

FLORIDA STATE BOARD OF CONSERVATION
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Preliminary Report

on

SHRIMPING IN TAMPA BAY

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SHRIMPING IN TAMPA BAY

INTRODUCTION

Florida law has for some time past forbidden the catching of shrimp in "inside waters" by any device other than a cast net. Despite this law shrimp have been caught illegally in Tampa Bay by pushnet and by small trawl for the past twelve years. Recently the State Board of Conservation, in a determined effort to enforce the fishery conservation laws invoked the shrimp regulation and caused shrimping by trawl and pushnet to cease. This caused considerable hardship to men who rent boats and supply tackle and bait to sports fishermen, particularly tourists. These men claimed that the fishermen have become so used to having live shrimp for bait that they now refuse to fish without them.

The falling off of the sport fishing with resultant loss to the bait dealers following this enforcement of the law brought about the submission of petitions for some measure of relief until new legislation could be practiced. As a result the Conservation Agents were instructed as a temporary measure to allow trawling for shrimp again. The Board of Conservation has every intention of enforcing law to the utmost and this decision was only made because of the special circumstances.

The Board of Conservation is now faced with the problem of whether the law prohibiting pushnetting and trawling for shrimp in inside waters is a proper one whether new legislation should be enacted. Complicating the solution of this problem are the vociferously stated conflicting interests of the shrimpers and dipnet fishermen. In order that any new legislation may be based upon facts the Board of Conservation requested a survey of the situation by fishery biologists. Although necessarily brief, this survey is impartial and may serve as a reliable guide [INDECIPHERABLE] wise legislature pending a more extended investigation.

Claims of Conflicting Interests

Net fishermen condemn shrimping by trawls (pushnetting is not deemed very serious) since, they claim that:

1. It interferes with their fishing by occupying ground that they wish to use crossing and sometimes damaging their nets.
2. It frightens the fish away by the noise of engines, lights, and dragging of the bottom.
3. It destroys the feeding and breeding places of fish by tearing up the vegetation as the trawl passes over.
4. It kills large numbers of market fish, particularly small individuals.
5. It removes shrimp which provide food for many market fish.

Shrimpers and bait dealers for their part, state:

1. The claims regarding the effect of trawling on the activities of the net fishermen, damage to the bottom and the destruction of small fish as false or exaggerated.

2. The bait business has grown to one of large proportions, and sports fishing and the tourist trade generally would suffer seriously if the source of shrimp were removed.

3. Shrimp are used for no other purpose than as sport fish bait and the shrimp resources would be wasted if shrimping were prohibited.

4. No method except trawling can supply adequate numbers of shrimp for the bait business.

In an attempt to evaluate this situation objectively, a trip was made by Mr. Clarence Idyll to the Tampa Bay region during the last two weeks of March 1949. Observations were made from an aeroplane of the bottom of the Bay over which heavy trawling had been done; a trip was made observing trawl shrimping; pushnetting as observed; a large number of interviews were arranged with men on both sides of the controversy, including shrimp trawlers and pushnetters, bait dealers, net fishermen, commercial fish dealers, conservation agents and newspapermen. The following report is a preliminary estimate of the situation. It is deficient in the number of observations of actual trawling. Many more such observations, extending over the whole year and including several areas and types of gear should be made before final conclusions are drawn. The conclusions and recommendations are tentative, but in view of the impending legislation and the limited time available, they represent the best scientific information.

Economics of Tampa Bay Shrimping

Live shrimp are not universally agreed to be the best bait for sports fishing. They have probably been used to some extent for many years for this purpose. Up to 1937, any that were caught were secured by cast net or dip net for the most part. In 1937 Mr. Charles Dawson and his brother began experimenting with a shrimp trawl. They evolved a successful gear, which was probably one of the first used in the Tampa Region. With an increasing supply of live shrimp their popularity as bait steadily increased with an especial upsurge during the war when many service men used sport fishing as a relaxation. Beginning about six years ago, live shrimp almost totally replaced other baits for certain types of fishing, to the extent that fishermen will not fish without them. As a consequence boat renting establishments lose heavily if they do not have a supply of shrimp. Undoubtedly slow re-education would result in the use once more of cut mullet or other bait should shrimp be impossible to obtain, but this would be a long process, and considerable loss to boathouses would result,

