PUBLIC SENTIMENT: AN IMPORTANT FACTOR IN FISHERY MANAGEMENT, WITH SPECIAL REFERENCE TO THE FISHERIES OF THE ST. JOHNS RIVER AND LAKE OKEECHOBEE, FLORIDA

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Abstract: The most recent development in Florida's long-time controversy between sportsmen and commercial fishermen was the recent report of an almost three years' extensive survey of the effect of commercial fisheries on freshwater game fish populations and sport fishing. The investigators found that commercial fishing under proper regulations had no detrimental effect, that game fish populations were extremely short-lived, that no reduction in yield to sport or commercial fishermen was apparent during the periods of records, and that observations and data from other areas indicated that inter-specific food competition was probably more important than fishing operations. The report recommended that commercial taking of all species except black bass be permitted under strict control. Adverse public sentiment, sparked by some highly vocal sportsmen's groups, has stalemated the issue. The causes of this public attitude was discussed, the consideration of this factor as a major fishery management problem is urged, and suggestions are made for the approach of the fishery manager to this dufficult problem.

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Some of the problems surrounding the management of the fisheries of the St. Johns River and Lake Okeechobee were discussed previously before members of the American Fisheries Society (Dequine 1950). Since that presentation, some of those problems have been solved, some of the questions regarding the fisheries have been answered, but one of the major difficulties has yet to be overcome. Briefly, the problem involved a burning controversy between sportsmen and commercial fishermen.

Before 1946, the commercial taking and sale of bream (a heterogeneous term applied to most sunfishes), crappie, and catfish had been legal in the northern half of the St. Johns River and in Lake Okeechobee, but the sportsmen convinced the Game and Fresh Water Fish Commission that the use of seines and other commercial fishing devices should be stopped, and that the bream and crappie should be removed from the commercial list. This action was taken with disregard to a report based on a brief survey of the waters by fishery biologists of the Marine Biological Laboratory of the University of Miami, recommending that the commercial fisheries continue while a thorough study could be made of the problem (Marshall 1946). The termination of the commercial activities did not solve the problem, however. Some commercial fishermen continued to "bootleg" illegally taken bream and crappie across the state line, creating an enforcement problem with which the Commission could not cope, partially through the lack of necessary legislation. Other commercial interests and many sportsmen in the affected areas continued to express concern that stopping the removal of bream, crappie, and catfish would not only remove an economic asset to the areas, which had supported commercial fishing operations for more than 60 years with no valid

evidence of depletion, but would result in a decline in the populations of black bass for which both areas were noted.

METHODS

The stand of this latter group resulted in the setting up in mid-1948 of a survey program under the direction of the writer, allowing the use of haul seines under the immediate supervision of Commission fishery technicians to accomplish three major objectives: 1) to determine the effect of commercial fishing operations upon game fish populations and sport fishing, 2) to discover the potentialities of the commercial fisheries, and 3) to partially level out the disrupted economy of the areas affected by the ban on commercial fishing. Under this program, commercial fishermen were allowed to take catfish and other "rough" fish, but were required to return all game fish, and to assist the biologists in obtaining data from their catches. At the time of its inception, this plan had the backing of the chief representatives of both opposing groups.

The principal areas included in the survey were Lake Okeechobee, and that part of the St. Johns River known as Lake George and connecting waters in the immediate vicinity, all of which had been major locations of fresh-water commercial and sport fisheries since their settlement. In addition, it was possible to make similar studies in other large Florida lakes in connection with "rough fish" control operations. Effort was concentrated upon learning the species composition of the adult fish population through the medium of the haul seine, the composition of the catch by various commercial fishing devices and their probable effect on game fish populations, age, growth, and food habits of the dominant species, and creel census data. Methods used and results obtained have been previously reported (Dequine 1948, 1951a, 1951b).

