

New York State Department of Environmental Conservation



**Division of Fish, Wildlife, and Marine Resources
Bureau of Marine Resources**

Striped Bass Cooperative Angler Program Annual Report 2010



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INTRODUCTION

Striped Bass (*Morone saxatilis*) is the official marine fish of the state of New York, and has provided a very important recreational and commercial fishery for the state, as well as along the eastern seaboard. In the early 1980's, when the population was in decline, the US government realized it had to react to save this important species and passed the Atlantic Striped Bass Conservation Act in 1984. This act empowered the Atlantic States Marine Fishery Commission (ASMFC) to not only develop but now enforce the Atlantic Coast Striped Bass Interstate Fisheries Management Plan. This plan mandated that states develop and support programs to monitor recruitment, in addition to setting size limits and restricted fishing areas. States with large recreational fisheries, such as New York, are also required to supplement the Marine Recreational Fisheries Statistic Survey (MRFSS) collection of catch composition data and catch-effort information from that fishery. States that do not follow the ASMFC regulations could be penalized, possibly with closures of the fishery.

In order to remain in compliance with the ASMFC management plan for recreational fishing information, the New York State Department of Environmental Conservation (NYSDEC) has been enlisting the help of volunteer anglers to assess the health of the striped bass population in our waters since 1985. The program is known as the Striped Bass Cooperative Angler Program (SBCA), funded in part by the Sport Fish Restoration Account of the Aquatic Resources Trust Fund (D-J).

The fishing information provided by anglers, which includes length, weight, abundance, and fish scale samples, is utilized in several ways. Anglers are provided with logbooks, scale envelopes, and instructions on how to collect data to ensure some uniformity in the information we receive. The scale samples collected are used to obtain age information, which is then used when developing the length-at-age keys necessary for the ASMFC management plan. The other data provided, which also includes number of fishing trips and the number of hours spent fishing, is used to determine the catch per unit effort (CPUE) or fishing success of striped bass for recreational fishing. Once all of the data is analyzed, it is compared with previous years' information to assess trends in the population, as well as to characterize the recreational catch and harvest.

Consequently, the SBCA program has an important role in helping to monitor the population of striped bass in our waters. The program also gives recreational anglers a chance to contribute information vital to the management of striped bass, and to hopefully understand how fish species are managed on both a state and a coastal level.

METHODS AND MATERIALS

The basis of the program is to recruit anglers through contacts at sportsman's shows, fishing club talks, the NYSDEC website, mailings, or through other anglers already involved in the SBCA program. The newly recruited anglers are then sent an introductory packet containing information about the program, scale envelopes, a logbook, and instructions on how to collect the scales and other data.

Logbooks, first distributed in 1994, provide useful catch information on striped bass and other species that anglers encounter. Logbook data consists of date, location, time of day, tide,

mode (shore, boat, etc.), bait type, hours fished, number of anglers, and length, weight, and kept/released information for fish caught (not limited to striped bass). There is also a section in the logbook for trips where no fish were caught. The “zero” catch information is just as important as the catch information in determining the CPUE of striped bass.

Scale envelopes require the same data to be collected as the logbooks, plus the collection of 10-20 scales taken from the area between the two dorsal fins, above the lateral line. A fish lays down rings on its scales in much the same way that a tree puts down growth rings. In order to view these growth rings, also called annuli, impressions of the scales are made in 0.04-inch thick, grade GG, cellulose acetate sheets. Five to ten scales from each scale envelope are arranged on the acetate, sandwiched between two metal plates, and then placed into a heated Carver Model C hydraulic press, at 20,000 lbs of pressure, for approximately 10 minutes. The acetate is removed, allowed to cool, and then the scales are picked off and placed back into their scale envelopes. Samples are then viewed through the use of an Anacomp, Inc. Micron 385 microfiche reader, which magnifies the scale impressions, so the annuli can be counted.

Fish are aged by at least two staff members and disagreements in ages are re-analyzed by all observers. When striped bass lose scales, they are regenerated (grow back). The growth pattern can sometimes still be seen on the regenerated scales, however the pattern is often incomplete or distorted. As a result, scale samples must show no signs of regeneration (re-growth) in order to be aged properly. If a conclusion cannot be made about the fish’s age, the individual fish is not included in the age analysis.

Anglers collect data throughout New York and the east coast. Consequently, the samples are assigned to a zone (Figure 1) based on the location that the fish was caught. For the purposes of this study, the samples collected outside of New York are analyzed separately. During the 2010 season, 60 samples were provided from outside of New York State waters.

- | | |
|---------------------------------------|--------------------------------------|
| Zone 1- Hudson River & NY Harbor area | Zone 4- Eastern Long Island, N shore |
| Zone 2- Western Long Island, N shore | Zone 5- Eastern Long Island, S shore |
| Zone 3- Western Long Island, S shore | Zone 6- Outside New York waters |

In addition to the SBCA program, many anglers participate in tagging programs sponsored by other groups, such as the American Littoral Society (ALS). During the 2010 season, SBCA participants reported tagging 103 striped bass for ALS. One of these fish was recaptured 12 days later heading up the East River after being caught and tagged off Rockaway Inlet in June. An ALS fish that was tagged off Montauk last October was recaptured this June in New Haven Harbor, Connecticut.

Various agencies also tag and release fish. If an angler catches a fish with a tag, the angler should take scales from the opposite side of the fish that the tag is on (since scales may have already been taken from the same side as the tag is on, the present scales will be regenerated). The tag should be clipped off and the recapture information should be reported to the appropriate agency (see Appendix). Usually the agency will, in return, provide the angler with specific information about the fish’s original release, as well as a token of appreciation for participating. The recaptured tag information should also be included on the scale envelope or logbook for this SBCA program. Two tags were reported to have been recaptured by cooperative anglers during 2010; one was an ALS tag and the other a US Fish and Wildlife Service (FWS) tag. The FWS tag was placed on the fish by the NJDEP in March 2000 in Delaware Bay, NJ and the fish was recaptured this May in Great South Bay.

