

Maryland Sea Grant



RESEARCH NOTES

ANGLER RESPONSES TO A SALTWATER SPORT FISHING LICENSE AND STRIPED BASS MORATORIUM IN THE CHESAPEAKE BAY

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EDITORS' PREFACE

In 1985 the State of Maryland passed a bill requiring anglers to buy an annual license for sport fishing in the Chesapeake Bay. The aim was to ensure that sport fishermen would contribute towards Maryland's Bay restoration program. At the same time, because of a decade of continuous declines in striped bass abundance, the Maryland Department of Natural Resources halted all recreational and commercial harvest of the state's premier sport fish. Since striped bass are big business in the Bay region, there was concern about how anglers would react to the license requirement and the moratorium, specifically whether it would influence their fishing participation in the Bay.

With support from the University of Maryland Sea Grant Program and the Maryland Department of Natural Resources, Anthony Fedler, Cynthia Grove and Deborah Evans set out to examine those reactions. Beginning in the summer of 1986, the first year of a two-year study, they conducted extensive telephone interviews to compare differences in fishing participation between 1984 (before the license requirement and moratorium), and 1985. Data were also taken for 1986, though this represented only half of that fishing season. The major answers initially sought were:

The extent and frequency of fishing trips by year.

Angler support (or nonsupport) for the fishing license and the striped bass moratorium, including the effect on their fishing participation.

A comparison of responses between Maryland anglers living in coastal county areas and inland county areas, in addition to comparisons between Marylanders and those from out of state.

Having completed the first phase of their interviews, Fedler and his colleagues have been developing profiles of Chesapeake Bay sport fishermen. What follows is a summary of their findings and a preview of the second phase of the project.

INTRODUCTION

While the effects of the the fishing license and striper moratorium were not expected to have a long-term impact on sport fishing, there was no documented evidence to assess just what changes might result in fishing behavior in the Chesapeake. Since recreational fishing affects

related businesses--from sporting goods stores and bait shops to hotels and restaurants--the uncertainty, even for the short term, was an unsettling one.

Most previous fisheries policy evaluation studies have only examined impacts on the resource; few have examined changes in angler behavior resulting from regulatory actions or implementation of various management plans.

An objective analysis of the effect on anglers, it was felt, could provide a number of valuable benefits, among them, a clearer understanding of different fishing "publics" and the extent to which each public has been affected by these recent policy decisions. In addition, such information could be useful in evaluating alternatives for future management strategies.

METHODOLOGY

During April and May of 1986, the researchers employed two separate telephone surveys to identify anglers who fished in the Chesapeake Bay prior to and following implementation of the fishing license and striped bass moratorium.

The first survey was designed to identify inland and coastal Maryland residents who had fished in the Bay. During April and May of 1986, survey interviewers contacted 1,021 households, of which 97.7 percent agreed to complete the telephone interview. The survey recorded the number of people in the household who had fished the Bay in 1984, 85 or 86; the interviewers then questioned one fisherman per household. The survey technique for choosing households, "random digit dialing," was conducted by the Maryland Survey Research Center; the technique assured the survey would be objective and not affected by geographical or other bias.

A second survey, posing the same questions, was added to telephone interviews conducted by the National Marine Fisheries Service; these covered the states of Maryland, Virginia and Delaware.

FINDINGS

Fishing Patterns by State

The combined surveys found that of 4,728 households agreeing to complete the interview about 20 percent had at least one Bay angler. The percentage of those who fished in the Chesapeake during 1984 and in 1985, when the fishing license and moratorium were first instituted, was essentially the same across the three states.

The surveys also found that a greater percentage of Delaware fisherman bought licenses than did fishermen in Maryland or Virginia. This was to be expected, since Virginia does not require a license for their part of the Chesapeake and some Maryland fishermen are exempt from the license (e.g., if fishing from their own land or private pier or fishing on a chartered boat).

Among the three states there were significant differences in the level of support for the sport fishing license. Over 70 percent of Maryland and Delaware anglers gave slight, moderate or strong support; however, nearly 40 percent of Virginia anglers did not approve of the license. In contrast, support for the striped bass moratorium was very high among anglers from all three states with Virginia overall reporting significantly stronger support.

Maryland Coastal and Inland Resident Bay Fishing Patterns

The Maryland Survey Research Center interviews were designed to produce information that the National Marine Fisheries Service could not provide, namely, identifying inland Maryland residents who fished the Bay. (Inland areas were defined as all counties located more than 25 miles from the coast, estuaries or major bays; they accounted for the remaining 30 percent of the households surveyed.)