RESULTS

The major conclusions of the almost three years of investigations were that:

1. Considerable fluctuation in seasonal and annual composition of the adult fish populations occurred, but these fluctuations could not be attributed to commercial fishing operations.
2. The life span of the black bass, the black crappie, the bluegill and redear (shellcracker) was comparatively short; an almost complete replacement and turnover occurred within two to three years.
3. Black bass, adult crappie, gar, bowfin, and large channel catfish were piscivorous, in direct competition for the available supply of forage fishes, while bluegill, redear (shellcracker), bullheads and small channel catfish competed for the available aquatic insects and other foods used in common; large gizzard shad made up a significant proportion of the population, and while their effect was not so noticeable in Lakes George and Okeechobee, they were definitely found suppressing desirable species in other waters studied.
4. While no harmful effects of commercial fishing operations on game fish populations and angling were evident, it was impossible to denote any significantly beneficial effects during the period studied.

5. Past records on the commercial fishery for catfish, bream and crappie showed considerable variance in annual production, but no overall decline had occurred. Market and other economic conditions and weather had the greatest influence on the annual yields of the fishery, judging from statements and records of reliable fishermen. Conservatively estimated potential annual yields of the commercial fisheries were 100,000 to 400,000 pounds of black crappie, 100,000 to 700,000 pounds of bream, and 2.5 to 3 million pounds of catfish from the St. Johns River, and 200,000 to 500,000 pounds of crappie, 300,000 to 500,000 pounds of bream, and 1.5 to 2 million pounds of catfish from Lake Okeechobee.
6. No valid data were obtained to indicate a reduction in the total annual yield of black bass to the angler, although an increase of 3 to 4 times the amount of angling pressure over recent years was reflected in increased fishing license sales, and expansion of fishing camps and other angling facilities available in the areas considered. Creel census data revealed that more than 90 pecent of the effort of the angler in the Lake George-Okeechobee areas was expended toward catching black bass.
7. A review of opinions of fishery scientists and available data on experimental control of species other than those desired by the angler indicated that benefit to black bass production and angling would accrue from the commercial removal of all other species.

These conclusions, with supporting data, were presented in a report to the Commission in July, 1950, along with detailed recommendations for the management of the commercial fisheries. Some of the former opponents of commercial fishing violently protested, although they had agreed to abide by the outcome of the survey at the time of its inception. Objections and feelings ran so high among one extremely vocal group of "sportsmen" that they castigated not only the professional ability of the writer and his assistants, but their integrity and character as well. As a result, the Commission (on suggestion of the writer) submitted the report to a panel of disinterested, nationally known fishery scientists to determine whether the conclusions reached were valid. This panel, composed of R. H. Eschmeyer, O. Lloyd Meehean, F. G. Walton Smith, and H. S. Swingle, unanimously endorsed the presentation of the data and the conclusions reached, and urged that the recommendations be put into effect with a continuation of the investigation. Many other fishery workers among whom the report was circulated made similar comments. The same violent group of opponents then countered that fishery workers as a group are prejudiced in favor of commercial fisheries, and reverted to demanding restocking and more law enforcement as a cure for Florida's fishing ills.

Fortunately, however, these opponents do not represent all of the angling public of Florida, nor even a majority, although up until recently they have been the loudest. Many other groups of sportsmen are requesting that the commercialization of the bream and crappie be again legalized and extended to waters other than Lake George and Lake Okeechobee on a trial basis to determine whether improved bass fishing will result. Considerable effort has been expended in educational programs in some localities, and presumably as a result, this sentiment appears to be expanding.

Present Status of Florida's Problem

At the present writing it is impossible to predict the outcome of this hot controversy. Even the five-man Commission is divided on whether to brave the ire of the opponents and try the program for a few years, or to wait until the "heat" from the proponents prevails. It is hoped that a decision will have been reached by the time of publication of this paper so that question may be at least temporarily settled.

The Problem of Public Sentiment

The problem of public antagonism toward the harvesting of surplus game and rough fishes and to commercial fishing in general is not one that is confined to Florida. Fishery workers in Illinois (Bennett 1950), Michigan (Westerman 1948), Tennessee (Eschmeyer, Stroud, and Jones 1944, Manges 1951), Alabama (Miller 1951, Swingle 1950), Iowa (Rose 1949), Indiana (Ricker and Gottschalk, 1941), and Texas (Toole, Marion, personal communication,1950) are among those who have suggested that regulated harvest by commercial methods of species not extensively used by the angler would provide better fish conservation. Replies to a recent questionnaire sent to state fishery managers by the writer indicated that many others are in possession of evidence sufficient to convince them that such action is desirable, but adverse public sentiment prevents its application.