Figure 1

Striped Bass Cooperative Angler Fishing Zones

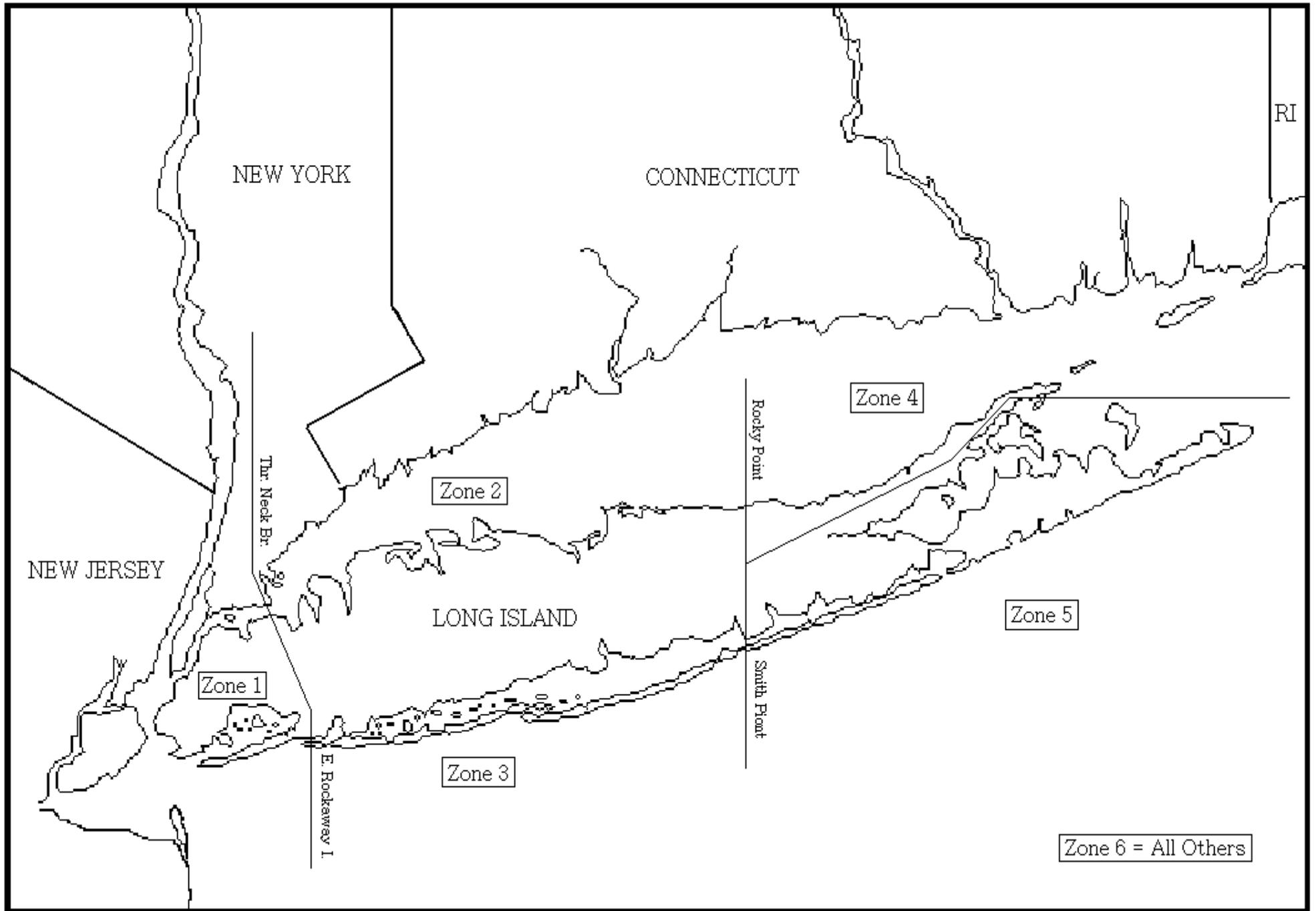


TABLE 1

SBCA TRIP AND CATCH EFFORT DATA, 2006 - 2010

Year	Zone	Fishing Trips	Hours Fished	Bass	Legal Bass	Kept	% of Legal	% Legal	% Kept	Bass / HR	Bass / Trip	Legal / HR	Legal / Trip	HRS / Trip
2010	1	49	320.5	162	63	36	12.9	38.9	57.1	0.5	3.3	0.2	1.3	6.5
	2	68	256.5	372	41	26	8.4	11.0	63.4	1.5	5.5	0.2	0.6	3.8
	3	95	470.5	225	156	102	31.9	69.3	65.4	0.5	2.4	0.3	1.6	5.0
	4	31	193.25	131	35	31	7.2	26.7	88.6	0.7	4.2	0.2	1.1	6.2
	5	123	432.5	418	175	92	35.8	41.9	52.6	1.0	3.4	0.4	1.4	3.5
	6	34	73.25	60	19	5	3.9	31.7	26.3	0.8	1.8	0.3	0.6	2.2
	Total	400	1746.5	1368	489	292	100.0	35.7	59.7	0.8	3.4	0.3	1.2	4.4
2009	1	74	312.85	212	41	17	11.3	19.3	41.5	0.7	2.9	0.1	0.6	4.2
	2	83	339.5	202	46	17	12.7	22.8	37.0	0.6	2.4	0.1	0.6	4.1
	3	96	376.75	61	24	15	6.6	39.3	62.5	0.2	0.6	0.1	0.3	3.9
	4	43	129.75	93	15	1	4.1	16.1	6.7	0.7	2.2	0.1	0.3	3.0
	5	166	495.5	598	228	91	63.0	38.1	39.9	1.2	3.6	0.5	1.4	3.0
	6	21	49.5	28	8	3	2.2	28.6	37.5	0.6	1.3	0.2	0.4	2.4
	Total	483	1703.85	1194	362	144	100.0	30.3	39.8	0.7	2.5	0.2	0.7	3.5
2008	1	71	77.5	114	20	4	10.1	17.5	20.0	1.5	1.6	0.3	0.3	1.1
	2	78	337.5	288	18	13	9.0	6.3	72.2	0.9	3.7	0.1	0.2	4.3
	3	37	154	51	8	4	4.0	15.7	50.0	0.3	1.4	0.1	0.2	4.2
	4	35	99.25	104	6	3	3.0	5.8	50.0	1.0	3.0	0.1	0.2	2.8
	5	200	583.75	616	144	111	72.4	23.4	77.1	1.1	3.1	0.2	0.7	2.9
	6	17	36	25	3	2	1.5	12.0	66.7	0.7	1.5	0.1	0.2	2.1
	Total	438	1288	1198	199	137	100.0	16.6	68.8	0.9	2.7	0.2	0.5	2.9
2007	1	131	469.5	565	183	63	31.5	32.4	34.4	1.2	4.3	0.4	1.4	3.6
	2	226	767.65	955	93	27	16.0	9.7	29.0	1.2	4.2	0.1	0.4	3.4
	3	92	316.65	153	23	8	4.0	15.0	34.8	0.5	1.7	0.1	0.3	3.4
	4	21	68.5	69	6	3	1.0	8.7	50.0	1.0	3.3	0.1	0.3	3.3
	5	398	1173.35	1336	266	165	45.8	19.9	62.0	1.1	3.4	0.2	0.7	2.9
	6	19	44.51	51	10	5	1.7	19.6	50.0	1.1	2.7	0.2	0.5	2.3
	Total	887	2840.16	3129	581	271	100.0	18.6	46.6	1.1	3.5	0.2	0.7	3.2
2006	1	97	267.5	137	59	42	15.6	43.1	71.2	0.5	1.4	0.2	0.6	2.8
	2	254	801.65	806	46	19	12.2	5.7	41.3	1.0	3.2	0.1	0.2	3.2
	3	127	390.25	138	35	19	9.3	25.4	54.3	0.4	1.1	0.1	0.3	3.1
	4	47	137.5	252	12	8	3.2	4.8	66.7	1.8	5.4	0.1	0.3	2.9
	5	438	1362.75	1749	221	151	58.5	12.6	68.3	1.3	4.0	0.2	0.5	3.1
	6	22	45.25	97	5	2	1.3	5.2	40.0	2.1	4.4	0.1	0.2	2.1
	Total	985	3004.9	3179	378	241	100.0	11.9	63.8	1.1	3.2	0.1	0.4	3.1

RESULTS & DISCUSSION

During the 2010 season, 29 cooperative anglers reported 400 fishing trips and contributed 783 striped bass samples, which were a combination of 546 scale envelopes and 237 logbook entries. While the number of anglers remained the same, the number of fishing trips decreased from 483 and the number of samples contributed increased slightly from 750 in 2009. In 2010, each fishing trip lasted an average of 4.4 hours, an increase from the 3.5 hours spent fishing in 2009. The SBCA fishing trip and catch effort data from 2006-2010 is provided in Table 1.

