

ATTITUDES TOWARD SUSTAINABILITY AND REGULATION OF STRIPED BASS BY CHATHAM FISHERMEN

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Striped Bass are a varying source of income for 131 Striped Bass commercial fishermen from Chatham, Massachusetts. For some it is the main source of income until the harvest limit of 238,000 lbs. is reached, then alternative fisheries must be sought. The purpose of this descriptive study was to investigate licensed Chatham Striped Bass fishermen beliefs about the sustainability of Striped Bass fish stock and attitudes toward regulations of the fisheries. No significant statistical differences in beliefs about sustainability or attitudes toward regulations could be discerned between those commercial fishermen who rely on Striped Bass as their primary source of income and those who don't. Chatham commercial Striped Bass fishermen are generally positive in their beliefs about the sustainability of the bass and attitudes toward regulations, but believe that harvest allotments could be increased and that greater coordination is needed with other states.

Introduction

The harvesting of the Striped Bass (*Morone saxatilis*) gained early prominence as a commercial fish and more recently as a sporting fish. The largest population of this species migrates yearly along the Atlantic coast from the Chesapeake Bay to Massachusetts. Over the years the sporting qualities and demand for this fish as a seafood delicacy resulted in over harvesting; fisheries management was subsequently introduced which imposed regulations governing size (minimum of 36") and season (determined by total weight harvested). Other regulations have focused on the licensing of harvesters. All Striped Bass fisherman, sport or commercial, who wish to sell their catch are licensed, families may also obtain a permit to catch and keep one fish per week for personal consumption. Because of the demand for the Striped Bass by both sportsman and those who depend on it for their livelihood, conflicts have developed. Commercial fishermen believe they should have prominence over sportsmen and be able to increase their total catch. The harvest allotment is currently limited to 238,000 lbs. per year. Little is known, however, about the attitudes of these commercial harvesters regarding the sustainability of this fishery or their views toward the regulations that have been implemented.

The purpose of this research is to examine the differences in attitudes toward the sustainability of the Striped Bass and management regulations between those who are licensed full-time commercial fisherman and those who are licensed but considered to be part-time because they do not depend on the fisheries as their primary source of income. Two research questions drive the study: 1) what are the attitudes of licensed fisherman toward the sustainability of the resource stock and their attitudes toward the current regulations; 2) are there differences in attitudes between commercial full-time and those labeled as part-time anglers toward the sustainability of striped bass.

Methods

A mail questionnaire was sent to a census sample of the 1993 Striped Bass license holders of the town of Chatham, Massachusetts. This list of license holders was obtained from the Massachusetts Division of Marine Fisheries. The list consisted of 131 names and addresses. A single mailing to license holders was used due to the limited budget of the researcher. Included in this one time mailing was a cover letter, the survey questionnaire, and a self-addressed stamped envelope to return the survey. The fishermen were questioned about their opinions and attitudes toward the sustainability of Striped Bass, attitudes toward regulations, and their support for increases in minimum size and harvest allotment. To distinguish between full-time commercial fishermen and part-time fishermen, who may sell their catch commercially, a question was asked about whether the respondent's harvest of Striped Bass was the main source of their income during the bass season. Responses were analyzed using StatView statistical package.

Results

Of the 131 surveys mailed to Chatham license holders, three of the surveys were undeliverable due to an invalid address. Eighty one of the deliverable surveys were filled out and returned, representing a 62 percent return rate.

Approximately twelve percent of the respondents indicated that the harvesting of bass was the main source of their income during the Striped Bass season, 87.7% responded that it was not the main source of their income, even though they were licensed to sell their catch commercially. Twenty five percent of the respondents had been Striped Bass fishing 10 years or less, 21% have fished between 11 and 20 years, 28% have fished 21 to 30 years, and 27% indicated they had been fishing 31 to 60 years.

