

Appendix 5.4-B

Recreational Intercept  
Survey Report

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# **RECREATIONAL INTERCEPT SURVEY**

January 2003

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## **BACKGROUND**

The purpose of this survey was to collect information on the recreational fishing effort and the abundance of recreational fish species in the Nantucket Sound area. This survey was designed to be answered by the captains or crew of recreational fishing charter and party boats. A charter boat is a boat that is reserved in advance by a small group of anglers that pay a set fee. A party boat is a boat that accepts individually paying passengers on a first come first serve basis and takes these individuals (often more than 20 people/boat) for a day or half day of fishing. The survey was primarily concerned with gathering recreational fishing information from the three alternative wind farm siting locations in Nantucket Sound: Horseshoe Shoal, Monomoy (approximately 7 nautical miles west of Monomoy Island), and Tuckernuck (approximately 6 nautical miles north of Tuckernuck Island in the vicinity of Tuckernuck, Long, and Norton shoals). Figure 1 shows the locations of these sites (all figures accompanying this Recreational Intercept Survey analysis are located at the end of the report).

The information gathered by this survey will help to determine the recreational fishing effort by charter or party boats in Nantucket Sound and to determine the potential impact the Cape Wind Project may have on this specific sector of the local economy. The results from this survey will be useful, when combined with the commercial and recreational data gathered from federal and state agencies, in the characterization of Nantucket Sound and the potential impacts its biological and economic resources may face.

## **METHODS**

The original plan for this task was to visit the two busiest ports (according to the Cape Cod Chamber of Commerce: Hyannis harbor and Falmouth harbor) on Cape Cod on various days during the late summer. At these two ports, the captain or crew of charter or party fishing vessels would be asked to respond to the various questions on the survey. However, after considering the logistics of this survey procedure, it was determined that the survey may be best conducted over the telephone. A telephone survey would be able to reach a wider range of potential respondents because captains operating from ports other than Hyannis and Falmouth harbors could be contacted. In addition, calls could be placed at those times when the captains would most likely be in port. Finally, with a telephone-based survey, a phone number could be called until the captain was reached.

The methodology for the telephone-based recreational intercept survey is consistent with that used for the National Marine Fisheries Service (NMFS) Marine Recreational Fisheries Statistics Survey (MRFSS) as confirmed by personnel in the NMFS Northeast Regional office. NMFS personnel from the Northeast Regional office further indicated that the choice of a telephone intercept survey is appropriate for the type of information to be collected (the number of trips, generalized location, anglers aboard and generalized species caught). However, NMFS did note that MRFSS has found that telephone intercept information is less reliable for specific catch data but can be used for fishing effort. Because the purpose of this survey was to gauge the effort of charter and party boats, it was concluded that the telephone survey would be adequate.

The survey was conducted between August and November of 2002 and consisted of nine questions, some of which contained more than one part (see Attachment A). The survey questions covered a range of topics relevant to local recreational fishing, including: the frequency with which the survey respondents visited the three specific fishing sites; the preferred fish species and the most frequently caught species at these sites; the months of the year when these species are caught; the changes in trip frequency and catch numbers experienced at each site; and the characteristics of the vessel.

An effort was made to survey a cross-section of the Nantucket Sound fishing community. To identify potential survey respondents, the telephone numbers of charter/party fishing companies were obtained from the Yellow Pages™ of the towns surrounding Nantucket Sound, including Martha's Vineyard and Nantucket Islands. To supplement the numbers found in the phone book, Internet searches were performed. Approximately fifty-five charter/party fishing companies were identified. Ten of these were eliminated from the survey because they were no longer in business, thereby narrowing the field of potential survey respondents to approximately forty-five. Of this forty-five, thirty surveys were completed over the phone. The remaining fifteen companies were difficult to

reach and although messages were left, calls were not returned. Thirty completed surveys was determined to be an adequate number for analysis by using a sample size calculator provided by Creative Research Systems, an online survey research software development company. To determine the sample size necessary for a 95% confidence level, the total population (forty-five) was entered into the provided calculator along with the confidence interval (10.45). Thirty was found to be the necessary sample size from a population of forty-five. This calculator can be found at <http://www.surveysystem.com>.

Phone calls were placed to the charter/party fishing companies primarily during the early morning and late afternoon. The potential survey respondents were informed that the survey was “an attempt to collect information on the abundance and distribution of recreational fish species in the Nantucket Sound area.” Each survey lasted approximately five to seven minutes. The answers given by the respondents were handwritten on separate survey worksheets. For survey questions requiring a numerical answer, if the respondent gave a range as his or her answer, the average of that range was used for this analysis. Following the phone call, the handwritten sheets were entered into an electronic database. A copy of the form used in the survey is provided in Attachment A. The detailed survey responses are not included with this report to maintain confidentiality of the survey respondents.

## **RESULTS**

Of the thirty surveys completed, five companies were located on Nantucket Island, eight on Martha’s Vineyard (primarily from Edgartown, Oak Bluffs, and Chilmark), five were from the Falmouth area, six from Harwich, four from Chatham, and one from Hyannis. One company on Nantucket had two charter boat captains who operated different vessels and both of these captains were surveyed. A summary of the responses to each question is provided below.

### ***Question 1. Do you operate a party boat or charter boat?***

The vast majority of survey respondents (twenty-seven out of thirty, or 90%) were operators of a charter fishing vessel. The remaining three respondents operated party fishing vessels, although these three companies also owned charter boats. In these cases, since the survey was designed to learn about one vessel per recreational fishing company, the respondent was asked to relate his or her answers to the party fishing boat rather than the charter fishing boat. The three party boat companies were located in Harwich, Falmouth, and on Nantucket Island.

### ***Question 2. In the past 12 months, how many days did your boat go saltwater fishing?***

Most survey respondents reported fishing at least 150 days in the last twelve months. Seven respondents reported fishing between 150 and 179 days (inclusive) charter/party fishing while six reported between 120 and 149 days (see Figure 2 for the results from this question). Only two companies reported charter/party fishing over 209 days in the past twelve months and one reported fewer than thirty days. Many of these companies take more than one charter/party fishing trip per day. Therefore, the number of fishing days per year does not necessarily correspond to the total number of trips.

### ***Question 3. How many of the following types of fishing trips (half day, full day, evening) did you take to Horseshoe Shoal, the Monomoy area, or the Tuckernuck area in the past 12 months?***

Figure 1 shows the locations of Horseshoe Shoal, the Monomoy area, and the Tuckernuck area. The respondents were also given the option of naming another site they visit with charter/party trips. If the respondent gave a range of numbers as his or her answer, then the average of that range was used for this analysis. For the purpose of this question, half-day trips were defined to last approximately four hours, although some companies define “half-day” as a five-hour trip. Full-day trips were defined to last eight hours and above. Evening trips included both evening and nighttime hours as well as overnight trips.