Fishing Success and Catch Per Unit Effort

In 2010, anglers reported increased overall fishing success to 2009. The number of bass per hour increased to 0.8 from 0.7 the previous year (Table 1). Zone 2 had the highest catch rate of 1.5 bass/hour. This was much more than the next highest zone, 5, which averaged 1 bass/hour. The long-term (15 year) trend is shown in Figure 2, with an average of 1.6 bass/hour. The number of bass caught per hour had been rising from 1994 through 1999, before falling to below average in 2005.

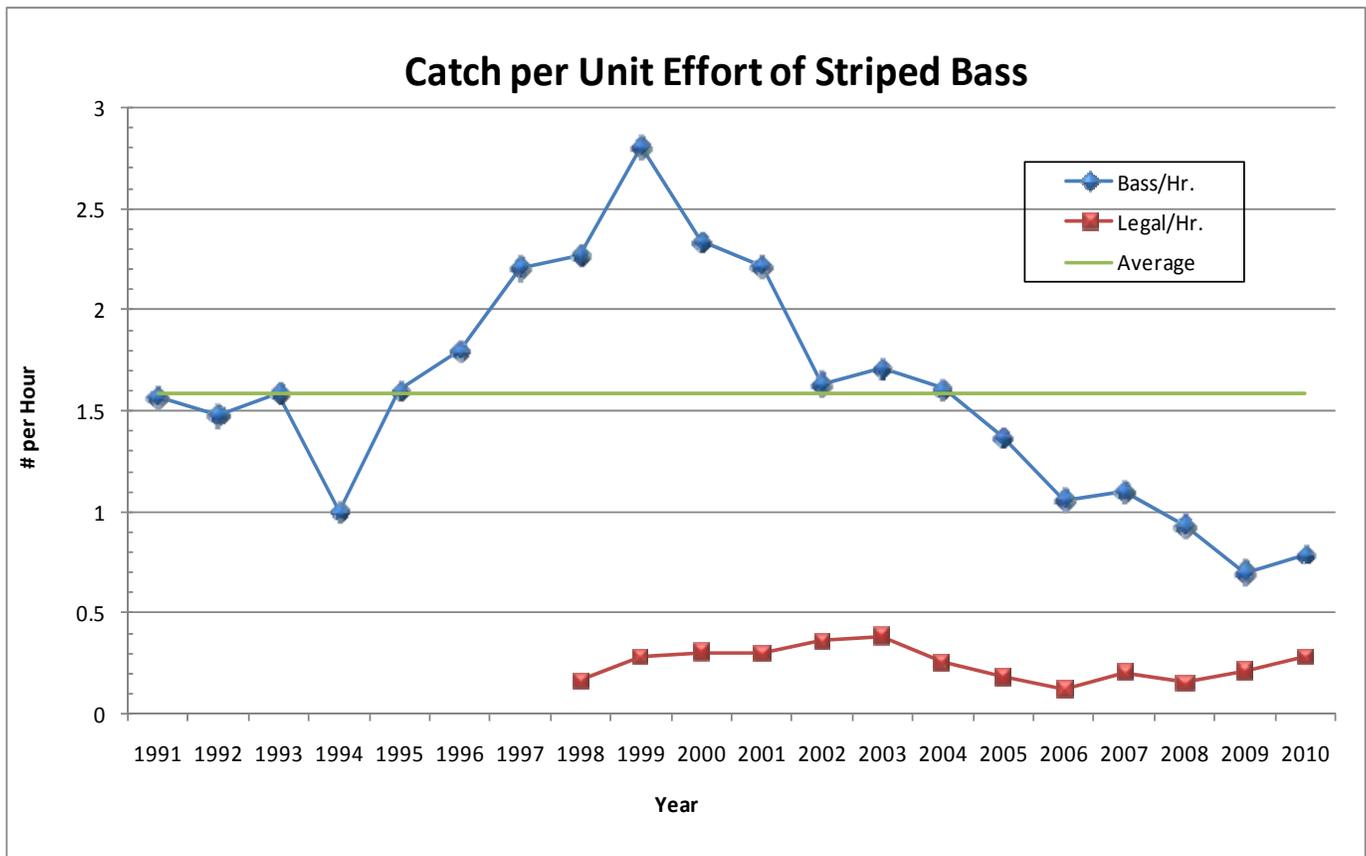


Figure 2 Long-term CPUE for striped bass and short-term CPUE for legal-sized bass caught by cooperative anglers.