Decline of Striped Bass

Approximately 46 percent of the respondents believed Striped Bass were declining, almost 40 percent disagreed (Figure 1). This indicates a generalized split in opinion among the commercially licensed Striped Bass fishermen

Current Rate of Harvest and Species Sustainability

Figure 2 indicated that about two thirds (64.2%) of the respondents believe that if the current rate of harvesting is sustained, future populations of Striped Bass will be assured. About a quarter of the respondents disagreed. Comments from respondents indicated that many believed increased harvests could be supported.

Current Regulations

Three out of five (59.6%) of the respondents believed that with the current regulations enforced, the future of the fish will be assured (Figure 3). Almost one quarter (23.5%) take a neutral position to ward this question This indicates that commercial fishermen appear satisfied with the current regulations but believe enforcement is needed.

Sufficient Striped Bass for Commercial and Sport Fishermen

Slightly less than three quarters (71%) of the respondents believe that there are enough Striped Bass for both the sport fisherman and the commercial fisherman. Approximately 13.5 percent feel that there are not enough for both, and 16.1 percent are neutral to this statement. (See Figure 4.) Chatham license holders appear to maintain a consistent belief that there are sufficient striped bass for harvesters.

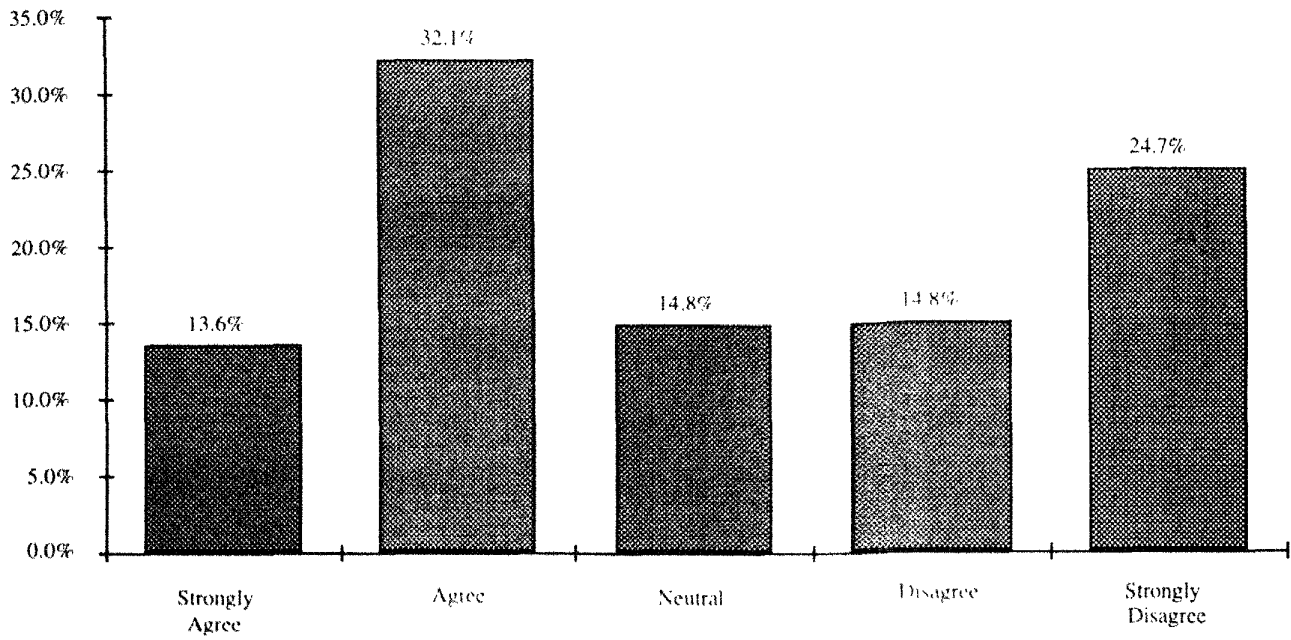


Figure 1. Number of Striped Bass have declined since respondent began fishing.