According to the survey respondents, the majority of half-day trips were taken to sites other than Horseshoe Shoal, the Monomoy area, or the Tuckernuck area (Figure 3). These sites included Squibnocket, Elizabeth Islands

(3 responses), Vineyard Sound, South Beach, Nauset, Buzzards Bay, Stage Harbor, "Old Man", close to shore in Harwich/Dennis area, Canyons, regions south of Martha's Vineyard (3 responses), Nantucket Shoals, Muskeget Channel, and Great Point. Of the 1,752 half-day trips reported by survey respondents, 702 (40%) were to these other sites. The next highest number of half-day charter/party fishing trips (452 or 26%) were taken to the Monomoy area and the third highest number of half-day trips (429 or 24%) were taken to the Tuckernuck area. Finally, Horseshoe Shoal had the fewest reported half-day trips with only 169 (10%) in the past twelve months.

Unlike the half-day fishing trips, the majority of survey respondents reported visiting the Monomoy area fishing sites for full-day trips (Figure 4). Out of 430 full-day trips reported, 242 (56%) were taken to the Monomoy area, ninety (21%) full-day trips were taken to Horseshoe Shoal, thirty-eight (9%) were taken to sites in the Tuckernuck area, and sixty (14%) were taken to sites other than these three. These "other" sites included regions east of Monomoy (2 responses), regions south of Martha's Vineyard, and regions southeast of Nantucket.

There were a total of 156 evening or overnight charter fishing trips reported by the survey respondents (Figure 5). None of the party fishing companies offered evening or overnight trips. Of these 156 trips, 30 (19%) were taken to the Tuckernuck area and 126 (81%) were taken to fishing sites other than the three primary areas. These "other" sites included Boston B buoy, the Canyons (2 responses), regions east of Monomoy, and Nantucket Shoals. No evening or overnight trips were taken to Horseshoe Shoal or the Monomoy area.

***Question 4. What is the average number of people fishing from your vessel per trip?***

The number of passengers reported was largely dependent on the size of the vessel. Most vessels reported an average of five passengers (Figure 6). None of the charter boats reported more than six passengers per trip. The party boat companies surveyed could accommodate between twenty and thirty people fishing per trip and they are depicted in Figure 6 under ">6 people".

***Question 5. What are the three species that your parties most prefer to catch?***

Three species were reported as those that charter/party vessel passengers most preferred to catch: striped bass, scup, and tuna (unidentified species) (Figure 7). Seven species were named as the second most preferred fish species and nine species were named as the third most preferred.

***Question 6. What are the three most frequently caught species at Horseshoe Shoal, the Monomoy area, and the Tuckernuck area?***

The sixth question on the survey asked about the most frequently caught species at fishing sites. The respondent was asked to provide the top three most frequently caught species at Horseshoe Shoal, the Monomoy area, and the Tuckernuck area. Many respondents also shared the most frequently caught species at the sites included in the "Other" category. For Horseshoe Shoal, the respondents named three species: bluefish, striped bass, and bonito (see Figure 8 for the results of this survey question). For Monomoy, all the respondents agreed that striped bass was the most frequently caught species at that site and three species (striped bass, bluefish, and bonito) were named as the most frequently caught species in the Tuckernuck area. As for the fishing sites categorized as "Other", striped bass, bluefish, and bluefin tuna were named as the most frequently caught species.

***Question 7. In what months are the most fish caught?***

The seventh question on the survey asked the respondent to name the months of the year when their three most frequently caught species (see previous question) can be caught (Figure 9). Most of the respondents to this question gave a range of months in which the species in question could be found in the Nantucket Sound area (or in areas categorized as "other"). Figure 9 shows the number of respondents that reported that a certain species could be caught in a certain month. For example, twenty-two respondents reported that bluefish could be caught in July while only fourteen reported that species could be caught in September.

***Question 8. Since the year you started fishing in Massachusetts, the number of fishing trips made per year to the following sites has generally increased, decreased, or stayed the same?***

The eighth question on the survey sought to find out how charter/party fishing in Nantucket Sound has changed since the respondent began fishing there. Out of fourteen responses, five people reported that the number of charter/party fishing trips to Horseshoe Shoal had increased since they began fishing, three reported a decrease in trips, and six estimated that the number of trips had stayed much the same (Figure 10). In terms of the Monomoy area fishing sites, ten respondents judged the number of charter/party trips there had increased, one reported a decrease, and five believed the number of trips had stayed the same. Finally, four respondents reported an increase in trips to the Tuckernuck area, five believed there was a decrease, and seven thought the number of trips had stayed the same. Not every survey respondent gave an answer to this question because many of them had not visited one or more of the three sites regularly during their Nantucket Sound charter/party fishing career.

***Question 9. Since the year you started fishing in Massachusetts, the number of fish you catch per trip at the following sites has generally increased, decreased, or stayed the same?***

For the final survey question, many respondents gave more than one answer because, as they pointed out, some species have increased and some have decreased (Figure 11). As a result of

these multiple answers and unlike the previous survey questions, the results from Question 9 are given as number of *responses*, not respondents. Therefore, the number of responses reported for this question does not correspond to the number of respondents.

The changes in catch number at Horseshoe Shoal received twenty-two responses from fifteen respondents. For Horseshoe Shoal, eleven of the twenty-two responses reported that catch numbers had increased. Four responses estimated a decrease in catch numbers and seven responses reported catch numbers staying mostly the same.

The changes in catch number at sites in the Monomoy area received twenty-three responses from fifteen respondents. At this site, fourteen responses estimated that catch numbers had increased, three reported a decrease in catch numbers, and six estimated that numbers had generally stayed the same.

Finally, for fishing sites near the Tuckernuck area, twenty-seven responses were received from fourteen respondents. Out of these twenty-seven responses, fifteen estimated an increase in catch numbers, six reported a decrease in catch numbers, and six reported that catch numbers had stayed much the same.

## **FOLLOW-UP SURVEY**

During the analysis of the completed surveys, some variations in the responses indicated that the three named locations (Horseshoe Shoal, the Monomoy area, and the Tuckernuck area) may not be as specific as was originally believed. The Monomoy area, for example, is a fairly large fishing region and the original survey did not indicate which part of the Monomoy area was the target of the questions. Therefore, the decision was made to mail a follow-up survey to each charter/party vessel captain in order to acquire more accurate fishing location information. The follow-up survey asked respondents to reanswer questions 3 and 6 from the first survey. A map with three numbered locations was included with the follow-up survey. Location 1 is the Horseshoe Shoal region, Location 2 is the Monomoy region of interest, and Location 3 is the Tuckernuck region of interest. See Attachment B for the survey template and the map.

Ten captains responded to the follow-up survey. Of the ten respondents, four replied that, after examining the included map, they realized that they did not take any trips to any of the three numbered regions during the previous twelve months which would result in a greater number of trips taken to “other sites” in Question 3 compared to previous responses. Of the six other respondents, all of them had spent some time fishing in at least one of the numbered regions. Locations 1 and 3 were the most frequently named regions, with four of the six

respondents reporting fishing in Location 1 and four of the six reporting fishing in Location 3 in the past year. Location 2 was named by only one respondent and he did not report fishing in the other two areas at all.

