

CHARACTERISTICS AND OPINIONS OF THE OKLAHOMA ANGLER*

James B. Mense

Oklahoma Fishery Research Laboratory, University of Oklahoma, Norman, Oklahoma 73019

INTRODUCTION

The main responsibility of the fishery manager is to conserve, and whenever possible, to enhance fish and wildlife populations. Enhancement, however, means many things to many people. Before a fishery manager can ethically define and embark on a program of fishery enhancement he must have input from many sources; primary among these sources should be the fishing public. This survey was designed to provide this input and thereby increase awareness of the needs and desires of the Oklahoma angler.

Except for a report based on 1968 data (1) no recent survey has been made of the preferences, opinions, or characteristics of Oklahoma fishermen. Oklahoma changed between 1968 and 1976, however. Five new reservoirs were completed and the striped bass, *Morone saxatilis*, gained prominence as an Oklahoma sport fish. Walleye, *Stizostedion vitreum*, were widely introduced, as were two forage species, Mississippi silversides, *Menidia audens*, and threadfin shad, *Dorosoma petenense*. In addition, the Florida largemouth bass, *Micropterus salmoides floridanus*, was introduced to Oklahoma and approximately 224,000 additional resident fishermen were licensed. These changes in both the fish and angler populations have made an updated preference and opinion survey necessary.

METHODS

Prior to this survey, a questionnaire was sent to a preliminary sample of 100 anglers to pretest the questionnaire and determine the extent of response. The sample was not selected according to any design, as statistical reliability was not intended. Of the 100 preliminary questionnaires mailed, 10 (10%) were undeliverable. Of the remainder, 48 (53.3%) were returned. The first reminder yielded an additional return of 17 (40.5%) of the 42 questionnaires mailed, while the second reminder produced 9 (36.0%) of the 25 mailed. Overall, the three mailings produced 74 (74%) usable returns. In general, the anglers who completed the test questionnaire seemed to find it acceptable and comprehensible. Certain changes in the questionnaire did result from this test, however.

With preparation complete and a 74% overall return anticipated, a sample of approximately 5% of Oklahoma's licensed resident anglers was drawn from returns of available receipts of fishing and combination hunting and fishing licenses sold during 1976. The procedure followed was to use the first legible license stub from each available book of license stubs. From the results of our test questionnaire, the 5% sample was considered adequate to insure returns from at least a 2.5% sample of anglers. An attempt was made to stratify the survey by county so that a 5% sample of the anglers in each county would have an opportunity to respond. However, this was not possible for two reasons: First, license receipts were available from less than 70% of the licenses reportedly sold, and second, the last year in which records of license sales were kept by county was 1964. Many ponds and reservoirs have been built since 1964, the distribution of population has changed, and these two factors have undoubtedly altered the distribution of fishing license sales in Oklahoma.

Nevertheless, a 5% stratification by county was attempted by multiplying the proportion of total licenses sold in each county in 1964 by a factor representing the ratio (1.24) of total statewide resident license sales in 1976 to total sales in 1964.

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Calculations were performed separately for resident fishing and for combination hunting and fishing licenses.

A letter explaining the purposes of the survey, a postpaid return envelope, and a questionnaire were sent to each of 23,189 resident anglers. Exactly four weeks after the initial mailing a reminder was sent, along with a duplicate questionnaire, to 15,224 non-respondents. A second reminder and duplicate questionnaire were sent exactly four weeks later to 11,544 of those not responding to the reminder. Returns of initial and reminder questionnaires were tabulated separately in order to examine possible response differences among the three groups. So that results could be compared to the 1969 survey, responses to questions 3 and 4 were assigned "quality points" on the following scale: 5 points for each first choice, 3 points for each second choice, and 1 point for each third choice (1). Responses to question 14 were assigned points on a declining scale from 5 to 1 for first through fifth choice respectively.

RESULTS

Of the 23,189 questionnaires mailed, 4,030 were undeliverable. Of the 19,159 licensed Oklahoma anglers receiving a questionnaire, 10,076 (52.6%) responded. Of these 10,076 respondents, 85.1 percent were repeat license purchasers in 1977. Surprisingly, 8.5 percent of those purchasing licenses in 1976 did not fish. Rod and reel was the most popular fishing method with 93 percent of respondents reporting that as their favorite method. Trotline fishermen made up 4.7 percent of the remaining 7 percent. Natural bait (53.4%) was more popular than artificial lures (39.6%) and more fishermen apparently fish from the bank (49.5%) than from boats (40.5%).

More fishermen spend most of their time fishing large reservoirs (45.6%) and farm ponds (19.9%) than in Department of Wildlife Conservation lakes (9.3%), although on a per acre basis, Department lakes receive the most fishing pressure (2).