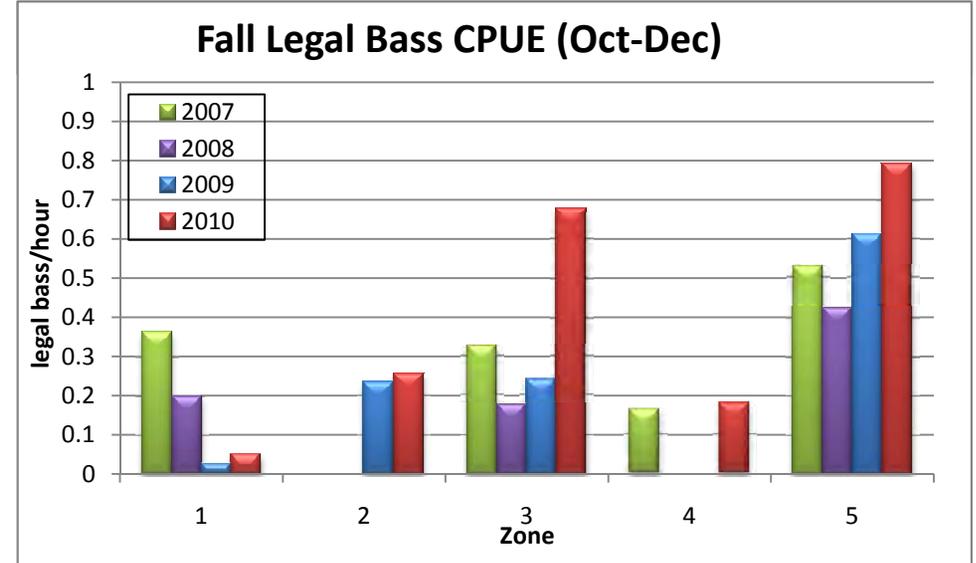
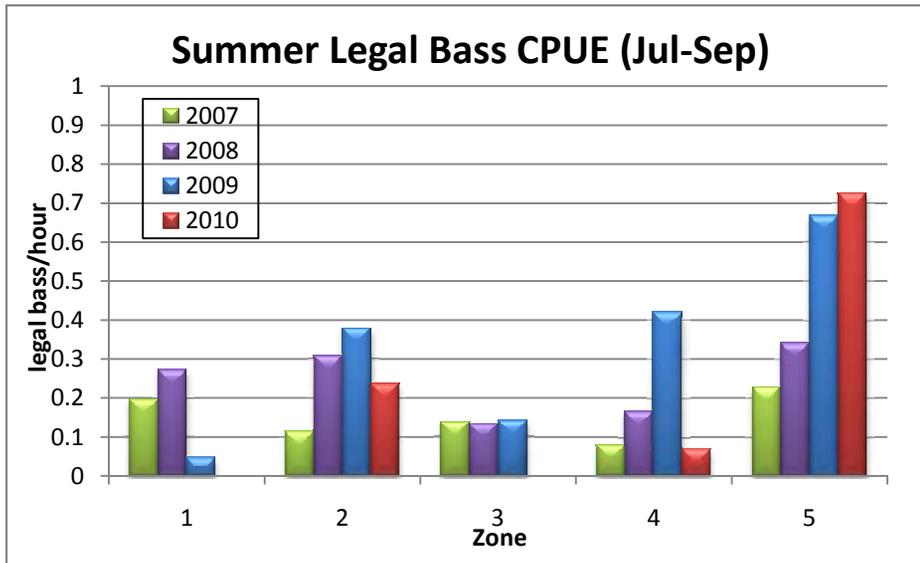
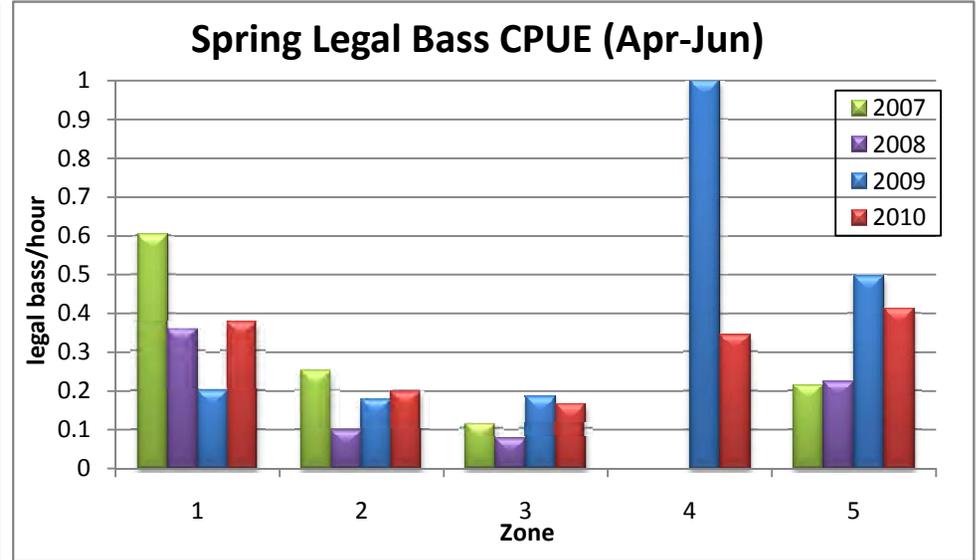
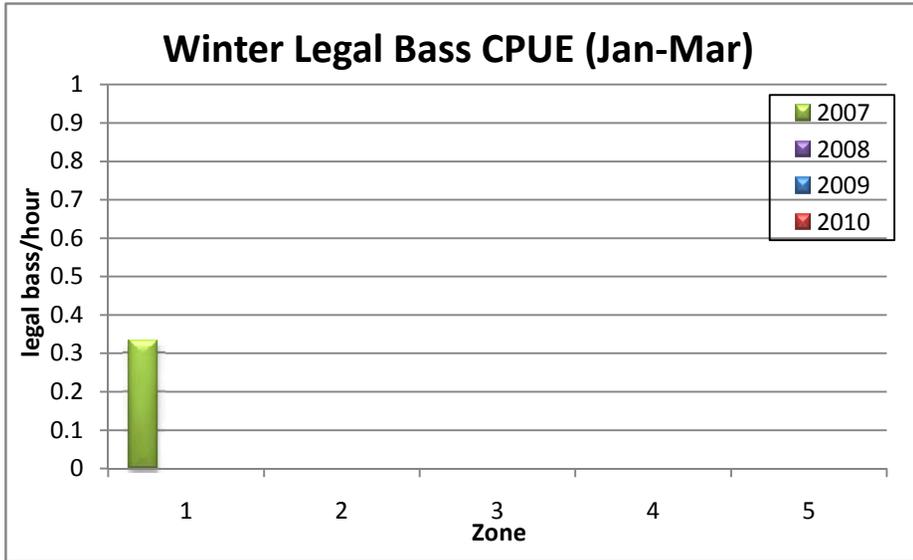


Figure 3

Catch effort of legal-sized striped bass, by zone during the four seasons

When looking at legal bass catches, Zone 5 continued to produce most of the legal fish caught (35.8 %), which was followed by Zone 3 (31.9 %). The percentage of the catch that was legal bass is greatly influenced by the amount of time spent fishing, as well as the time of year that the zones were fished. Sampling each zone equally is an important part of collecting accurate data, and we hope to continue to see increased sampling efforts from anglers in each zone. When it comes to the average of how many legal bass were caught per hour (CPUE) in 2010, Zone 5 produced the highest rate of 0.4 legal bass per hour. This equates to 1 legal striped bass for every 2.5 hours of fishing. The average rate for catching legal bass for all of the zones combined, turned out to be 0.3 legal-bass/hr. This means that an angler could, on average, expect to catch at least one legal striped bass for every 3 hours and 20 minutes of fishing in New York waters. Overall, participating anglers were slightly more successful in catching legal striped bass during 2010 as in 2009 (0.2 legal-bass/hr).

Knowing that striped bass are in different areas of New York at different times of year, the catch-per-unit-effort of legal striped bass has been divided into the four seasons: winter (Jan-Mar), spring (Apr-Jun), summer (Jul-Sep), and fall (Oct-Dec). Figure 3 shows the legal-bass CPUE from 2007-2010 by Zone for each season. During the winter, Zone 2 has been the only area that we've consistently received samples from, but legal-sized bass are rarely caught during that time. All zones showed success during the spring, with Zones 1 & 5 having the highest average over the last 4 years. Catch effort of legal bass tends to drop slightly during the summer, although Zones 3 and 5 showed increased catches in 2010. Finally, in the fall, catches increased in each zone and Zone 5 continued being the most fruitful and consistent for that time period.