The problem presents several important questions and challenges to the fishery manager which seem worthy of discussion here. What are the causes of this apparent overwhelming public disapproval of commercial fishing? Indubitedly, the commercial fisherman himself is to blame to a large degree. The dumping of edible fish during adverse market conditions, the thoughtless destruction of undersized or less valuable species taken in certain fisheries, and the fisherman's disdain in many instances for regulations aimed at perpetuating his own industry have incurred the wrath of conservationists generally. In short, his attitude of "exploiting" rather than wise harvesting has placed him in disrepute.

Also at fault are some writers, commentators, and columnists on out-door subjects whose popularity and livelihood depend on a good audience, and who have found that "cussing the commercial fisherman" gains the sympathy of their public. Few publicists in this category have taken the trouble to inform themselves of the facts surrounding commercial fishing and fishery biology, and some resist any attempt to educate them through demonstration, research, or statistics.

A fair-sized finger of guilt can also be pointed at many professional fishery technicians themselves, who have found it convenient to follow the popular idea of condemning commercialization without thorough investigation, or by reaching so-called "logical" conclusions concerning the decline of fishing success. Some years ago, Van Oosten (1935) pointed out that certain "logical" deductions concerning the selectivity of fishing gear, fishery statistics, and effects of pollution were not justified when subjected to relatively uncomplicated research. Many other programs such as the indiscriminate stocking of hatchery fish, fish rescue, closed seasons, and size limits have only recently been critically analyzed, and their limitations defined. Is it any wonder that the profession lacks public confidence when faced with so many contradictions in policy? Certainly lack of funds for conducting tests on the effectiveness of these program cannot be a valid "excuse" for dodging our responsibility for many of these errors.

Suggested Methods of Approach

If it is assumed that controlled commercialization is a necessary and desirable tool for promoting better fish conservation, how can the adverse public sentiment be overcome? The obvious answer, by education, provides a major challenge to the fishery manager. The commercial fisherman, generally unreceptive to magazine articles and other literature, must be convinced that his excesses and disregard for regulations are largely responsible for his present plight. He must be shown the necessity for the restrictions imposed upon him by persons who are as familiar with his industry as he is, and who can demonstrate that the laws are based on factual data obtained from his operations, and not upon "logical" deductions which are often refuted by his experience. To accomplish this objective the fishery manager needs an intimate knowledge of the fishery and personal contacts with many of its participants.

In the case of the sportsman-publicist, a special effort must be made through personal contact and demonstration of an intimate knowledge of his interests, as well as those of the commercial fisherman. Sufficient irrefutable facts must be available and well presented, and controversial points must be clearly defined with as few qualifications as possible. The fishery manager must understand the problems of the writer or commentator in supplying his audience with information having public appeal.

As for the fishery biologist himself, he must learn from past example that his proposed management practices must be based on facts and conclusions which have been thoroughly analyzed and examined critically. If he will examine carefully the reasons for the enactment of restrictive commercial fishing regulations, he will find in many instances that there was little *valid* evidence of depletion due to overfishing available at the time of enactment, but that "logical" deductions, sentiment and opinion, and an absence of facts concerning the effect of commercial fishing were largely responsible. He must constantly be aware of the possibility that his conclusions may be immature and subject to correction and modification. Armed with these data, he must embark upon an educational program which makes use of every possible outlet — press, radio, public demonstrations, and personal contacts.

CONCLUSION

The present-day fishery manager cannot confine his activities to gathering facts, drawing conclusions, and making recommendations. He must, in addition, become a salesman and an educator if he is to accomplish his objective, whether it be the removal of an unnecessary regulation, the adoption of a new program, or other. The problem of creating favorable public sentiment must be attacked with the same vigor and care applied to fish population analysis, a food habits study, or a creel census.

In Florida, fishery biologists are convinced that controlled commercial fishing operations are the only practical method available to provide more successful fishing trips and better utilization of the fishery resources of the state's large natural fresh waters. Greater emphasis on educating the public to the the facts supporting this conviction is planned. It is hoped that Florida's experience with this difficult problem will be of value to workers elsewhere.

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