Every respondent that reported visiting Location 1 during the previous year named bluefish as the most frequently caught species in that region which is consistent with previous responses to Question 6. Two respondents shared the second and third most frequently caught species in Location 1, with one respondent reporting striped bass and bonito and the other respondent reporting fluke and bonito. Bluefish was also named the most frequently caught species at Location 3 by every respondent which is also consistent with previous responses to Question 6. A variety of species were named as second most frequently caught, including striped bass, bonito, and fluke. The one respondent who reported visiting Location 2 named scup as the most frequently caught species, followed by striped bass and fluke, respectively.

From the ten responses to the follow-up survey, it would appear that Locations 1 and 3 are more frequently visited than Location 2 by charter/party fishing vessels. In addition, bluefish is the most frequently caught species of fish by charter/party fishing vessels at all three sites.

## CONCLUSIONS

There are far more charter fishing companies than party fishing companies presently using Nantucket Sound and its surrounding fishing sites. Therefore, the majority of recreational vessels fishing in these waters have six or fewer passengers fishing per trip. With six or fewer passengers per vessel per trip, charter vessels may also catch fewer fish per trip than party boats, which generally carry twenty or more passengers at one time.

When compared to the popularity of other fishing sites in the Nantucket Sound area, Horseshoe Shoal does not appear to be the favorite for charter/party fishing excursions of any time length. In fact, two survey respondents stated, unless they are searching for bluefish, many recreational vessels avoid Horseshoe Shoal because other species are rarely found there. The follow-up survey added insight into the popularity of this location. In the follow-up survey, four of ten respondents reported having fished in Horseshoe Shoal within the previous twelve months. In addition, every respondent that reported fishing in Horseshoe Shoal also reported that bluefish were the most frequently caught species there. Therefore, the original and follow-up surveys are consistent with one another, in that both surveys found that Horseshoe Shoal was popular primarily for bluefish.

Half-day charter/party fishing trips seem to have been the most popular form of excursion within the past twelve months. Evening and/or overnight trips are much less frequent and many survey respondents stated that they did not offer them at all. The original survey found the Monomoy area to be the favorite site for full day charter/party fishing trips, with Horseshoe Shoal as a distant second favorite. The reasons for the Monomoy area's popularity for full-day trips is not fully understood, although it may be related to the apparent abundance of striped bass—a preferred species for most passengers. However, it is not clear why this site popularity is only evident for full-day trips. The Monomoy area is a frequently visited site for half-day trips but the site does not dominate for shorter trips as it does for longer trips. The follow-up survey provided different answers to this question. In fact, the Monomoy area was fished in the previous twelve months by only one respondent to the follow-up survey. Horseshoe Shoal and the Tuckernuck area were much more popular fishing grounds with the respondents to the follow-up survey. The discrepancies between the original and follow-up surveys are likely due to the map being provided with the follow-up and the resultant ability of the respondents to be more geographically precise in their answers.

The survey question pertaining to the month(s) in which particular species were likely to be caught provides a helpful “timeline” of species abundance in the Nantucket Sound area. According to respondents to the original survey, striped bass are most likely to be caught during the early to mid-summer months while bluefish are most likely to be caught during the mid to late summer. Bonito appear to be caught primarily in August, with very few respondents reporting them before July. Summer flounder (fluke) also appears to be caught most likely in August; although, unlike bonito, fluke can be found throughout the summer months. Scup, black sea bass, and tautog all appear to be caught primarily between May and October.

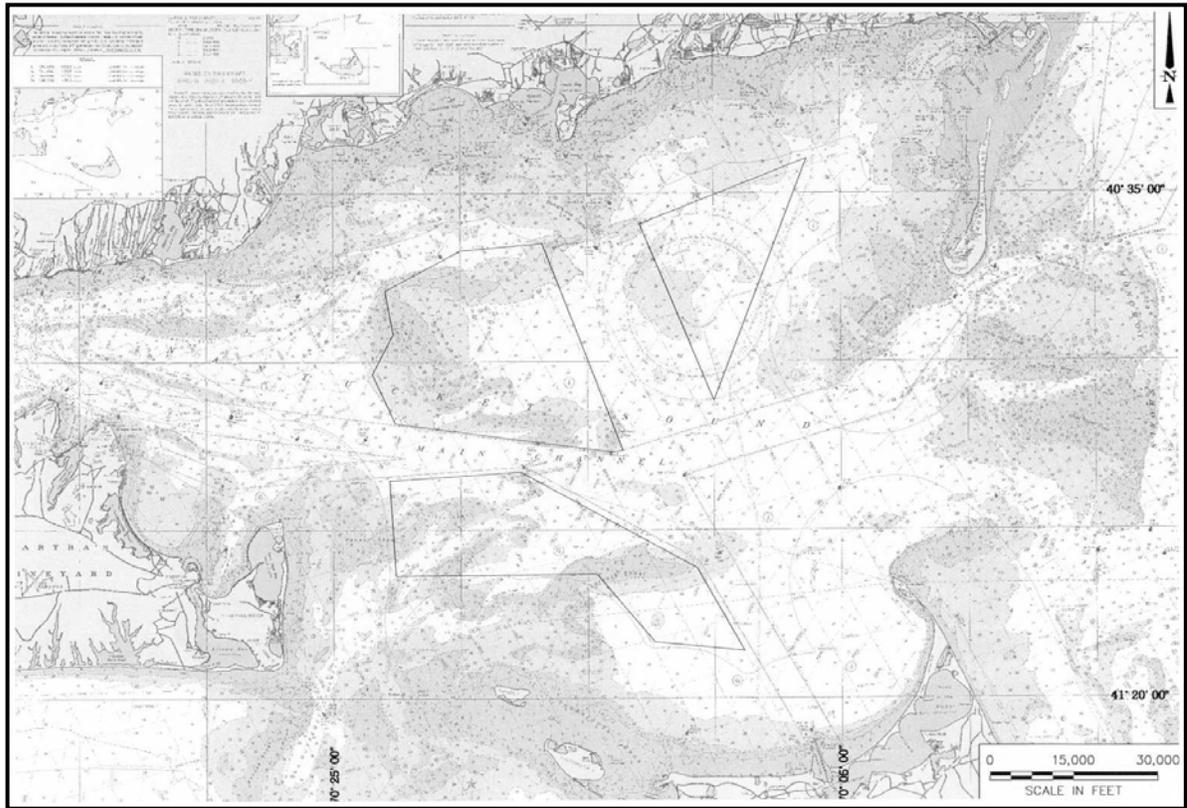
The number of charter/party fishing trips in recent years to Horseshoe Shoal appeared to have either increased or stayed the same, although the survey responses generally failed to give a strong picture of the changes in excursion frequency. The Monomoy area, however, seems to have experienced a charter/party fishing “boom” in recent years, with ten of sixteen respondents reporting an increase in the number of trips to that site. This increase may be due to the

abundance of striped bass in the area (see the comment for Figure 8) and to the preference most passengers have for striped bass. The survey responses concerning the Tuckernuck area, like Horseshoe Shoal, did not give a strong indication as to the changes in charter/party fishing trips. The fact that both Horseshoe Shoal and the Tuckernuck area did not exhibit a clear-cut pattern may indicate that visits to these sites have more to do with the personal preferences of the captain and/or passengers than they do with quality of fishing.