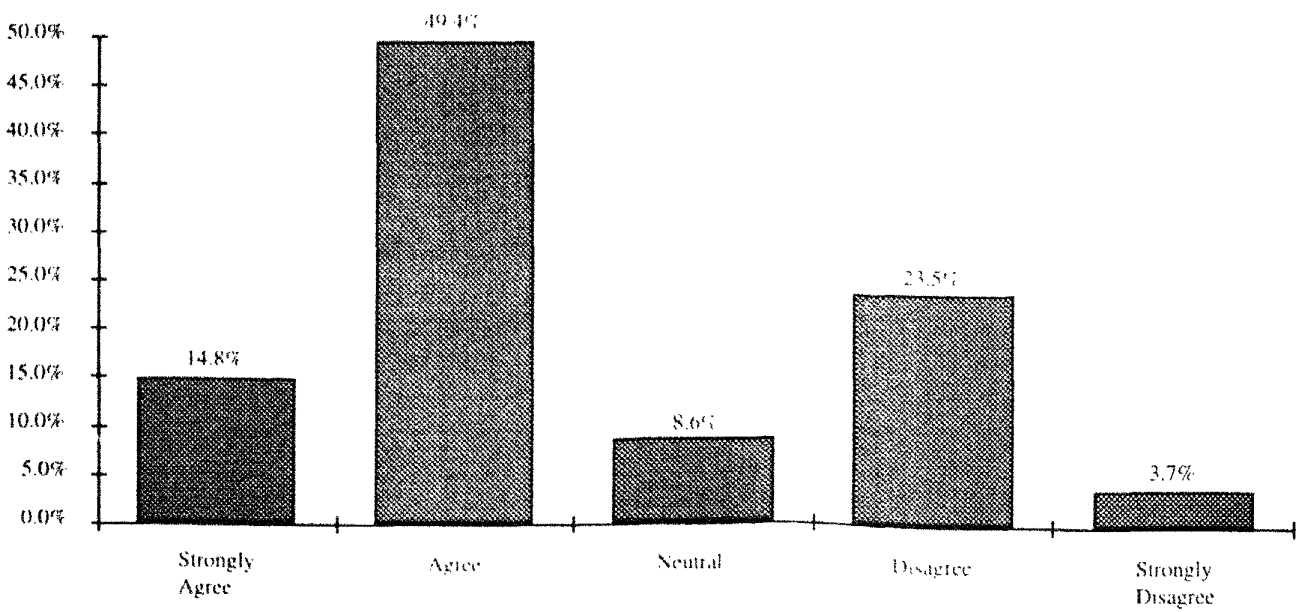


Figure 2. Respondents agreement that the current rate of harvest will assure sufficient populations of Striped Bass.