If there is a particular area that a participating angler likes to fish, then Figure 4 should be examined to find which seasons, from 2007-2010, produced the highest catch rates of legal striped bass for each zone. Anglers fishing in Zone 1 generally had more success catching legal bass during the spring. Anglers in Zone 2 caught legal bass with the most consistency in the summer. Anglers in Zone 3 had success catching legal bass from spring through fall, but were mostly successful in the fall. Legal bass were generally caught spring through fall in Zone 4, with the summer being the most consistent over time. Finally, Zone 5 anglers caught legal bass from spring through the fall, but fall was consistently the most fruitful time of year.

Samples and Fishing Methods

As with previous years, length and scale samples trickled in throughout the year with most arriving at the end of the season. As stated before, 783 striped bass length samples were collected in 2010, a combination of 237 logbook entries and 546 scale envelopes. It is very difficult to get a scale sample from every single fish caught, making a logbook very useful to be able to jot down the lengths of striped bass, other species, and other important information about your fishing trip. A graphical representation of the number of length samples submitted (measurements and scales) as compared to the reported number of fish caught, and the number of fish that were of legal size, can be seen in Figure 5. The numbers of fish caught and legal-sized striped bass, broken down by zone, can be found in Table 2. Individual angler contributions are listed in the Appendix.

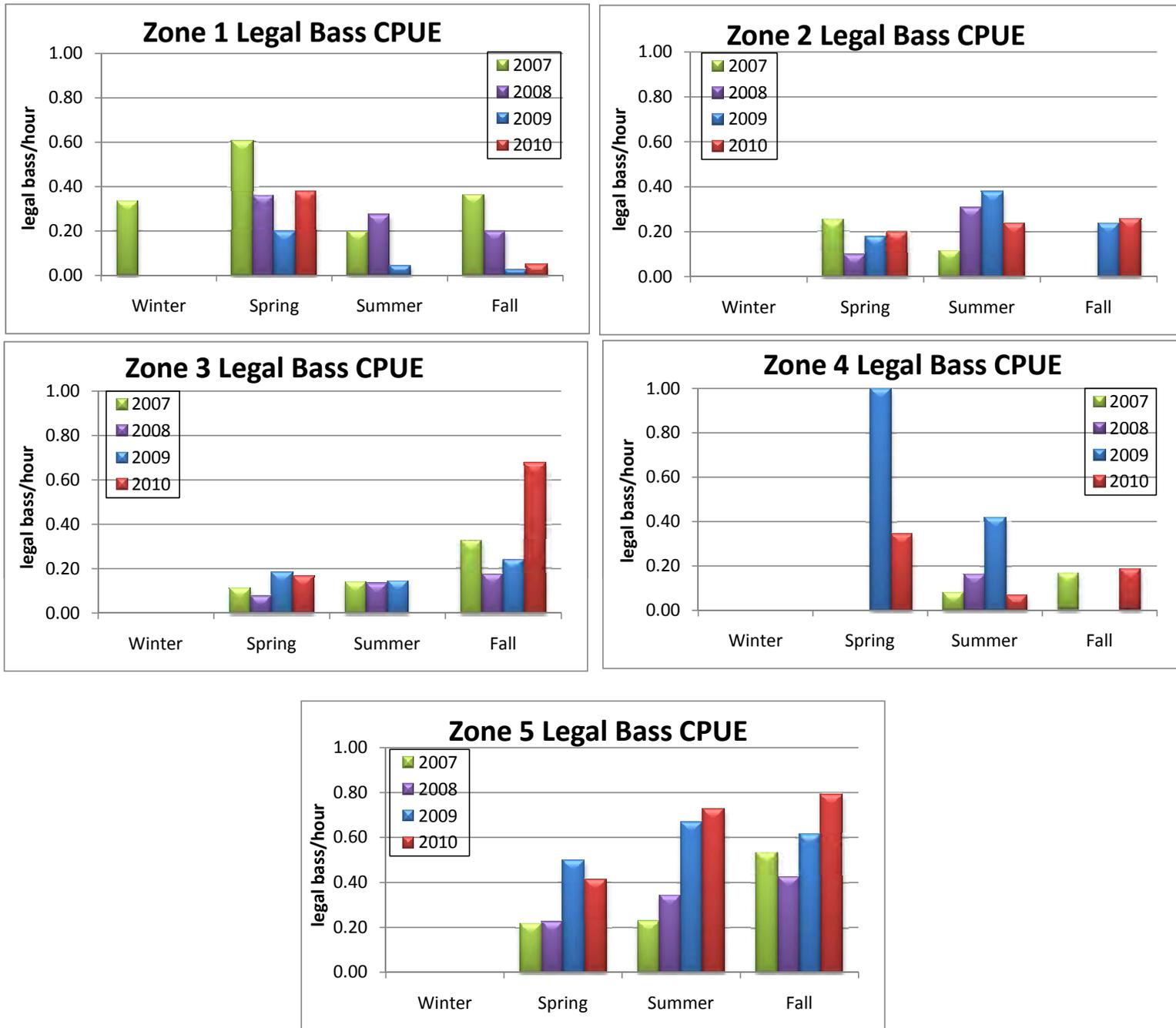


Figure 4

Catch effort of legal-sized striped bass for each zone

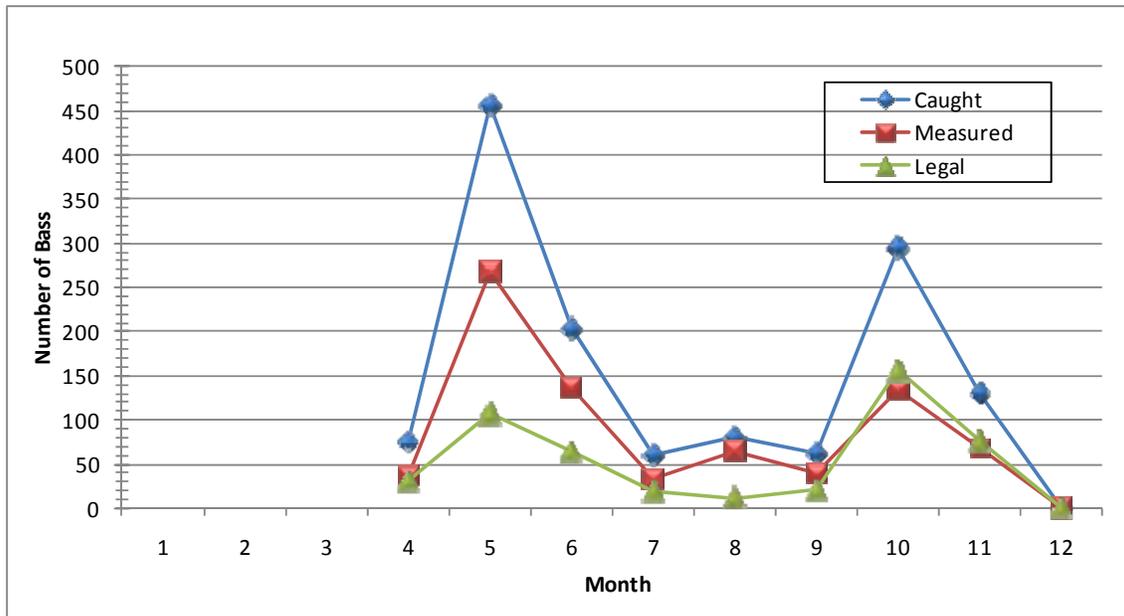


Figure 5 The 2010 monthly comparison of the total number caught, measured, and legal-sized striped bass