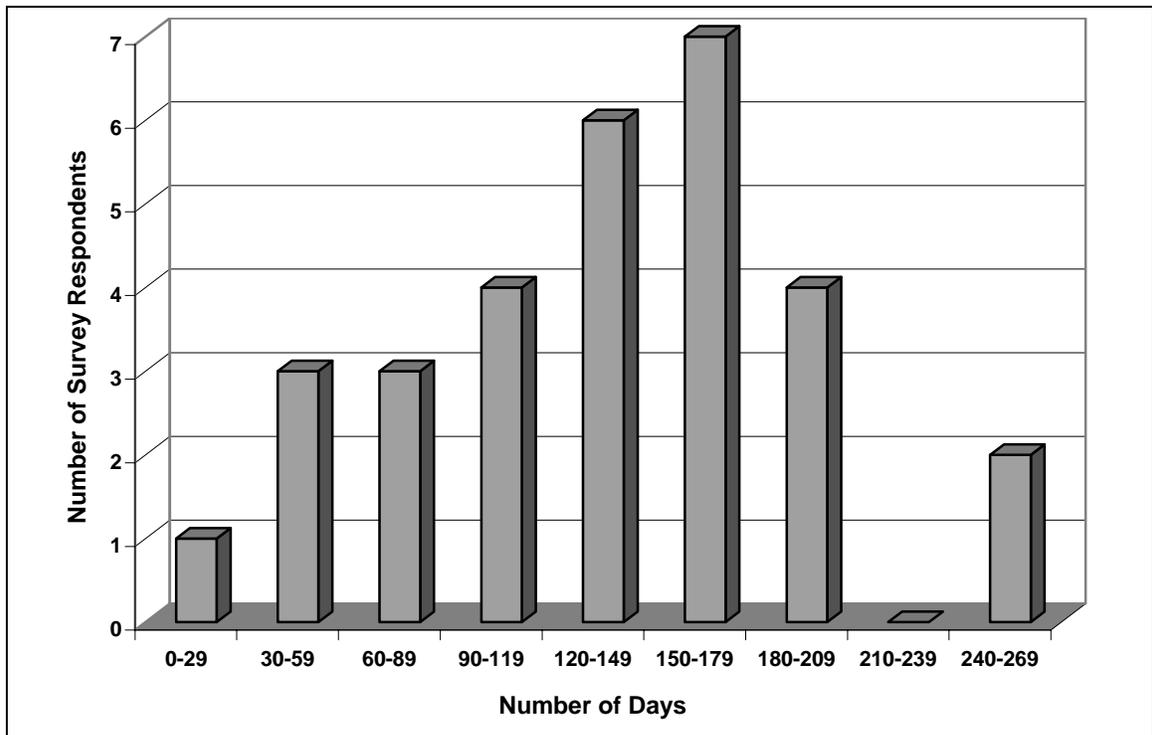
As far as changes in the number of fish caught per charter/party fishing trip, the survey results show that most of the survey respondents believed general catch numbers have increased at all three sites. However, due to the relative subjective nature of this question, there was significant disagreement among survey respondents, with many believing numbers had decreased or stayed the same.

In conclusion, the original surveys show that charter vessel companies (which dominate the recreational fishing industry on Nantucket Sound) do not frequently visit Horseshoe Shoal with their passengers, when compared with the frequency of visits to the other sites (the Monomoy area, the Tuckernuck area, and “other” sites). Striped bass is the species that passengers most prefer to catch and the catch numbers of striped bass have apparently increased in recent years. Bluefish, the species cited as the most frequently caught at Horseshoe Shoal, appears to have decreased in catch numbers. Most species sought by charter/party vessels are caught between May and October. The follow-up survey respondents provided slightly different responses, although given the small sample size, the reliability of these results are in question. The follow-up survey found that the Monomoy area was not frequently visited by charter/party fishing vessels, while Horseshoe Shoal and the Tuckernuck area were equally often (four out of ten respondents) reported as sites visited in the previous twelve months. Finally, the follow-up survey respondents replied that bluefish were by far the most frequently caught species at Horseshoe Shoal and the Tuckernuck area. These responses were consistent with the original survey responses. Scup was the most frequently caught species at the Monomoy area, although there was only one respondent reporting this information.

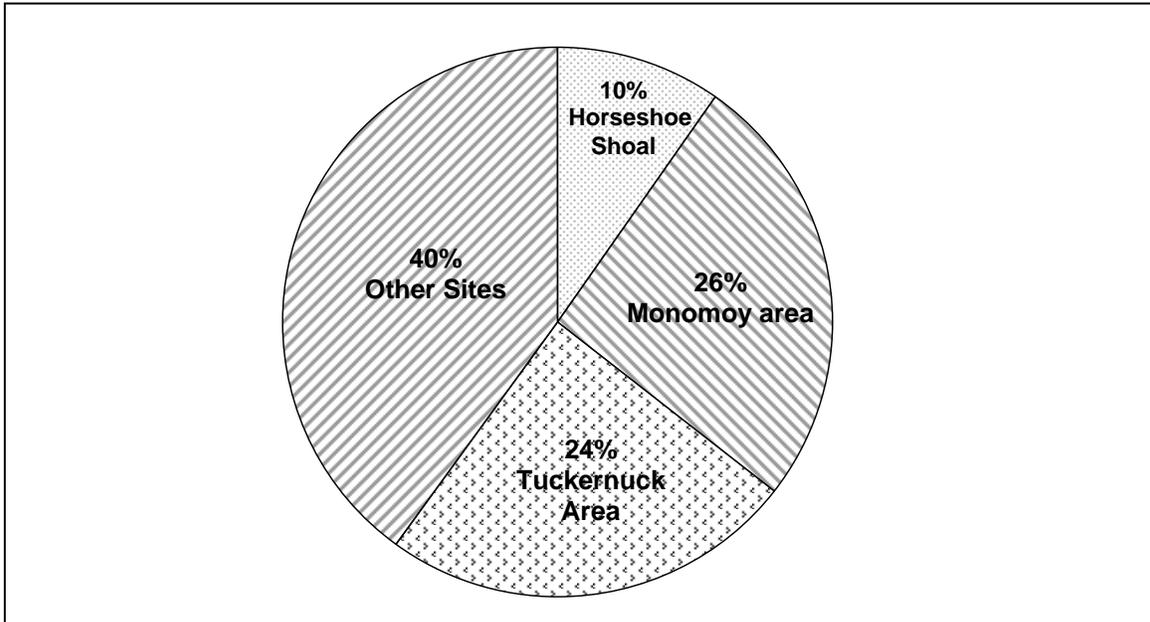
**Figure 1: The Locations of the Three Alternative Sites in Nantucket Sound**