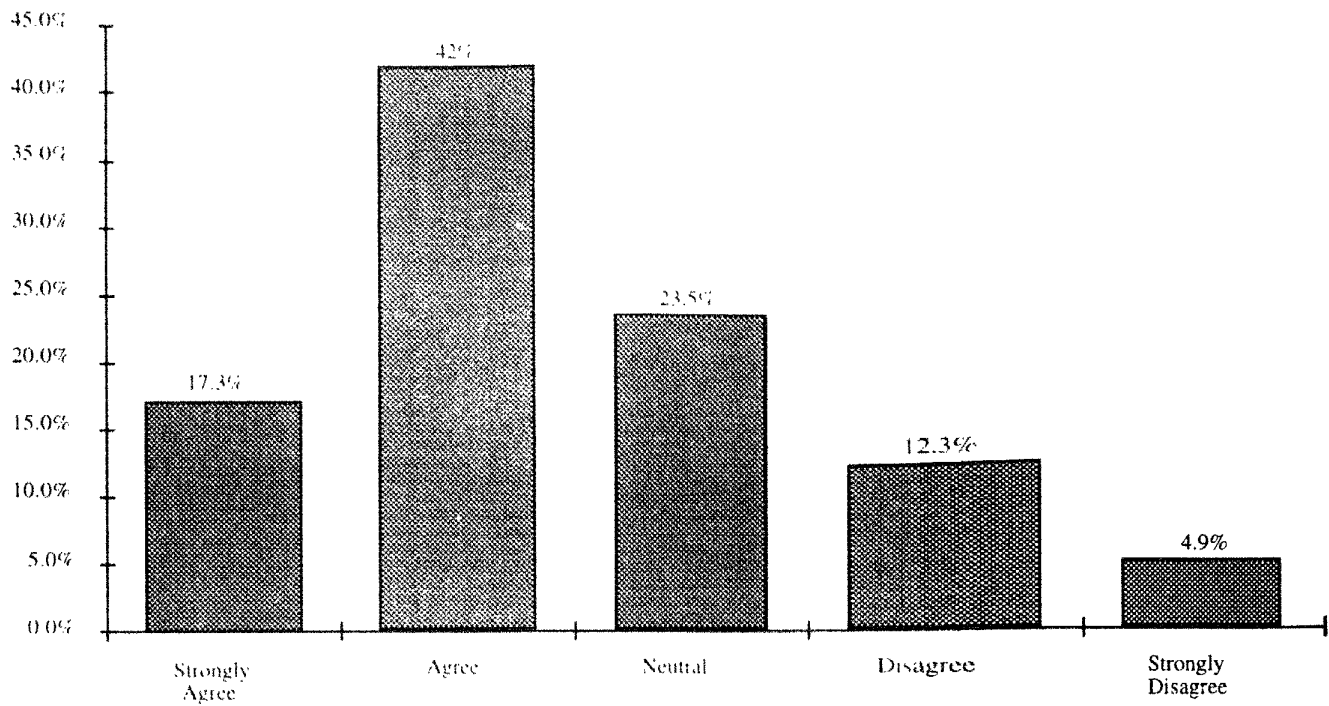


Figure 3. Enforcement of the current regulations will assure the sustainability of Striped Bass.

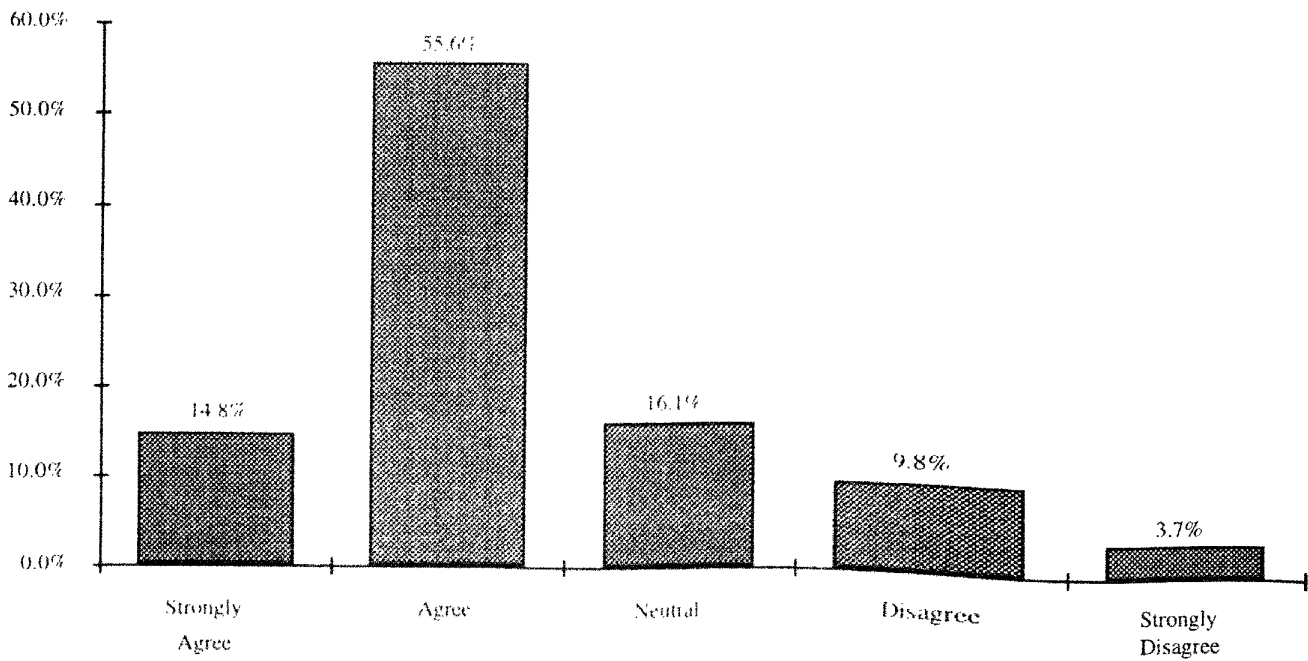


Figure 4. Sufficient Striped Bass for both sport and commercial fishermen.