The number of fish caught throughout the year, particularly legal-sized bass, coincides with two major migration activities of striped bass. In the spring, as water temperatures begin to rise from the cold lows of winter, adult bass migrate inshore on their way to brackish and freshwater spawning grounds, particularly the Hudson River, Delaware River, Chesapeake Bay, and Roanoke River (Richards and Deuel, 1987). In New York, bass end up visiting the many bays and harbors of Long Island as they try to get to the Hudson River via New York Harbor and western Long Island Sound. Striped bass then tend to stay in the region, although locally dispersed, feeding on schools of baitfish, crustaceans, and the like. In late summer and the fall, as water temperatures begin to drop again, the majority of striped bass start another migration towards deeper, offshore waters. During this “Fall Run”, striped bass from other stocks tend to migrate through our area as well (Raney, 1954; Chapoton and Sykes, 1961). Not all large bass make it into the Hudson River, and not all make it out of our area either. Sometimes fish are constantly on the move, while others will hang around in areas of higher food abundance, or in pockets of slightly warmer water, such as areas of power plant outflows. During 2010, the majority of stripers were caught in the spring (April-June) and fall (October-December) particularly May and October (Figure 5 and Table 2), which is consistent with previous years (Figure 6).

Table 2 Number of striped bass caught, legal bass, and hours fished by month in each zone for 2010.

Striped Bass Caught

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Total
January	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0
April	34	33	4	0	5	0	76
May	67	240	8	28	53	60	456
June	8	67	10	12	107	0	204
July	0	16	0	15	30	0	61
August	1	0	1	63	16	0	81
September	12	2	0	12	37	0	63
October	35	14	100	1	145	0	295
November	5	0	102	0	24	0	131
December	0	0	0	0	1	0	1
Total	162	372	225	131	418	60	1368

Legal-sized Striped Bass

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Total
January	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0
April	26	2	2	0	1	0	31
May	28	12	4	28	17	19	108
June	7	16	5	4	32	0	64
July	0	4	0	1	15	0	20
August	0	0	1	0	11	0	12
September	0	2	0	1	18	0	21
October	2	5	75	1	73	0	156
November	0	0	69	0	8	0	77
December	0	0	0	0	0	0	0
Total	63	41	156	35	175	19	489

Hours Spent Fishing

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Total
January	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0
March	0	2	0	0	0	0	2
April	92.5	80	18	0	6.5	0	197
May	85.5	52.75	58.5	88	49.25	73.25	407.25
June	17	36.75	50.5	5	100	0	209.25
July	4	36.5	44.5	6	38.75	0	129.75
August	55.5	7.5	18.5	18.5	10	0	110
September	24	9.5	16.5	14	53.5	0	117.5
October	37.5	28.5	173.5	55.25	119.5	0	414.25
November	4.5	0	85.5	6.5	41.5	0	138
December	0	3	5	0	13.5	0	21.5
Total	320.5	256.5	470.5	193.25	432.5	73.25	1746.5

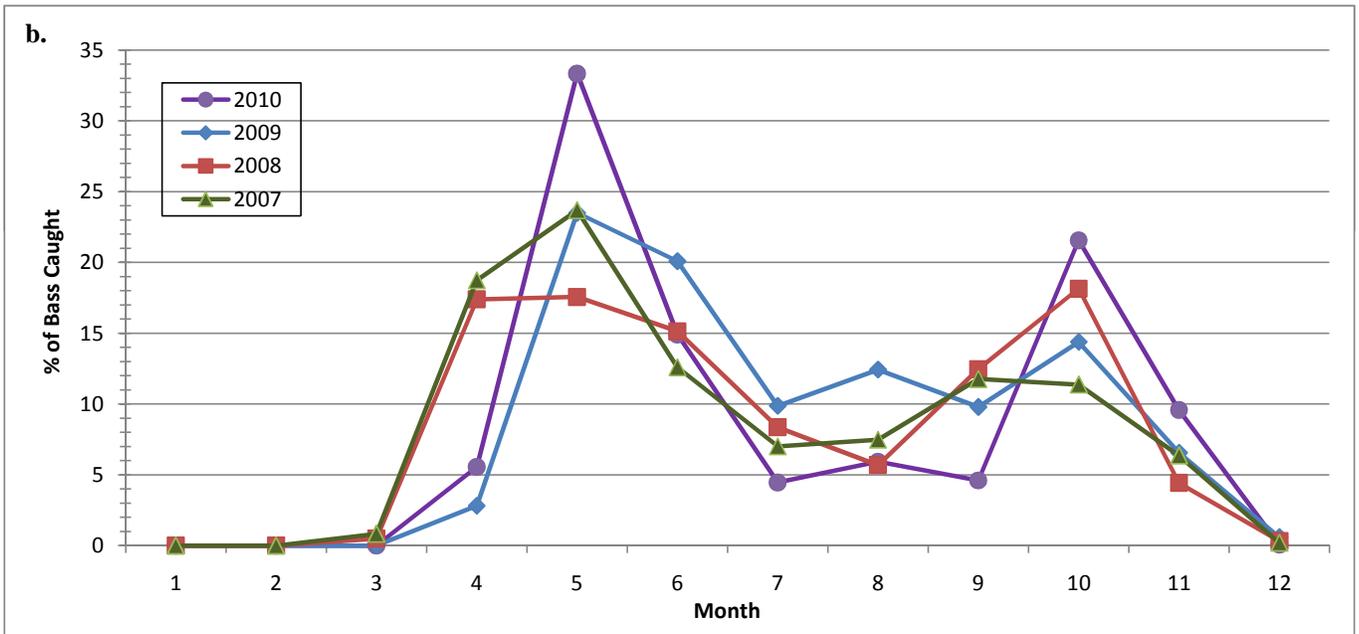
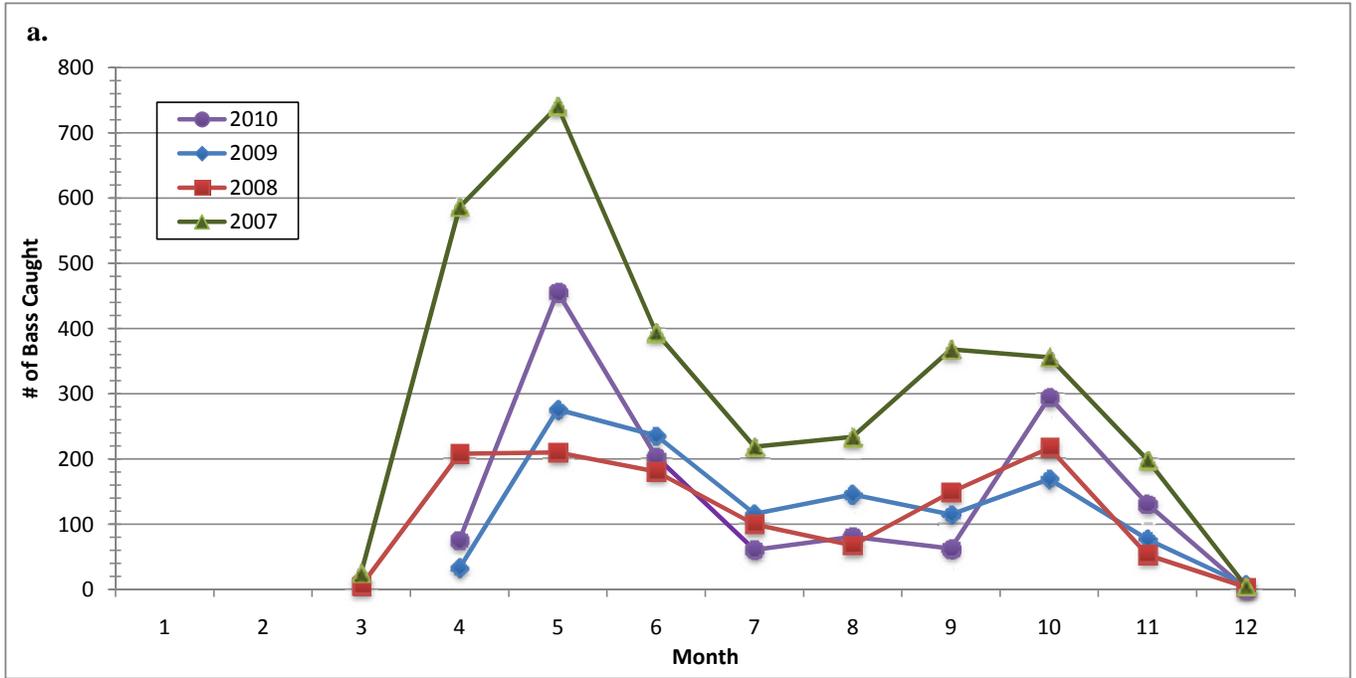