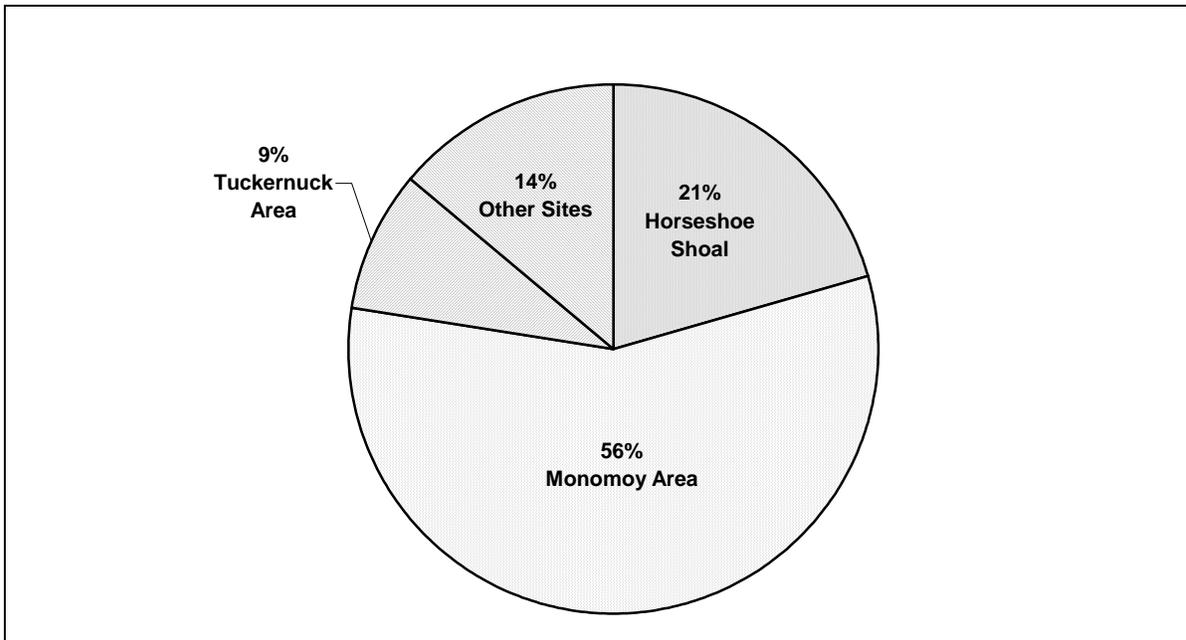
**Figure 2: Number of Days Spent Charter/Party Vessel Fishing in Previous Twelve Months**



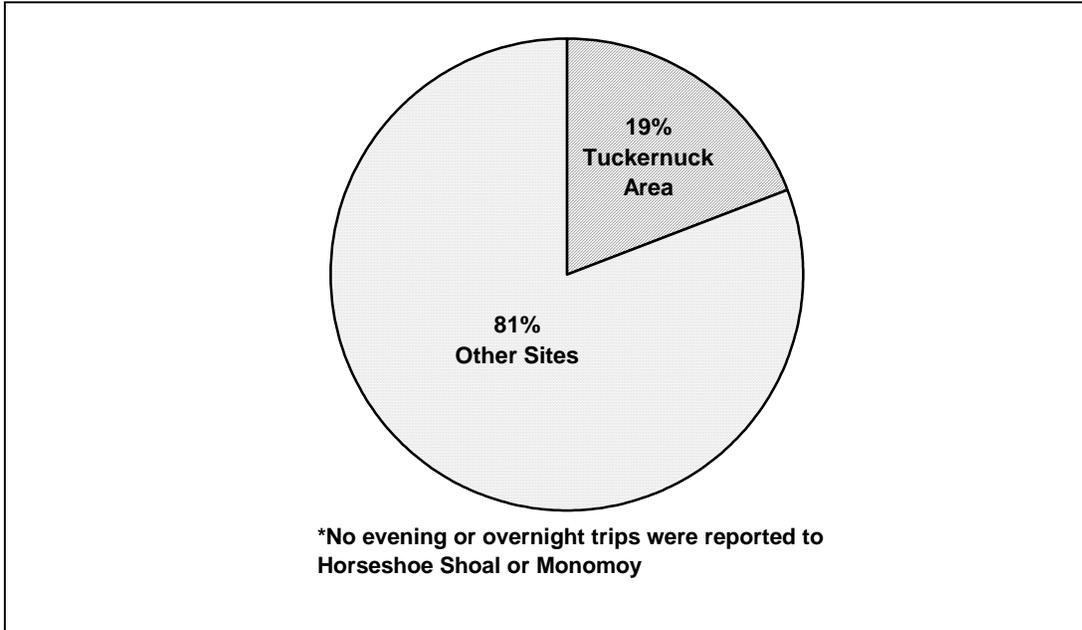
**Figure 3: Number of Half-Day (~4 hours long) Charter/Party Fishing Trips in Previous Twelve Months**



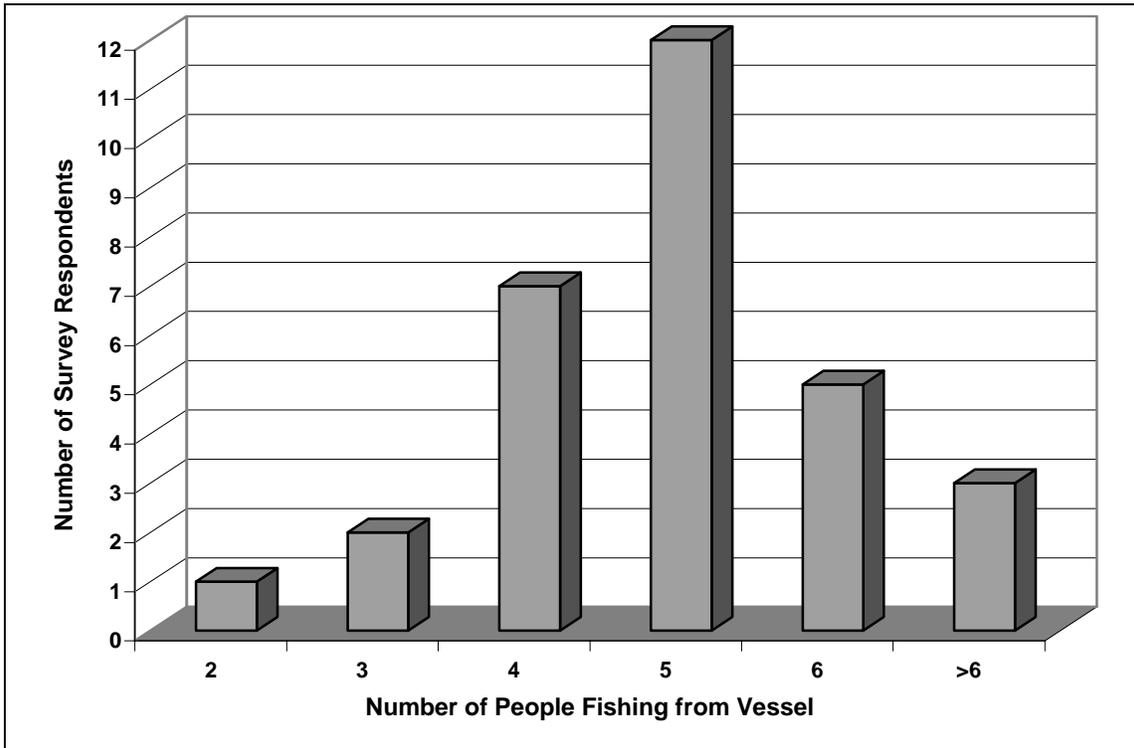
**Figure 4: Number of Full-Day (~8 hours long) Charter/Party Fishing Trips in Previous Twelve Months**