The results of chi-square analysis indicated no significant relationship between the type of fishermen and attitudes toward the sustainability of Striped Bass. Similarly, there was no relationship between type of fishermen and attitudes toward enforcement of regulations governing their harvesting (see Table 1). Those who harvest Striped Bass as a primary source of income during the season had a greater percentage of respondents who agreed that the number of Striped Bass had declined and that

current levels of bass were sufficient. Not unexpectedly, a greater percentage of those who harvest Striped Bass as a primary source of income also believed that over-harvesting by sport fishermen was a the main reason for poor commercial fishing. A larger percentage of part-time harvesters (i.e., not the primary source of income) believed that the current rate of harvesting would assure future populations of the species.

Table 1. Attitude differences between full and part time commercial fishermen toward sustainability and regulation of Striped Bass.

Issues	Agree		Disagree		Neutral		Chi-Square
	Primary Source of Income	Not Primary Source	Primary Source of Income	Not Primary Source	Primary Source of Income	Not Primary Source	
	(Percent)	(Percent)	(Percent)	(Percent)	(Percent)	(Percent)	
Number of Striped Bass have declined	60.0	43.7	40.0	39.4	0.0	16.9	3.246*
There are sufficient Striped Bass for commercial and sport fisherman	80.0	69.0	10.0	14.1	10.0	16.9	0.930*
Over-harvesting by commercial fisherman is main reason for poor commercial fishing	20.0	26.8	70.0	60.6	10.0	12.7	2.405*
Over-fishing by sport fishermen is main reason for poor commercial fishing	40.0	26.8	50.0	49.3	10.0	23.9	1.376*
Current rate of harvesting Striped Bass will assure sufficient future populations	50.0	66.2	40.0	25.4	10.0	8.5	2.853*
Through enforcement of current regulations the future of Striped Bass will be assured	60.0	59.2	10.0	18.3	30.0	22.5	1.348*

Discussion and Implications

Those who harvest Striped Bass as a primary source of income (i.e., full-time fishermen) and those who are part-time harvesters of Striped Bass have similar positive beliefs about the sustainability of Striped Bass fisheries and hold similar attitudes toward enforcement of regulations on harvesting. Both groups, however, would like to see an increase in the total harvest allotment beyond the current 238,000 lbs., but over eighty percent of the fishermen believe the size limit should remain at 36 inches. This suggests that if the issuance of licenses remain at the same level, marine fisheries managers would have support in increasing the harvest allotment, enabling the Striped Bass season to be maintained for an extended period of time and enhancing the economic return for commercial fishermen in the Chatham area.

While Chatham, Massachusetts fishermen support the 36" limit on the minimum size of Striped Bass to be taken, many of the respondents commented that greater coordination is needed with other states along the migratory path of the bass. Striped Bass migrate along the eastern seaboard, spawning in Chesapeake Bay and Hudson River then migrate north along the coast in the late spring. Currently two other states allow harvesting of Striped Bass at 28 inches, depleting the stocks of smaller fish and spawners. As a result, Massachusetts fishermen are more stringently regulated and their potential economic return is limited. This may explain why relatively small numbers of the Chatham commercial harvesters rely on Striped Bass as their primary source of income. Massachusetts Marine Fisheries managers may have succeeded in educating the commercial harvesters about the necessity of regulations for maintaining the sustainability of the fish stock, but they should address the issue of coordination with other states to quell the growth of the seeds of discontent expressed by these commercial fishermen.

Town of Chatham