For most of the year the shrimp caught in Tampa Bay are too small to be commercially valuable, and are never sold for market purposes. They are mostly the so-called red shrimp, *Penaeus brasiliensis*, which is quite distinct from the common commercial gray shrimp *Penaeus satiferus*. They have moved offshore where they release their eggs by the time they reach a good market size and only the young ones returning to feed are going in inshore grounds. Unfortunately the rocky nature of the offshore grounds prohibits commercial trawling on a large scale. Last year (1948) the Pinellas Seafoods Company in St. Petersburg experimented with shrimp trawling on a small scale in an area about 3 miles by 2 miles just south of Blind Pass, 4 miles north of Pass-a-Grille. Beginning on March 2 and lasting for three weeks trawling produced over 8,000 pounds of marketable shrimp (5,000 pounds headed). On the first try, 447 pounds were caught, but less on subsequent days. Twelve nets were involved in the operation. The shrimp ranged in size from 35 to 26 per pound. Another likely shrimp area is [INDECIPHERABLE] miles off Ft. Myers. Ms. L. S. Kenney of the Pinellas Fish Company hopes to [INDECIPHERABLE] more shrimp this year and will attempt to discover other suitable areas for shrimping. Hence there is a small-scale commercial fishery for these shrimp with hopes of an expanded one.

Recently the live shrimp business has expanded to the extent that considerable quantities are not exported, principally to the Miami area. This has caused the number of shrimp trawls operating to increase. This export business is a source of great irritation to the local boathouses since they sometimes have difficulty obtaining shrimp for their own use, while Miami and other areas are being supplied. They feel that this takes their trade to a rival area.

Effects of Shrimping upon the Sea Bottom

A major complaint against the shrimpers is that their gear tears up the bottom, destroying vegetation which should serve as food and living areas for fishes. Repeated reference was also made to the appearance of the Bay bottom where shrimp trawls had operated as seen from the air. It was described as torn up and "resembling a plowed field".

On March 24 a small aeroplane was chartered and flew over the area in question. Mr. J. C. Cumbie and Mr. Donald Hoben, Conservation Agents, also flew over the area. These men, Mr. James Coston, the plane's pilot and Mr. Idyll agree that a fair analysis of the situation as seen from the air was that certain restricted areas around Mullet, Pine and Cabbage Keys were heavily marked by trawls. Apparently boats had crossed and recrossed certain favorable areas affecting the bottom vegetation so that the tracks were visible. It further appeared, however, that some of the tracks, presumably the older ones, were partially recovered by vegetation, so that the removal was not a permanent one. Other areas in the vicinity were much less marked by trawls. The heavily marked areas constituted only a small proportion of the available Bay bottom. Observations at other seasons will be necessary.

On March 30 Mr. Idyll and Mr. John W. Sutton of the Marine Laboratory staff accompanied a shrimp trawler operating near Big Island, north of the west end of Gandy Causeway, in Old Tampa Bay. This area had a good growth of manatee grass (*Cymodocea manatorum*) and a seaweed (*Caulerpa prolifera*) over most of the bottom. In addition "rolling moss" (*Gracillaria blodgettii*) occurred in varying amounts. This latter is a great nuisance to the shrimpers, making trawling impossible where it is particularly thick because it fills up the net so that it cannot be lifted.

The trawler was 24 feet long with a 7 foot beam. It dragged two trawls from booms on each side of the boat. These trawls measured 5.5 feet wide and had 0.5" stretched mesh. The bottom beam consisted of an iron pipe which acted as a roller.

This trawl apparently did not tear up appreciable quantities of the bottom vegetation. It rolled over the "grass", which was not destroyed by its action. It collected a considerable amount of the unrooted "floating moss", but this could have no effect on the bottom. In the area where the trawl was working, the water was of sufficient depth that the propeller did not cut the bottom except once for a short period.

It is not yet known whether other trawls, constructed differently, working in other areas at different times of the year damage the bottom seriously. Many persons interviewed asserted with great conviction that they do. The one observed, at least, did not.

Destruction of Young Fish by Trawls

It is charged by opponents of the shrimp trawls that they catch large quantities of young fish of commercial importance. Shrimpers themselves deny this, asserting that any marketable fish are kept, and any undersize fish are released unharmed.

In the one observation of shrimp trawling no species of great commercial importance were caught in approximately 4.5 hours of trawling except for 6 to 8 flounders. The largest of these were kept, the rest released. No trout, no mullet, no redfish were caught of any size. The species that were captured included in the approximate order of their abundance:

Pinfish - *Lagodon rhomboides* - numerous small individuals - 1 - 4"
Sand perch - (Mojarra) - Gerridae - numerous small individuals - 1 to 3 "
Goby - Gobidae - numerous very small individuals - 0.5 to 1 "
Toadfish - Syngnathidae - few
Seahorses - Syngnathidae - few
Flounders - Pleuronectidae - few 0.5' to 7"
Spiny boxfish - *Chilomycterus schoepfi* - few
Cowfish - *Lactophrys tricornis* - few
Puffer - Tetraodon (?) - one
Blenny - Blenniidae - one

The waters where the trawling was done are very clear and as a consequence most fish can see the slow moving trawl before it can capture them.

It is possible that at other seasons of the year, small fishes may be caught. Investigation on this point should be made.

Shrimp trawling is done at night since the shrimp cannot be captured except in small numbers during daylight. This fact increases the chance of removal of small fish captured by the trawl and brought onto the sorting table. It is contended by many people that all of most fish brought aboard are dead of "drowning" or die shortly afterwards. It is the writer's belief that most of the fish caught by the trawl and swept back into the water after the shrimp are sorted out survived with little or no injury. The shrimp had more handling than the fish in most instances and the greatest number of them survived in the bait wells. The vegetation and the animals themselves kept the sorting table wet; the hauls are necessarily short due to the accumulation of moss; the sorting is done quickly to save the shrimp and the fish as swept over board very soon after they are caught.

Interference with Net Fishermen

The occupying by the shrimp boats of grounds desired by the net fishermen does not involve any peculiarity of the gear, it is simply a case of competition for space on the fishing grounds.

The alleged frightening of the fish by the lights of the shrimpers so that they leave an area and are unavailable for capture may be valid, or the scarcity of fish may be caused by other factors entirely, such as pollution, overfishing, etc. In any case if the fish are simply frightened away to another area there is no permanent loss.

Summary of Observations

1. The shrimp in Tampa Bay are valuable in providing excellent bait for sport fishing. The fishermen have been educated to the use of this bait to the extent that they now demand it, and the boat renting business suffers if live shrimp are not available.
2. Shrimping in outside waters on a commercial scale is not very limited [INDECIPHERABLE] to the nature of the bottom, which is suitable for trawling. There is a possibility of an increase in this commercial trawling.

3. Trawls as now constructed and fished may be harmful to bottom vegetation and to the young commercial fish, although the preliminary observations indicate that the alleged harmfulness is exaggerated.

4. Trawl shrimping has reached such proportions that the number of genra is causing congestion on the fishing grounds.

5. More shrimp are being produced than is necessary for local use and a sizable export business has developed. At times when local demand is high, local boat houses are unable to obtain sufficient numbers for their own use, although export to outside points continues.

Discussion

Possible solutions to the shrimping question were discussed at length with men representing all sides of the controversy. As usual a compromise solution which is not entirely satisfactory to any faction seems to be the logical one. In forming regulations the following objectives must be kept in mind:

1. To use the resource as fully as possible, consistent with the continuous maintenance of future yield.
2. To produce the shrimp economically and in sufficient quantities to apply at least the minimum demand.
3. To interfere as little as possible with the rights and interests of other types of fishing.
4. To prevent destruction of feeding and breeding habitats, of the shrimp and fish.
5. To make regulations realistic, practical and capable of enforcement by the Conservation agents.

Scientific observations and the opinions of shrimpers, fishermen and dealers are the basis of the following recommendations. Their practicability has been thoroughly discussed with the Conservation Agents of the region.

Recommendations

1. That shrimping by pushnet and trawls be legalized in inside waters.
2. That trawls be not greater than six feet in length.
3. That the trawl be not greater than 3 feet high.
4. That trawls be provided with at least three rollers of diameter not less than 6 inches.
5. That all shrimp boats be fitted with a propeller "shoe" to prevent damage to the bottom by the propeller action.
6. That shrimp be produced only in quantities sufficient to supply local needs and that export out of the county where the shrimp are caught be prohibited.
7. That a protected closed season from April 14 to September 14 be imposed on trawling and pushnetting for shrimp in order to reduce the pressure [INDECIPHERABLE].