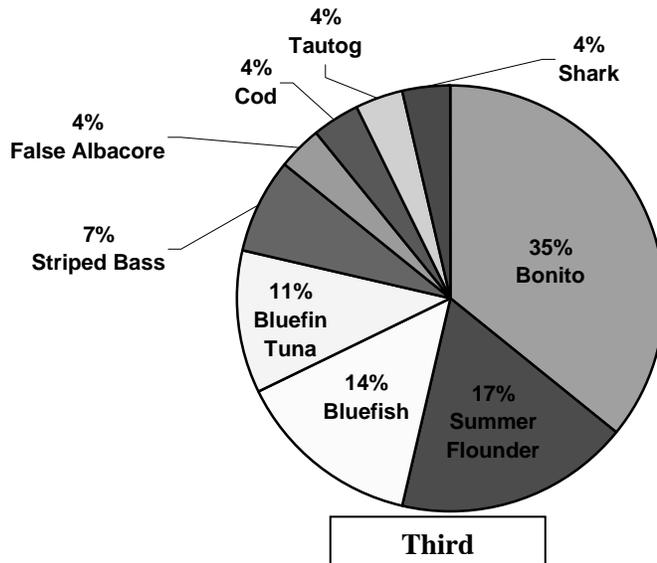
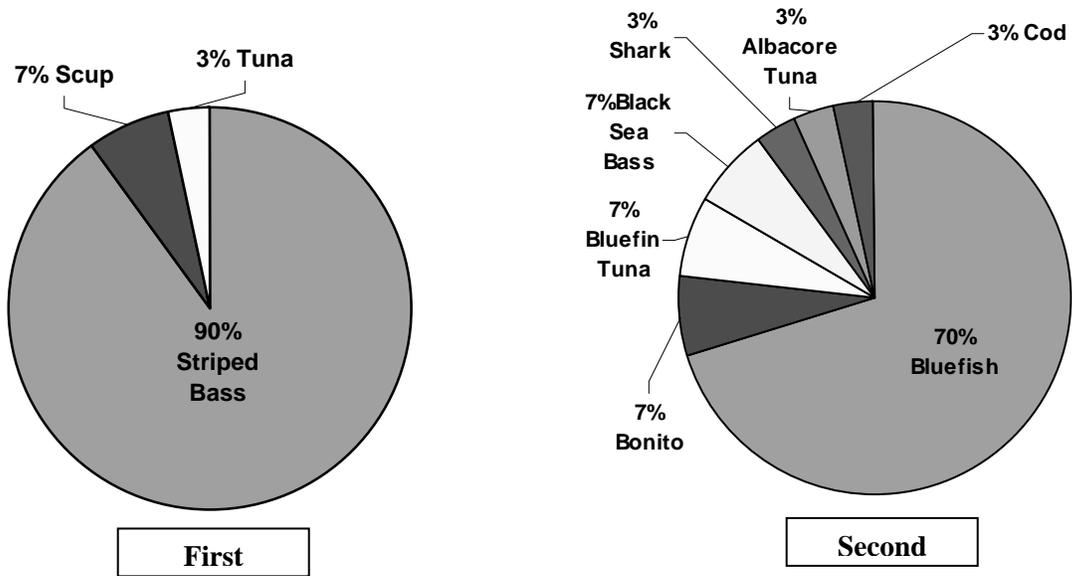
**Figure 5: Number of Evening/Overnight Charter Fishing Trips in Previous Twelve Months\***