The Oklahoma angler spends an average of 34 days and 5.2 hours per day fishing. This angler also drives 40 miles to pursue the sport and this may reflect the fact that 71.5% of the respondents were urban dwellers. Anglers preferred to catch larger bass, even if these were not as numerous. Almost 43 percent said they would rather catch one, fifteen-inch largemouth bass, *Micropterus salmoides*; 30.4 percent preferred to catch two, 12-inch fish; while only 26.9 percent preferred to catch four, nine-inch fish when asked to choose one of the three options.

Largemouth bass was the most sought after of the 15 fishes listed on the questionnaire and was also the most preferred (Fig. 1). Largemouth was closely followed by crappie, *Pomoxis* spp., and channel catfish, *Ictalurus punctatus*. White bass, *Morone chrysops*, and flathead catfish, *Pylodictis olivaris*, respectively were the fourth and fifth most sought after of the fishes listed; more people would prefer to fish for walleye, trout, *Salmo gairdneri*, and striped bass if these fish were more readily available. Many anglers apparently fish for white bass and sunfish, *Lepomis* spp., because of their availability, but do not prefer to fish for these species.

With regard to needed measures to improve fishing, most anglers chose stocking some kind of fish as their first choice, and these items received the most quality

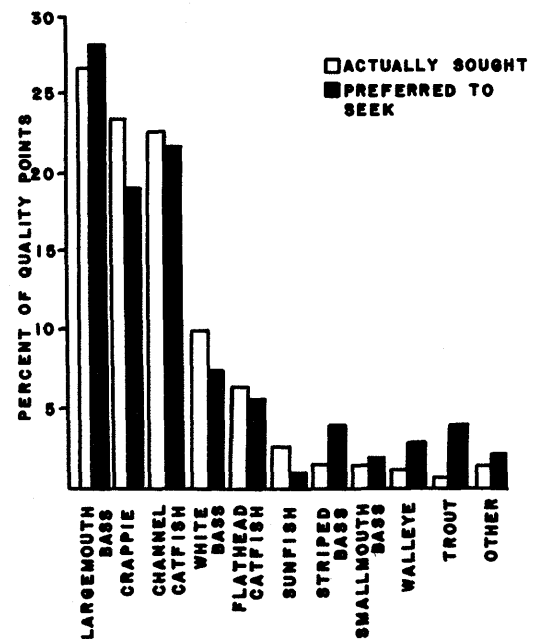


FIGURE 1. Popularity and preference of anglers for 15 types of Oklahoma fishes.

points (39,350). The black basses were the preferred fishes to stock. The second and third most popular measures were to increase the number of bank fishing areas and construct more fish habitat structures. These items received 15,636 and 14,514 quality points respectively. Other measures emphasized were control of aquatic vegetation and control of rough fish through commercial fishing. Changing regulations to either restrict or increase harvest of game fishes were unpopular, as all choices involving regulation netted only 663 total quality points.

DISCUSSION

Perhaps the most significant change detected between the 1969 survey and the current survey was the change in relative popularity of the largemouth bass. Largemouth bass received 26.8% of the popularity points in 1969 and were the second most fished for species. In 1976, they had moved to first place in popularity and received 26.7% of the popularity points.

The two most popular fishing methods in 1976 were the same as in 1969: casting with natural bait and artificial lures. Fishing from the bank and from boats were the two most popular locations from which to fish in both surveys.

The average number of hours fished was virtually identical in both surveys; however, both the mean distance traveled and the mean number of days spent fishing were greater in 1976. The number of days fished increased 21% from 1969 to 1976, while the number of miles driven per trip increased 14%. The percentage of Oklahoma anglers residing in urban areas apparently did not change, since 72% of the responses in both surveys indicated an urban residence. About 15% of Oklahoma anglers are apparently casual buyers and do not purchase a new license each year. An estimated 8.5% of licensees did not fish during 1976.

As already noted, an estimated 42.7% of Oklahoma's anglers preferred to catch one fifteen-inch bass, and 73.1% would rather catch either two twelve-inch or one fifteen-inch bass than four nine-inch fish. However, only 16.7% of these anglers chose "initiate length limit regulations" as one of their five choices of measures needed to improve fishing in Oklahoma. In contrast, 41.8% of the questioned anglers listed "stock more black bass" as a way to improve fishing. From these results, it appears that Oklahoma anglers overwhelmingly prefer to catch a few larger bass rather than several smaller ones; however, these same anglers apparently believe stocking more bass is the method to be used to achieve this result.

In summary, several inferences of interest to management biologists can be made from the results of this survey. These inferences reveal the challenges to be faced in fisheries management in the years ahead:

1. Anglers appear to differ from fishery professionals in their emphasis on management techniques to optimize Oklahoma sport fishery potential.
2. There is a desire for more facilities, such as bank fishing areas.
3. There is a desire for emphasis on largemouth bass, channel catfish and crappie.
4. There is a need to provide for wider distribution of trout, striped bass, and walleye where habitat is suitable.
5. A need for programs to maintain angling quality in the face of not only increased numbers of fishermen (as reflected by license sales), but also an increase in fishing effort by anglers.

The degree to which these needs and desires are met will, in large degree, determine the future quality of the angling experience in Oklahoma.

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