | 6.1  |
| " "                 | 558          | 3.6  |
| " "                 | 679          | 6.1  |
| " "                 | 802          | 12.2 |
| " "                 | 636          | 5.3  |
|                     | L-3/16-7 (K) |      |
| yellowedge grouper  | 882          | 21.1 |
| " "                 | 683          | 8.3  |
| " "                 | 589          | 5.3  |
| " "                 | 673          | 9.1  |
|                     | L-3/16-8 (K) |      |
| snowy grouper       | 586          | 3.5  |
| yellowmouth grouper | 629          | 6.9  |
| scamp               | 921          | 24.7 |
| red snapper         | 360          | 1.7  |
| " "                 | 347          | 1.7  |
| " "                 | 347          | 1.7  |
| " "                 | 786          | 20.6 |
|                     | L-3/17-1 (K) |      |
| yellowmouth grouper | 493          | 3.7  |
| red snapper         | 741          | 14.8 |
| " "                 | 466          | 3.9  |
| " "                 | 438          | 3.3  |
| " "                 | 399          | 2.5  |
|                     | L-3/17-2 (K) |      |
| snowy grouper       | 584          | 5.6  |
| yellowmouth grouper | 636          | 7.6  |
| " "                 | 674          | 8.7  |
| " "                 | 566          | 6.1  |
| red snapper         | 407          | 2.7  |
| " "                 | 412          | 2.6  |
| " "                 | 519          | 5.5  |
| red porgy           | 505          | 4.4  |
| " "                 | 354          | 2.0  |
| " "                 | 451          | 3.2  |
|                     | L-3/17-3 (K) |      |
| yellowedge grouper  | 512          | 3.9  |
| " "                 | 456          | 2.9  |
| golden tilefish     | 804          | 16.3 |

|                    |              |      |
|--------------------|--------------|------|
|                    | L-3/17-4 (K) |      |
| golden tilefish    | 656          | 8.3  |
|                    | L-3/17-5     |      |
| yellowedge grouper | 793          | 15.3 |
| " "                | 633          | 7.5  |
| " "                | 666          | 7.8  |
| " "                | 685          | 8.6  |
| " "                | 615          | 6.7  |
| " "                | 731          | 10.5 |
| golden tilefish    | 688          | 7.9  |
| " "                | 876          | 18.8 |
| " "                | 658          | 7.1  |
| " "                | 492          | 3.0  |
| " "                | 677          | 8.2  |
|                    | L-3/18-1     |      |
| yellowedge grouper | 726          | 10.2 |
| " "                | 860          | 19.0 |
| " "                | 869          | 20.4 |
| golden tilefish    | 429          | 1.9  |
| " "                | 664          | 8.0  |
| " "                | 554          | 4.7  |
| " "                | 539          | 1.9  |
|                    | L-3/18-4     |      |
| yellowedge grouper | 733          | 11.0 |
| " "                | 825          | 19.1 |
| " "                | 916          | 24.6 |
| golden tilefish    | 709          | 9.9  |
| " "                | 378          | 1.1  |
| " "                | 379          | 1.0  |

The length and weight information on the following sets are at best to be considered scale and measuring board assisted guesses. Due to their inaccuracy, they may not be suitable for more than general information.

|                    |         |        |
|--------------------|---------|--------|
|                    | L-4/2-1 |        |
| yellowedge grouper | 820     | 18 1/2 |
| " "                | 620     | 7 1/2  |
| " "                | 863     | 20     |
| " "                | 750     | 14 1/2 |
|                    | L-4/2-2 |        |
| yellowedge grouper | 689     | 10     |
| " "                | 900     | 26     |
| " "                | 765     | 16 1/2 |
| " "                | 920     | 29     |
| " "                | 710     | 10 1/2 |
| " "                | 890     | 30 1/2 |
| " "                | 790     | 18     |
| golden tilefish    | 420     | 2      |
| greater amberjack  | 1020    | 34 1/2 |

|                    |             |        |
|--------------------|-------------|--------|
|                    | L-4/2-3     |        |
| yellowedge grouper | 625         | 7 1/2  |
| golden tilefish    | 890         | 22 1/2 |
| " "                | 640         | 8      |
|                    | L-4/2-4     |        |
| yellowedge grouper | 815         | 16 1/2 |
| " "                | 837         | 18 1/2 |
| " "                | 800         | 18 1/2 |
| golden tilefish    | 850         | 19 1/2 |
| " "                | 336         | 3/4    |
|                    | L-4/2-5 (K) |        |
| yellowedge grouper | 848         | 20 1/2 |
| " "                | 685         | 11     |
|                    | L-4/3-1 (K) |        |
| yellowedge grouper | 730         | 11 1/2 |
| " "                | 870         | 18     |
| " "                | 780         | 12     |
| " "                | 880         | 18     |
| " "                | 640         | 8      |
| " "                | 505         | 4      |
| " "                | 570         | 5 1/2  |
| warsaw grouper     | 1170        | 72     |
|                    | L-4/3-2     |        |
| yellowedge grouper | 500         | 4      |
| " "                | 550         | 5      |
| " "                | 570         | 5 3/4  |
| " "                | 470         | 3      |
| " "                | 585         | 5 1/2  |
| " "                | 562         | 5      |
| " "                | 615         | 7 1/4  |
| " "                | 470         | 3 1/2  |
| " "                | 575         | 5 1/4  |
| " "                | 470         | 13 1/2 |
| " "                | 630         | 7      |
| " "                | 628         | 7 1/4  |
| " "                | 535         | 4 1/4  |
| " "                | 558         | 4 3/4  |
| " "                | 620         | 6 3/4  |
| " "                | 635         | 7      |
| " "                | 640         | 8      |
| " "                | 570         | 5 1/4  |
| " "                | 590         | 5 3/4  |
| " "                | 475         | 3      |
| " "                | 585         | 6      |
| " "                | 625         | 6 1/2  |
| " "                | 475         | 3      |
| " "                | 495         | 3 1/2  |
| " "                | 570         | 5 3/4  |
| " "                | 590         | 5 3/4  |
| " "                | 545         | 5      |

|                    |             |        |
|--------------------|-------------|--------|
| golden tilefish    | 385         | 1 1/2  |
| " "                | 798         | 16     |
| " "                | 720         | 8 3/4  |
| " "                | 700         | 9 1/2  |
|                    | L-4/3-3 (K) |        |
| yellowedge grouper | 765         | 13 1/2 |
| " "                | 610         | 6 3/4  |
| " "                | 680         | 8 1/2  |
| " "                | 430         | 2 1/2  |
|                    | L-4/3-4 (K) |        |
| yellowedge grouper | 490         | 3 1/4  |
| " "                | 890         | 18     |
| " "                | 438         | 2 1/4  |
| " "                | 420         | 2      |
| " "                | 525         | 4      |
| " "                | 470         | 3      |
| " "                | 460         | 3      |
| " "                | 590         | 5      |
| " "                | 480         | 3 1/2  |
|                    | L-4/3-7 (K) |        |
| yellowedge grouper | 685         | 9      |
| " "                | 895         | 22 1/2 |
| " "                | 630         | 8 1/4  |
| " "                | 810         | 15 1/2 |
|                    | L-4/3-8 (K) |        |
| yellowedge grouper | 730         | 11 1/2 |
| " "                | 676         | 9      |
|                    | L-4/3-9 (K) |        |
| yellowedge grouper | 490         | 3      |
| " "                | 505         | 4      |
| " "                | 415         | 2 1/4  |
| " "                | 565         | 5 1/4  |
| " "                | 630         | 7 1/4  |
| " "                | 453         | 2 1/2  |
| " "                | 430         | 2      |
| " "                | 440         | 2 1/2  |
| " "                | 550         | 4 1/2  |
| " "                | 515         | 4 1/2  |
| " "                | 510         | 4      |
|                    | L-4/4-1 (K) |        |
| yellowedge grouper | 595         | 6      |
| " "                | 614         | 6 1/2  |
| " "                | 385         | 1 3/4  |
| golden tilefish    | 585         | 5 1/2  |
| " "                | 520         | 4 1/4  |
| wenchman           | N/A         | N/A    |

|                    |             |        |
|--------------------|-------------|--------|
|                    | L-4/4-3     |        |
| yellowedge grouper | 530         | 4 1/2  |
| " "                | 560         | 5 1/4  |
| " "                | 565         | 5 1/2  |
| " "                | 625         | 6 1/2  |
| " "                | 715         | 10 1/2 |
| " "                | 640         | 7 1/2  |
| " "                | 605         | 6      |
| " "                | 783         | 15     |
| " "                | 565         | 5      |
| " "                | 575         | 6      |
| " "                | 640         | 8 3/4  |
| " "                | 620         | 6 3/4  |
| " "                | 540         | 5 3/4  |
| " "                | 580         | 6 1/4  |
| golden tilefish    | 515         | 4 1/2  |
| " "                | 590         | 6      |
| wenchman           | N/A         | N/A    |
| greater amberjack  | 910         | 20 1/2 |
|                    | L-4/5-1     |        |
| yellowedge grouper | 715         | 11     |
| " "                | 680         | 7 3/4  |
| " "                | 800         | 14     |
| " "                | 685         | 9      |
| " "                | 740         | 13 1/2 |
| " "                | 720         | 11     |
| " "                | 640         | 8      |
| " "                | 625         | 7 3/4  |
| golden tilefish    | 530         | 4      |
| " "                | 685         | 8      |
| " "                | 685         | 9      |
|                    | L-4/5-2     |        |
| yellowedge grouper | 690         | 9 1/2  |
| " "                | 670         | 9      |
| " "                | 625         | 7      |
| " "                | 700         | 10     |
| " "                | 625         | 9      |
| " "                | 790         | 14     |
| golden tilefish    | 555         | 5 1/4  |
|                    | L-4/5-3 (K) |        |
| yellowedge grouper | 685         | 9 1/2  |
| warsaw grouper     | 1130        | 42     |
| snowy grouper      | 790         | 14 1/2 |
|                    | L-4/5-4     |        |
| yellowedge grouper | 840         | 16     |
| " "                | 815         | 14 1/2 |
| " "                | 715         | 9 1/2  |
| " "                | 625         | 6 3/4  |
| warsaw grouper     | 1030        | 34     |
| golden tilefish    | 800         | 14     |
| " "                | 760         | 12     |
| " "                | 570         | 5 1/2  |
| " "                | 575         | 6      |

|                    |                     |       |
|--------------------|---------------------|-------|
| warsaw grouper     | L-4/5-5 (K)<br>990  | 30    |
| yellowedge grouper | L-4/5-6 (K)<br>840  | 18    |
| " "                | 660                 | 9     |
| " "                | 610                 | 7     |
| " "                | 585                 | 6     |
| golden tilefish    | 675                 | 9 1/4 |
| yellowedge grouper | L-4/5-7 (K)<br>675  | 9     |
| yellowedge grouper | L-4/5-8 (K)<br>580  | 7     |
| " "                | 620                 | 7 1/4 |
| " "                | 570                 | 5 3/4 |
| " "                | 640                 | 7 1/4 |
| " "                | 610                 | 6 1/2 |
| " "                | 455                 | 3     |
| golden tilefish    | 690                 | 8 1/2 |
| yellowedge grouper | L-4/5-9 (K)<br>630  | 7 1/2 |
| yellowedge grouper | L-4/6-1 (K)<br>605  | 6 1/2 |
| yellowedge grouper | L-4/6-5<br>640      | 7 1/4 |
| " "                | 680                 | 9 1/2 |
| snowy grouper      | 685                 | 9 1/2 |
| golden tilefish    | 750                 | 13    |
| warsaw grouper     | L-4/6-6 (K)<br>1100 | 35    |
| warsaw grouper     | L-4/6-9 (K)<br>920  | 24    |
| red snapper        | L-4/6-11 (K)<br>548 | 6     |
| yellowedge grouper | L-4/7-1 (K)<br>560  | 6     |
| yellowedge grouper | L-4/7-2 (K)<br>600  | 6     |
| yellowedge grouper | L-4/8-1 (K)<br>695  | 9 1/2 |
| yellowedge grouper | L-4/9-2 (K)<br>495  | 3 1/2 |
| red snapper        | 380                 | 2     |
| " "                | 360                 | 1 1/2 |
| " "                | 369                 | 1 3/4 |



|                    |              |       |
|--------------------|--------------|-------|
|                    | L-4/9-3 (K)  |       |
| red snapper        | 660          | 11    |
| " "                | 620          | 10    |
|                    | L-4/9-7 (K)  |       |
| yellowedge grouper | 560          | 5     |
| " "                | 460          | 2 1/2 |
| " "                | 570          | 4 1/4 |
| " "                | 560          | 5     |
| " "                | 490          | 3 1/2 |
| " "                | 415          | 2 1/4 |
| " "                | 415          | 2 1/4 |
| golden tilefish    | 450          | 2 1/2 |
|                    | L-4/10-1 (K) |       |
| golden tilefish    | 420          | 2 1/4 |
| " "                | 500          | 3     |
|                    | L-4/10-2 (K) |       |
| yellowedge grouper | 590          | 6     |
| " "                | 460          | 3     |
| golden tilefish    | 490          | 3     |
| " "                | 430          | 2 1/4 |
| " "                | 490          | 3     |