**Figure 6: Average Number of Passengers Fishing from Charter/Party Vessel Per Trip**

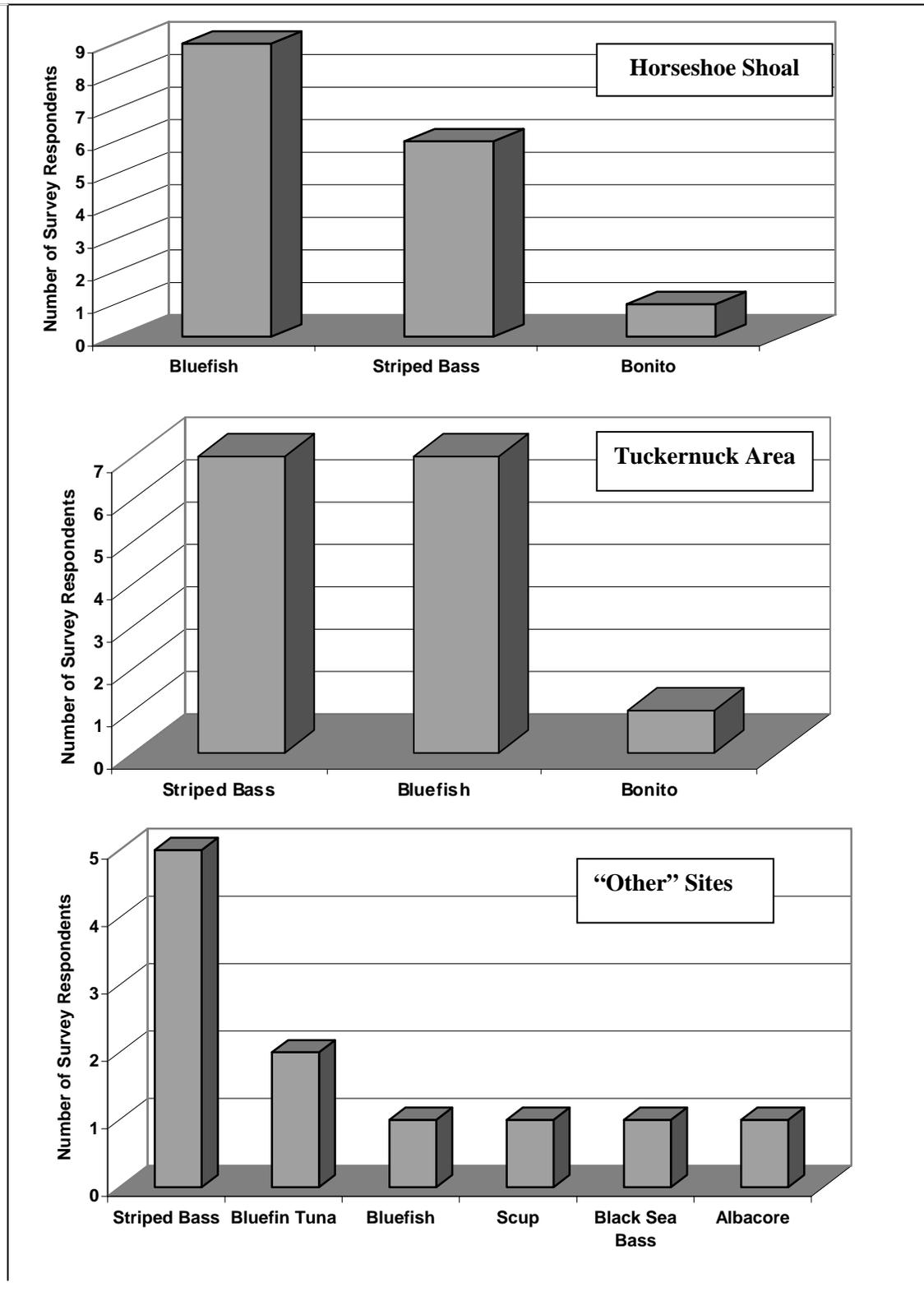


**Figure 7: The First, Second, and Third Species that Charter/Party Boat Passengers Most Prefer to Catch**



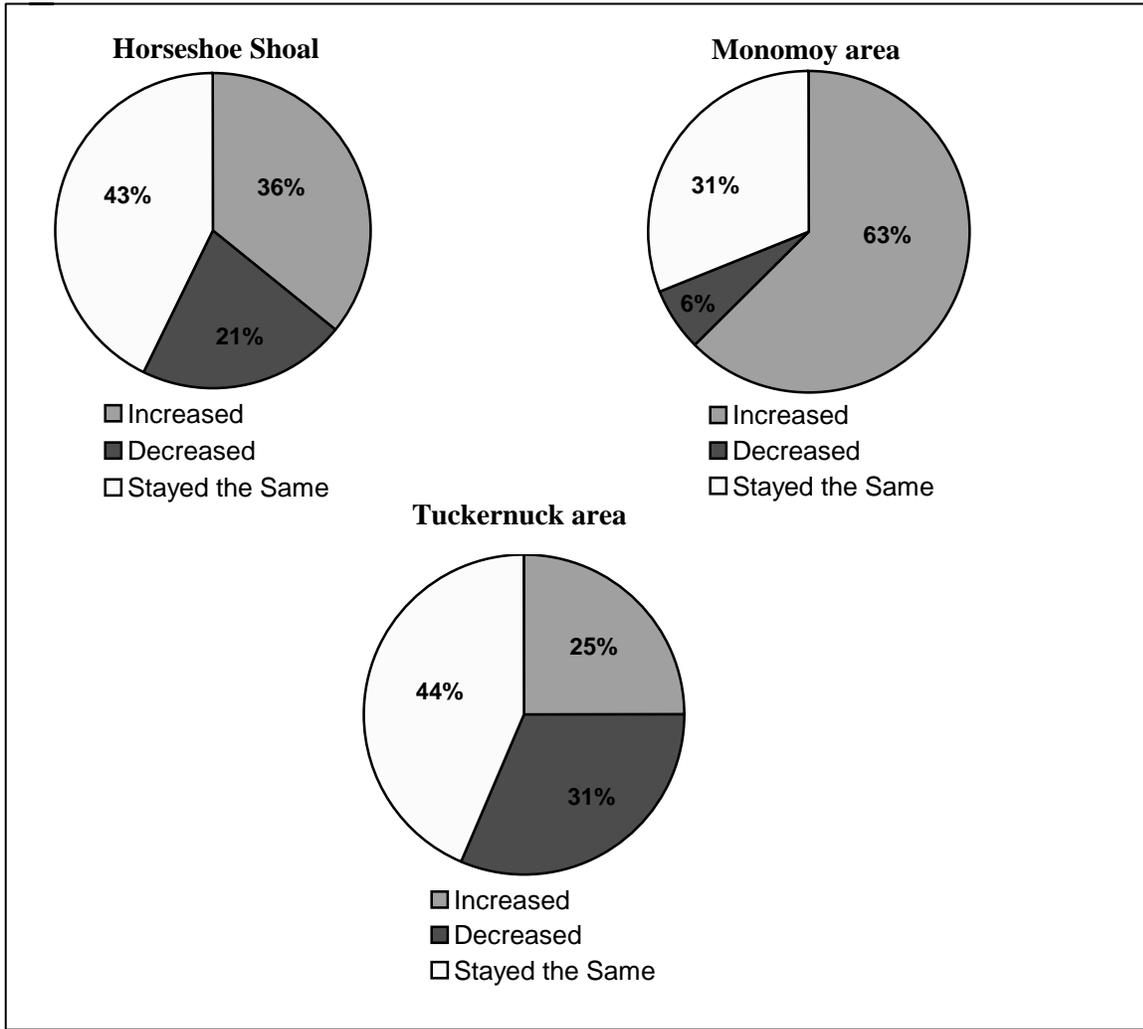
**Note:** Two charter companies did not provide input for this question because they only concentrate their efforts on two fish species

**Figure 8: Most Frequently Caught Species at Horseshoe Shoal, the Tuckernuck area, and “Other” Sites (A chart for the Monomoy area is not included here as all the respondents agreed that striped bass was the most frequently caught species there)**