While fewer numbers of inland county Chesapeake Bay anglers were found in the random survey, the percentage of inland area anglers fishing in 1984 and 1985 were nearly identical;

additionally there was not much variation in fishing participation between 1984 and 1985, when the license and moratorium regulations became effective.

In comparing the frequency with which coastal and inland Maryland fishermen made trips to the Chesapeake Bay in 1984 and 1985, again no significant differences were found. Still, the percentage of inland area anglers who reported taking more or the same number of trips in 1985 as in 1984 is notable, since it was slightly greater than that of coastal fishermen.

Some 67 percent of Bay anglers from coastal counties and 75 percent from inland counties approved or strongly approved of the sport fishing license. In addition, approval of the license did not differ significantly between Bay anglers residing in either coastal or inland counties. Extremely strong approval of the striped bass moratorium was reported by Bay anglers from both coastal and inland counties. Over 90 percent of the anglers from both areas approved or strongly approved of the moratorium.

Cooperation of Bay Anglers with Mail Survey

Because the second phase of the study will depend on mailed questionnaires, the first phase has sought differences between anglers who agreed to complete and return such a questionnaire and those who did not. Implications of this type of information are important for evaluating potential biases in the responses.

Delaware fishermen tended to be more cooperative than Maryland and Virginia anglers with regard to providing their names and addresses for receiving a follow-up questionnaire and were more cooperative in their responses. A significant difference in the willingness to cooperate was found between coastal and inland fishermen: almost three-quarters of the fishermen in the Maryland coastal counties agreed to complete the questionnaire compared with less than half of the inland group. Cooperating anglers were generally those who had fished the Bay in 1985: only 67 percent of the noncooperating anglers fished the Chesapeake in 1985, compared with 87 percent of the cooperating anglers. Overall, cooperative fishermen were much more likely to have purchased the sport fishing license than noncooperating fishermen in both surveys. The largest percentage of anglers purchasing the license was found in Maryland.

Although the percentage of cooperative anglers fishing in the Chesapeake and purchasing the license was greater than noncooperative anglers, the percentage of anglers who took more, the same number, or fewer Bay fishing trips in 1985 than in 1984 was not significantly different between the two groups.

SUMMARY

Several general observations can be drawn from this first phase of the study. To begin with, it is difficult to conclude from the data that the license or moratorium had any direct influence upon fishing behavior. The percentage of anglers fishing the Bay during 1984 and 1985 was virtually the same. Though about 15 percent of the anglers fishing the Bay in 1984 did not fish there in 1985 a similar percentage who fished there in 1985, had not fished the Bay in 1984. In short, the fishermen leaving in 1985 were replaced by new fishermen. Whether or not these anglers entering or exiting the Bay fishery represent "normal" rates that would be found each year is unknown, since there is no historical data to provide baseline comparisons.

A related question is raised by the finding that even though over one-third of Maryland anglers paid for a license in 1985 they nevertheless took fewer trips in that year than in 1984. Likewise, a lower percentage of Maryland fishermen took more fishing trips to the Bay in 1985 than 1984, when compared to anglers from other states. This decline in frequency again raises the question whether or not this is a normal occurrence or whether there were specific factors (like the fishing license or moratorium) which exerted an influence on these fishing participation changes.

The phase II mail survey is designed to provide a fuller understanding of these factors.

While 30 percent of the Maryland anglers surveyed said they did not support the license at all or disapproved of the license requirement altogether, examination of changes in the 1984-

1985 annual fishing frequency and support for the fishing license and moratorium resulted in no significant relationships. Evidently, the decision to fish the Bay during 1984, 1985 or both years was independent of the individual's attitude toward the license or moratorium.

One measure of fishing activity not explored in this initial phase was annual fishing frequency. While this measure of fishing activity may be of general importance in understanding the influence of the license and moratorium on fishing participation, it appears that for the most part Bay anglers from inland Maryland counties did not differ from those in coastal counties, either in participation or attitudes toward the license and moratorium, though coastal anglers were more willing to cooperate in the mailed survey.

Because anglers who have agreed to cooperate in the mail survey were more likely to have purchased the fishing license than noncooperating anglers, a response bias will be prevalent in the results of the phase II data collection. The analysis will have to be weighted within the context of the above findings to ensure that we do not underrepresent the lack of support of the noncooperating angler and its effects on variations in Chesapeake Bay sport fishing.

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