

ALA. DEPT. OF CONSERVATION
SEAFOODS DIVISION

PRELIMINARY REPORT OF RESEARCH ON
FISH HAVENS IN ALABAMA WATERS

ALABAMA MARINE RESOURCES LABORATORY

BY

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1963

I N T R O D U C T I O N

As part of a study on the life history of the red snapper, Lutianus aya, an evaluation of the development and potential of artificial fishing reefs is presently being carried out. This project began in June of 1962 and has presently been slowed because of the on-set of winter as well as a lack of operating funds.

Description of the Area. The floor of the Gulf of Mexico off Alabama can be described as a vast sandy plain. The contour of this plain is relatively unbroken and has a gradual slope to the south until the hundred fathom curve is reached; then drops off to the abyssal depths rather abruptly. The floor of the Gulf off Alabama is rather barren of vertebrate fauna except in the areas where the contour of the plain is broken by either natural or man-made obstructions. Around the man-made obstructions, the number of fish is unsurpassed in temperate seas. The most abundant species is still undetermined. The artificial reefs are more productive than the natural reefs in Alabama waters even though the natural reefs are much more extensive in area. This is probably because the relief of the artificial reefs is much greater.

Description of Existing Natural Reefs. There are two natural reefs or banks off the coast of Alabama called the Southeast and the Southwest banks. The Southeast bank is located approximately 12 miles southeast of Sand Island Light. (See U.S. Coast and Geodetic Chart of Mobile Bay). The banks dimensions are two miles in length and approximately one fourth mile in width, lying in a northeasterly to southwesterly direction. The depth ranges from 75 to 90 feet, though not changing abruptly.

The bottom appears to be a series of shell banks and mud gullies. This area produces several species of fish, with Lutianus being predominant. The fish taken here are considerably smaller than those taken on the artificial reefs. Lutianus larger than two pounds are seldom taken, though fairly large grouper are taken quite frequently. The Southwest bank is located 18 miles south-southwest of Sand Island Light. This bank appears to be a small ridge about one fourth mile in length and less than 100 yards in width. The bank lies in 70 feet of water with a relief of 10 feet at a maximum. This area produces the same type of fish as the Southeast bank. These two areas are well away from the effects of the turbid waters of Mobile Bay and are very clear except under extremely rough conditions.

Description of Existing Artificial Reefs. The largest of the artificial reefs is a sunken drydock located 14 miles 190 degrees south of Sand Island Light. (See U.S. Coast and Geodetic Chart of Mobile Bay). This structure is 300 feet in length and 150 feet in width and lies in 70 feet of water. It has a relief of 10 to 20 feet. It was sunk in 1957 and left undisturbed for two years. Since the location was released this structure has been the hot spot of Alabama Gulf Coast fishing, producing more pounds of fish than any other area of comparable size. The sunken drydock is subjected to extremely heavy fishing pressure. During the summer months as many as 15 large party boats fish it each week, all having good results. It is not uncommon to see as many as eight boats fishing it at one time. Despite this heavy pressure, if left alone for several days, the drydock appears to recover completely and continues to produce good catches all through the season.

The number of fish around this structure is indescribable and the number of different species is outstanding. No attempt has been made to identify all species present, but this is forth coming in this present project.

The smallest of the artificial reefs in Alabama waters is of unknown origin, though it is believed to be scrap dumped by the Coast Guard. This is a sunken sea buoy six feet in diameter and a piece of pipe four feet in diameter and fifteen feet in length. This reef is in 56 feet of water on a moderately hard, sand bottom. Although this reef is extremely small, it produces an unbelievable amount of fish. It was discovered accidentally in June of 1962 by a trolling charter boat. On the day of discovery, 21 boats fished this hot spot. Some of the boats were outboard and had to stop fishing because of overloading the boats with fish. One of the charter boats fished the reef for one hour, with seven people catching 1500 pounds of fish. Although only the one charter boat catch mentioned above was authenticated, it was reported that all 21 boats fishing the reef made similar catches. Diving biologists made exploratory dives immediately after the discovery of this reef and reported that there were an estimated 500 to 700 fish still around the reef. The biologists reported that the fish ran from one to forty pounds in size. Aside from the great number of fish on this very small reef, another interesting fact is that all fish caught were red snapper. (*Litjanus aya*). Only two small grouper were observed on the bottom along with the vast amount of snappers. In the mid-waters above, several other species of pelagic fish were milling around. The greatest number of these fish were amberjacks. None of these were taken because of the

type of bait used for catching the snapper.