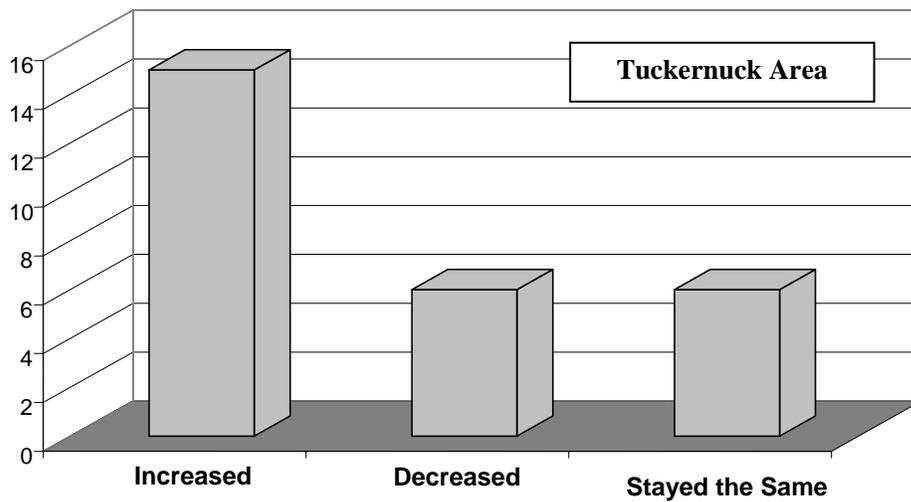
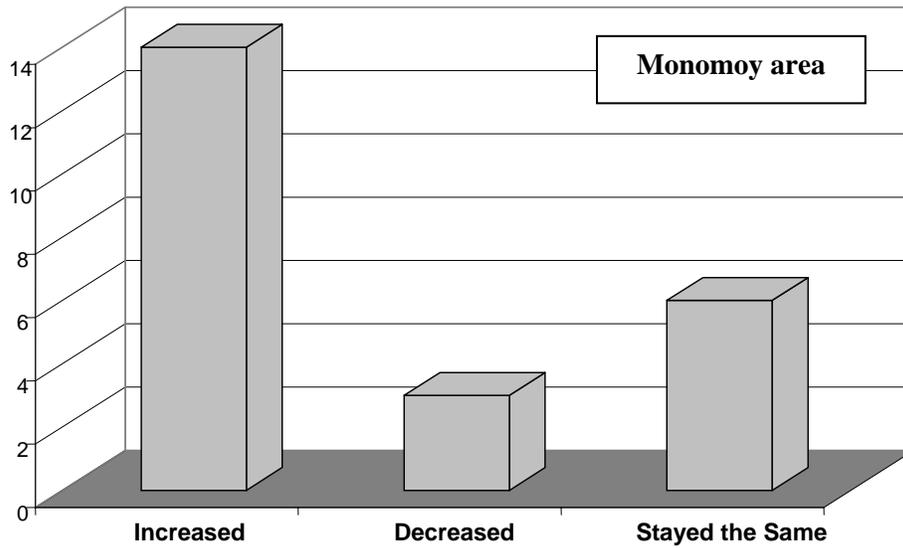
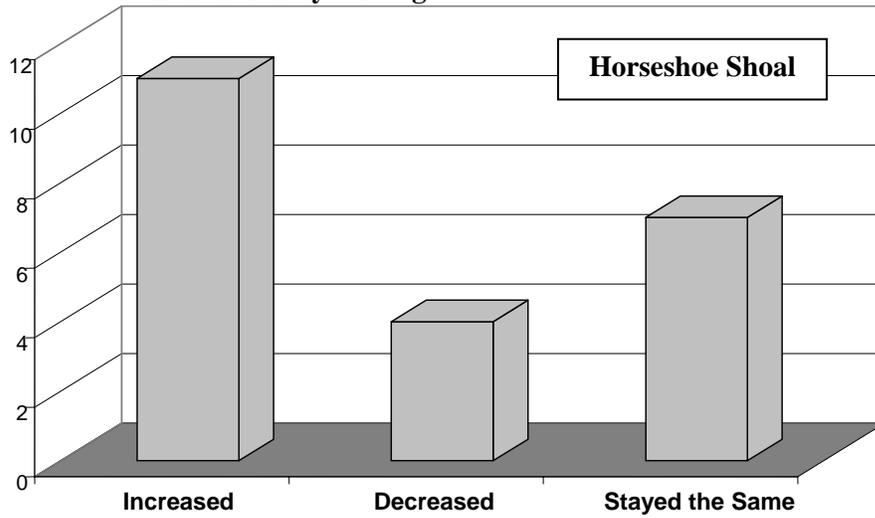




**Figure 10: How the Number of Charter/Party Fishing Trips have Changed Since the Respondent Began Fishing in Nantucket Sound**



**Figure 11: Catch Number Changes at Fishing Sites Since the Respondent Began Charter/Party Fishing**



**Attachment A**

**Charter/Party Fishing Vessel Survey Template**

## CHARTER BOAT/ PARTY BOAT SURVEY

The purpose of this survey is to collect information on the abundance and distribution of recreational fish species in the Nantucket Shoals area. The following questions will help us better understand what fish are in the area, what are the most preferred species for recreational fishing, what is the seasonal availability of these species, and whether there have been any changes in recent years in any of the aspects of recreational fishing in the area.

**Date** \_\_\_\_\_ **Location of survey** \_\_\_\_\_

**Name of vessel** \_\_\_\_\_ **Captain's name** \_\_\_\_\_

**Interviewer** \_\_\_\_\_

1. Do you operate a party boat or charter boat?
2. In the past 12 months, how many days did your boat go saltwater fishing?
3. How many of the following types of fishing trips did you take in the areas shown below in the past 12 months?

	<u>Horseshoe Shoal</u>	<u>Monomoy</u>	<u>Tuckernuck</u>	<u>Other</u>
Half-day trip (~4 hours)				
Full-day trip (~8 hours)				
Evening/ Night trip				
Overnight trip				

4. What is the average number of people fishing from your vessel per trip?
5. What are the species that your parties most prefer to catch?  
 First:  
 Second:  
 Third:

6. What are the most frequently caught species at the following sites?

	<u>Horseshoe Shoal</u>	<u>Monomoy</u>	<u>Tuckernuck</u>	<u>Other</u>
First				
Second				
Third				

7. What months are most fish caught? (i.e. for each of the top three species named in Question 6)

<u>Month</u>	<b>First</b>	<b>Second</b>	<b>Third</b>
<b>Jan</b>			
<b>Feb</b>			
<b>Mar</b>			
<b>Apr</b>			
<b>May</b>			
<b>Jun</b>			
<b>Jul</b>			
<b>Aug</b>			
<b>Sep</b>			
<b>Oct</b>			
<b>Nov</b>			
<b>Dec</b>			

8. Since the year you started fishing in Massachusetts, the **number of fishing trips made per year** to the following sites has generally (put an X in the appropriate columns):

	<u>Horseshoe Shoal</u>	<u>Monomoy</u>	<u>Tuckernuck</u>
Increased			
Decreased			
Stayed about the same			
Don't know			

9. Since the year you started fishing in Massachusetts, the **number of fish you catch per trip** at the following sites has generally (put an X in the appropriate columns):

	<u>Horseshoe Shoal</u>	<u>Monomoy</u>	<u>Tuckernuck</u>
Increased			
Decreased			
Stayed about the same			
Don't know			

10. Any additional comments you may have about this survey or saltwater fishing in Massachusetts would be appreciated:

**Attachment B**

**Charter/Party Fishing Vessel Follow-up Survey Template and Map**

## CHARTER BOAT/ PARTY BOAT SURVEY – FOLLOW-UP QUESTIONS

1. How many of the following types of fishing trips did you take in the areas shown on the attached map of Nantucket Sound in the past 12 months?

	Location 1	Location 2	Location 3
Half-day trip (~4 hours)			
Full-day trip (~8 hours)			
Evening/ Night trip			
Overnight trip			

2. What are the most frequently caught species at the following areas?

	Location 1	Location 2	Location 3
First			
Second			
Third			

### Additional Comments:

