

GULF STATES MARINE FISHERIES COMMISSION

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INFORMATIONAL SERIES

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To the

LEGISLATORS

And to the

MARINE FISHERIES ADMINISTRATORS

of

ALABAMA

FLORIDA

LOUISIANA

MISSISSIPPI

TEXAS

This, the first of a series of informational bulletins, has been published by the Gulf States Marine Fisheries Commission as information to the Legislators and Marine Fisheries Administrators of the several compacted Gulf States and for such consideration as may be deemed appropriate in the development of laws and regulations pertaining to the shrimp fishery of their respective states.

Commission biologists, together with biologists of the U. S. Fish & Wildlife Service, were requested by the Gulf States Marine Fisheries Commission to submit their recommendations for uniform shrimp regulations for the compacted states. The recommendations of the scientists, based upon biological data accumulated over a period of years, appear below:

The recommendations that follow are based upon present knowledge of the shrimp and the shrimp fishery. Future developments may require revision of these recommendations. The purpose of the recommendations is to obtain the maximum poundage of shrimp from each year's crop without unduly hampering the industry.

We base these recommendations on the knowledge that it is not necessary to protect the spawning stock and we assume that it is advantageous to protect the small shrimp.

While most of our knowledge is based upon research on the common shrimp, **Penaeus setiferus**, we have no reason to believe at this time that suggested regulations will not apply equally well to the grooved shrimp, **Penaeus aztecus** and **Penaeus duorarum**.

The following facts concerning the life history of the common shrimp we consider to be fundamental for the framing of regulations of the fishery:

1. Spawning occurs approximately from March through September in the offshore waters. The eggs are laid directly into the water and are not carried by the female. A female shrimp will lay between 500,000 and 1,000,000 eggs at a spawning.
2. The eggs hatch within a few hours and the young shrimp are carried by currents to the bays and estuaries which are the nursery grounds.
3. On the nursery grounds during the summer the young shrimp grow very rapidly, generally more than doubling their weight each month.
4. As they increase in size they move to waters of higher salinity. In Louisiana, Mississippi, Alabama and the west coast of Florida the young appear in abundance on the inside fishing grounds by mid-June; in Texas by mid-July.
5. Shortly after appearing in abundance on the inside fishing grounds the larger shrimp begin to move to the outside waters. Thereafter there is a constant movement of these larger shrimp from the inside to the outside waters.
6. With the approach of winter and the resultant lowering of water temperature this movement is speeded up. The result is that the larger shrimp have moved to the outside waters leaving the smaller shrimp in the inside waters. At the same time the growth rate of the shrimp is appreciably decreased due to these lower temperatures.
7. With the approach of spring and the resultant warming of the waters the small shrimp which wintered over in the inside waters assume a very rapid rate of growth and soon catch up in size with the earlier spawned individuals. Concurrently they move from the inside to the outside waters. In these outside waters spawning takes place. At spawning these shrimp are approximately one year old. Few if any survive to spawn a second year. Therefore for all practical purposes the common shrimp is an annual.

We define inside waters to be all waters landward of the three fathom line in the Gulf of Mexico. Outside waters are all waters seaward from the three fathom line in the Gulf of Mexico.

CLOSED SEASONS

Inside waters:

The first closed season for inside waters should be, for the area east of the Louisiana-Texas boundary, to and including St. Marks, Florida, from June 15 to August 31. The closed season for the inside waters of Texas should be from July 15 to September 15.

The second closed season for inside waters in all states should be from December 15 of one year to March 31 of the following year.

The first closed season is suggested to protect the small shrimp during the period of their most rapid growth. The different season suggested for Texas waters results from the fact pointed out above that the young shrimp appear later in the inside waters of this area.

The second closed season is suggested for the purpose of protecting the small shrimp that are wintering over in the inside waters. These shrimp produce the spring run.

Outside waters:

The outside waters should remain open to fishing in all states throughout the entire year.

There is at present no indication of a relationship between the number of spawners and the resulting crop. At no season of the year do small individuals predominate in the shrimp population in outside waters.

SIZE LIMITS

We recommend no size limits and that those now in effect be abolished.

When a size limit is imposed the basic purpose of the regulation is defeated by culling. Shrimp smaller than the legal size which have been killed in the fishing operation are discarded. The closed seasons recommended above if **strictly enforced** should provide adequate controls. While of no biological significance it is a fact that size limits are difficult to enforce which further detracts from their usefulness.

NIGHT FISHING

Night fishing should be permitted in all waters during open seasons.

Whether a shrimp is caught during the day or during the night the effect on the population is the same.

A ban on night fishing would almost eliminate the grooved shrimp fishery which has become of great importance and has promise of considerable development.

GEAR

No limitations are suggested on size of trawls or mesh.

We have no evidence that trawling is harmful or beneficial to the bottoms. The criticism that large trawls take an undue quantity of shrimp from the inside waters is not sound since it makes no difference to the shrimp population whether or not the shrimp are caught by a large or a small trawl. Competition between units of the fleet is an economic rather than a biological problem. Again we believe that the recommended closed seasons properly enforced should suffice for adequate control.

The size of mesh used in a trawl does not control to any marked degree the size of shrimp caught. In any case, we have already stated that the size of shrimp caught during open seasons does not need to be controlled.

The data we have shows that no significant quantities of important commercial or sport fishes are taken in shrimp trawling operations. In order to permit the escape of the small numbers of important fish which are caught it would be necessary to increase the size of the mesh to an extent which would seriously decrease the ability of the trawl to catch shrimp. The value of the shrimp caught by trawling operations is so vastly greater than the value of the fish incidentally caught that to curtail shrimping in order to prevent the capture of these fish would be unjustified.

HEADING OF SHRIMP ON THE GROUNDS

There is no necessity for prohibiting the heading of shrimp on the fishing grounds.

Shrimp are cannibalistic, they will eat their fellows dead or alive. It is highly unlikely that the presence of shrimp heads on the bottom will cause live shrimp to avoid that area. Returning shrimp heads to the sea is replacing a portion of nutrient removed.

BAIT FISHING

It is suggested that the shrimp bait fishery regulations be seriously reconsidered since there is much evidence of the abuse of this privilege.

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