Another artificial reef that has been constructed in Alabama waters utilized junked car bodies. The car body reef is located along the 10 fathom curve south of Dauphin Island on a mud bottom. This reef was established in 1954 by the Alabama Department of Conservation, Division of Game and Fish. It has on occasions produced large catches of snapper but is at present of questionable value because of the difficulty of locating it. Also under certain conditions the water becomes turbid and the snapper will not readily take bait under these conditions. This reef produced practically no fish in 1962, probably because the car bodies have either been buried in the mud or have disintergrated. The failure of the Car Body Reef exemplifies the fact that proper planning by experienced personnel is of utmost importance.

Another car body reef was established during the same year as the above reef off the mouth of Perdido Bay. This reef was placed in 60 feet of water and is located eight miles south of Perdido Pass. It lies on a hard sand bottom and the water is usually extremely clear. This area is extremely productive and is the mainstay of the sportfishery of that area. Although this reef is very productive, it has not been observed by diving biologists at the present time.

In the above area, several small reefs have been established by private enterprize and are reported to be very productive. These private reefs are constructed of virtually any type of "junk" ranging from automobile tires to old stoves and refrigerators. Due to the fact that these reefs are privately built, it is practically impossible to get the local fishermen to divulge their locations. Because of this, none of the private reefs off Perdido Pass have been observed.

Recent Developments in Alabama Waters. During the month of November 1962, the Alabama Department of Conservation, Division of Game and Fish, in cooperation with the Division of Seafoods and the Alabama Marine Laboratory established a large reef eight miles off Perdido Pass in 75 feet of water. This reef was constructed with 300 tons of scrap concrete culvert pipe. The culvert pipe ranged in diameter from two to six feet and up to ten feet in length. The pipe was placed on hard sand bottom where it has least chance of being buried in the sand. Unless this reef eventually becomes buried, it should prove to be a permanent installation.

Due to bad weather, no dives have been made on this newly established reef. This reef, due to the care in selecting the location and the material used in construction should prove to be Alabama's most productive. It is the opinion of the author of this paper that this scrap culvert pipe is the answer to the problem of materials for the construction of artificial fish havens. This pipe is steel reinforced concrete and should prove to be permanent. Scrap culvert pipe is also the cheapest material that has been utilized in Alabama waters. It is relatively easy to handle and large quantities can be hauled to sites with nominal expense. The new reef was established for \$1200.00, \$200 being for the purchase of the material and \$1000. , transportation to reef site. Considering the productivity of previously existing reefs, this reef should prove to be an invaluable asset to Alabama sportsfishing.

The Development of An Artificial Fish Haven. During the summer of 1962 the establishment and development of a small artificial fish haven was observed and studied by marine biologist utilizing S.C.U.B.A. equipment. This artificial fish reef was a 26 foot steel life boat that

sank in 56 feet of water at a location five miles southeast of Sand Island Light. (See U.S. Coast and Geodetic Chart of Mobile Bay). Weekly dives were made to observe the accumulation of fish. The first fish to take up residence around the life boat was a large school of amberjacks. These fish were observed seven days after the boat sank. Two weeks after sinking, divers noted ten small red snapper (*Litianus* sp.), three common triggerfish, and approximately 200 amberjacks. The third week 27 red snapper were counted along with the amberjacks and various other fish that could not be identified by the divers in the field. Due to bad weather no observation was made on the fourth week. The fifth week divers were unable to get an accurate count of the red snapper because of the turbid condition of the water but estimated there to be between 50 and 100 of these fish. Due to uncontrollable circumstances no further observations have been made of this reef.

It should be noted that this is a preliminary paper and more work is being conducted in this area and will be published in the near future.

ACKNOWLEDGMENTS:

I am grateful to Mr. Jack C. Mallory, Alabama Marine Laboratory, for his assistance, both in the field and in the laboratory, during the course of this study.

For assistance in the field I gratefully acknowledge the help of Mr. Ralph Sheffield, Captain of the charterboat, Jamie Marie, who made this study possible by furnishing his boat and crew, at no cost, and aiding in the location of the reefs in Alabama waters.

I am indebted to Mr. George Allen for encouragement and support of this study.

To the University of Alabama I am indebted for the financial aid given in the form of an assistantship that enabled me to devote my time to this study.