Figure 6 (a.) Number of striped bass caught by cooperative anglers and (b.) the percent of total bass caught throughout the year, 2007 - 2010.

When looking at the striped bass that were caught, it is interesting to know what methods anglers used to catch them. Table 3 shows the percentage of bass that were caught using each technique reported in each of the zones. Overall, 42.9% of all of the bass caught were caught via shore casting, 99.2% using hook and line (rod & reel), and 54% were caught using some type of artificial bait (lures). It is interesting, however, that when it came to catching legal-sized striped bass, 50.7% were caught via boat fishing mostly using artificial bait.

Table 3 Percentage of striped bass and legal bass caught, by technique, in each zone for 2010

Total Striped Bass								
		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Total %
Mode	Boat	5.2	3.5	8.6	2.0	6.0	0.0	25.4
	Kayak	2.0	2.0	0.4	0.0	1.7	0.0	6.1
	Shore	4.6	17.5	6.2	0.1	10.2	4.4	42.9
	Unknown	0.0	4.2	0.0	7.5	12.7	0.0	25.7
Bait	Artificial	2.9	20.0	14.5	2.0	10.2	4.4	54.0
	Combo	0.2	0.6	0.0	0.0	1.0	0.0	1.8
	Live	0.0	0.0	0.0	0.0	0.7	0.0	0.7
	Real	6.4	3.7	0.6	0.1	0.4	0.0	11.1
	Unknown	2.3	3.0	1.4	7.5	18.1	0.0	32.3
Gear	Hook & Line	11.8	27.2	16.4	9.6	29.8	4.4	99.2
	Spear Gun	0.0	0.0	0.0	0.0	0.8	0.0	0.8
Legal-sized Striped Bass								
		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Total %
Mode	Boat	10.8	2.7	20.4	5.7	11.0	0.0	50.7
	Kayak	1.8	1.4	0.4	0.0	2.7	0.0	6.3
	Shore	0.2	2.5	11.0	0.2	7.8	3.9	25.6
	Unknown	0.0	1.8	0.0	1.2	14.3	0.0	17.4
Bait	Artificial	3.3	1.8	30.9	5.7	8.8	3.9	54.4
	Combo	0.2	0.6	0.0	0.0	1.4	0.0	2.2
	Live	0.0	0.0	0.0	0.0	2.0	0.0	2.0
	Real	4.1	3.1	1.0	0.2	1.2	0.0	9.6
	Unknown	5.3	2.9	0.0	1.2	22.3	0.0	31.7
Gear	Hook & Line	12.9	8.4	31.9	7.2	33.5	3.9	97.8
	Spear Gun	0.0	0.0	0.0	0.0	2.2	0.0	2.2

Length Information

During 2010, cooperative anglers reported catching striped bass from as small as 10 inches, to as big as 50 inches. The average size of all of the striped bass caught, 25.27 inches, was slightly larger than in 2009 (24.63 inches). A comparison of the average lengths of the past four years can be seen in Figure 7, indicating that the largest fish were caught mostly in the spring and fall. The largest bass in 2010 were caught in November (27 inches, average). The complete length distribution for the striped bass measured in 2010, and the proportion that each length range contributed to those measured, can be seen in Figure 8. The distribution of lengths was spread across many length ranges but the 25 – 28 inch size range dominated. When looking at the proportion of those that were “legal” vs. those that were “short”, it turns out that 64.2% of the fish measured were under the legal limit, and 35.8% were of legal size. In 2009, 28.7% of the bass measured were legal-size; making 2010’s fishing slightly more rewarding. A list of the largest fish caught by participating anglers is located in the Appendix.

