



ARTIST UNKNOWN

FISH AT PLATFORMS

By
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Fishermen that regularly fish at any of the 4,200 oil and gas production platforms in the Gulf of Mexico know how good the fishing can be. Most rig fishermen also know that very often more fish are found on one side of the platform than another, but determining a pattern can be difficult.

Until recently, very little research has been done on how fish are distributed around these platforms. A project conducted by Louisiana State University scientists at Gulf platforms has now produced interesting results. Rather than use nets or divers, which have problems with gear selectivity, visibility or diver avoidance, the researchers used sonar transmitters which were mounted to send their signals both upward and downward around the edges of the platforms used in the study. The sonar signals were able to pick up fish 1.2 inches long and longer, count the fish and determine the size of the fish.

Sampling was done at three platforms over a period of several year at South Timbalier 54 (72 feet deep), Grand Isle 94 (195 feet deep) and Green Canyon 18 (712 feet deep). The deepest platform was located off of the gently sloping bottom of the continental shelf, on the more steeply inclined continental slope.

At South Timbalier 54, the highest concentrations of fish by far were found on the north side of the platform. At Grand Isle 94, highest concentrations were on the north side, closely followed by the west side. The least fish, by a wide margin, were on the east side. At Green Canyon 18, far fewer fish were found than at the two shallower sites, however the most fish were found on the west side with good numbers also on the north side of the platform. One possible reason for the high densities of fish on the north sides of platforms may be the additional structure on that side due to the location of the well bays.

Distribution of fish by depth showed even more variation. At the shallowest platform, South Timbalier 54, fish concentrations were highest in the upper 16 feet of water. Fish numbers dropped until 32 feet deep, and then increased steadily from that point to the bottom at 72 feet.

The species of fish present were identified using a small remote controlled submarine carrying a video transmitter. It should be noted that at times, fish identification was difficult because of the presence of a murky layer of water, most often in the bottom 15-30 feet of water. At South Timbalier 54, the fish population was made up of the following species: spadefish (34%), blue runner (21%), sheephead (17%), red snapper (11%), bluefish (2%) and a combination of 13 other species (15%).

The mid-depth platform, Grand Isle 94, held the most fish, and had a distribution pattern similar to the shallow platform. Large concentrations of fish were found near the surface. By the depth of 15-16 feet, numbers dropped off by about half and held steady to about 52 feet deep. Then fish numbers increased rapidly to their highest numbers about 30 feet off of the bottom. While dropping slightly from there to the bottom (195 ft), fish concentrations were still quite high.

At Grand Isle 94, by far the most common fish found during the study period was the blue runner (88%), followed by red snapper (3%), horse-eye jack (3%), mangrove snapper (1%), amberjack (1%), barracuda (1%) and 18 other species combined (3%).

The platform standing in the deepest water, Green Canyon 18, held the least fish. At this platform, the largest concentration of fish was at the surface. Fish density showed a spectacular drop down to a depth of 49 feet deep. From there, fish numbers were very low, but fairly consistent until 325 feet deep. Below this depth, down to the bottom at 712 feet, almost no fish were found. In fact, fish numbers were actually lower than in the open waters away from platforms up on the continental shelf.

The break-down on fish species at Green Canyon 18 was as follows: creole fish (50%), blue runners (21%), Bermuda chubs (6%), almaco jacks (6%), amberjacks (4%), horse-eye jacks (4%), barracuda (2%) and 10 other species (7%). The researchers concluded that the low fish densities at Green Canyon 18 were probably due to the location being distant from the highly productive waters discharged from the Mississippi River. Green Canyon 18's waters were similar to open ocean waters with low productivity.

The researchers made one general observation that applied to all three platforms. Unlike on natural reefs, fish did not change depths with time of day. They also noted that at the deepest platform, fish numbers did not change with the time of the year. At the two shallower platforms, fish densities were highest in fall and winter.

One final finding from this research applies to placing artificial reefs, which off of Louisiana are built of oil and gas platforms toppled onto their side. A toppled platform placed in a location that holds few fish near the bottom, such as near Green Canyon 18, will likely be a very poor artificial reef. In such waters, the highest point of the platform reef extending up from the bottom will determine its effectiveness as a fish attractor.