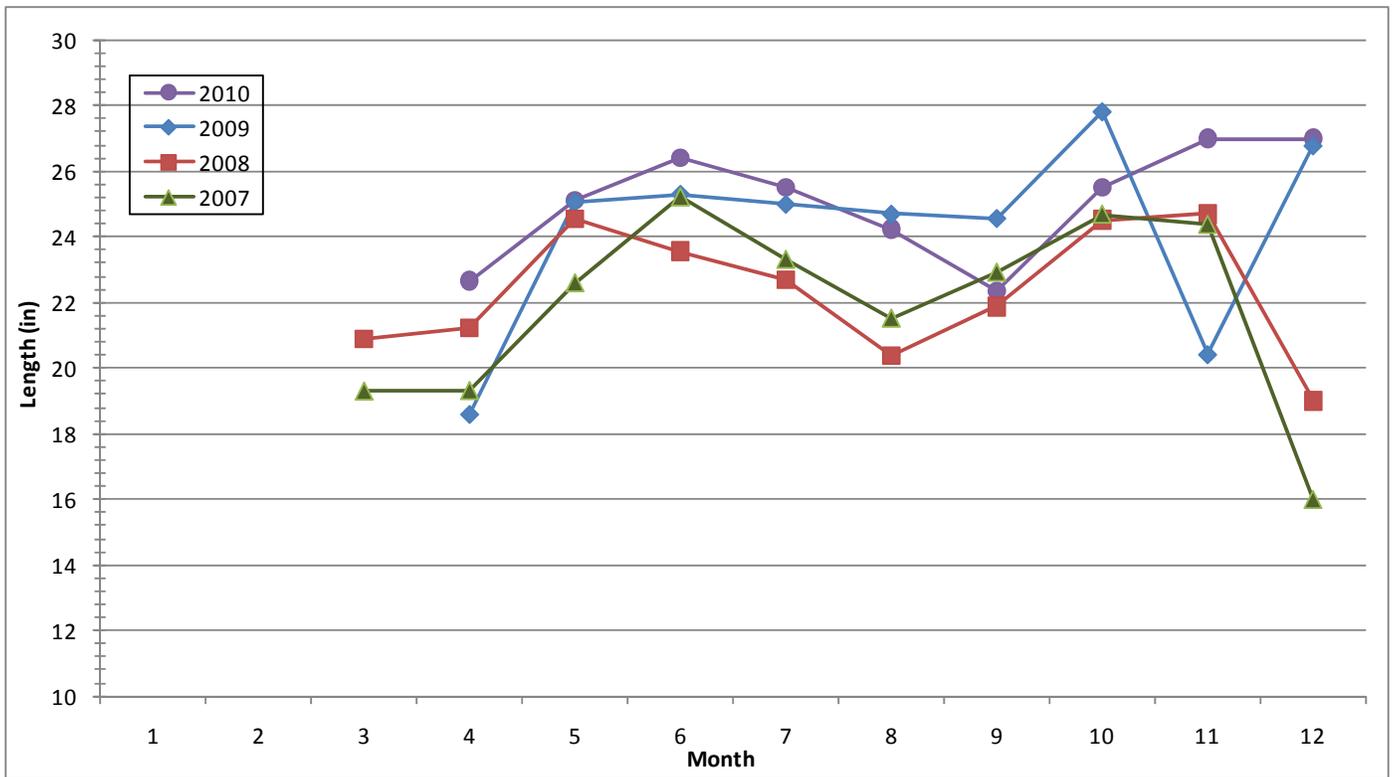


Figure 7 Average lengths of striped bass caught by cooperative anglers throughout the year, 2007-2010.

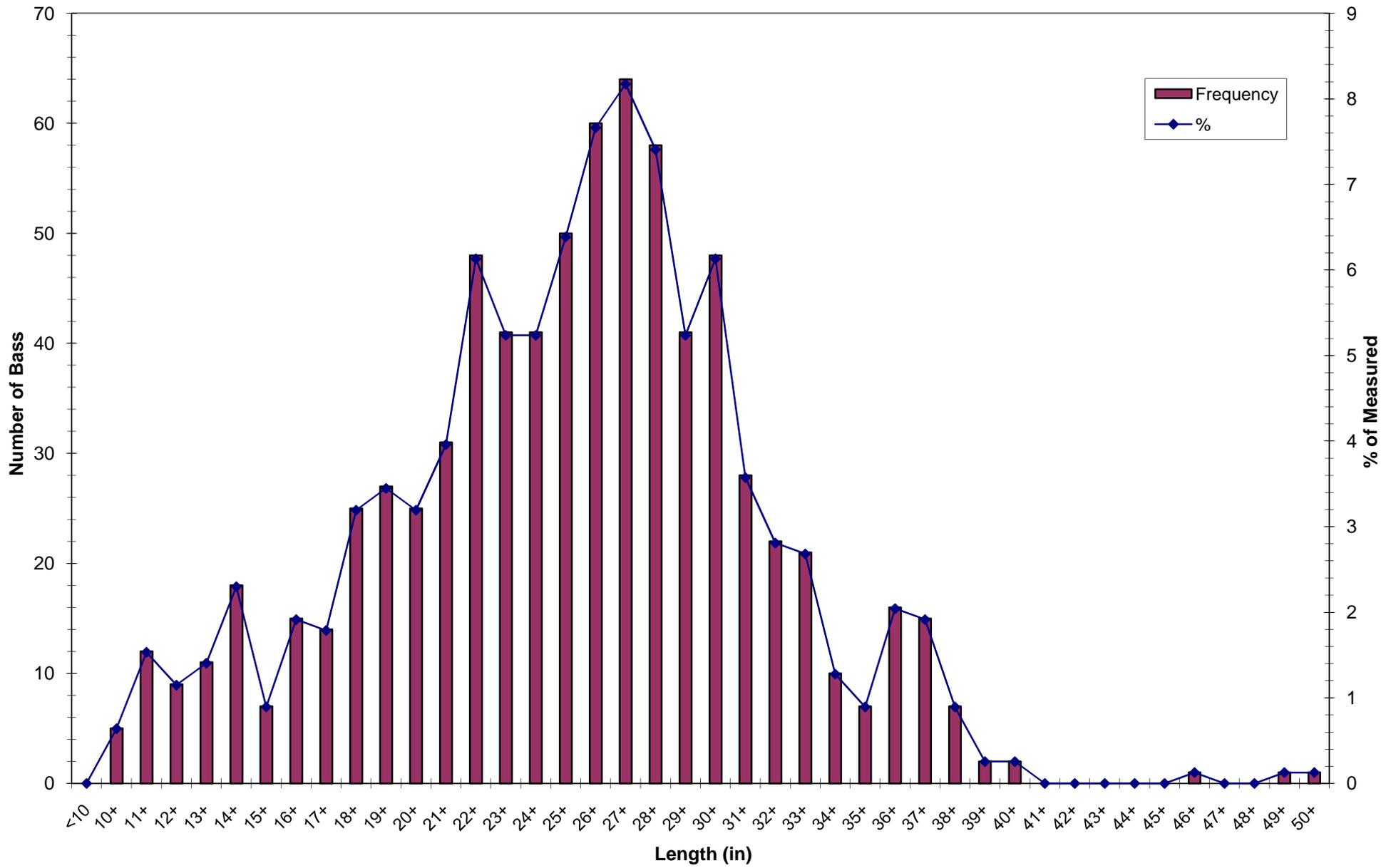


Figure 8

2010 Length Frequency of Angler Caught Striped Bass

Age Information

Often, both scientists and anglers would like to associate fish of a particular length with an age. This association also becomes an important contributor to adjusting regulations to promote healthy fish stocks, particularly when a species' sexual maturity is based on age, and therefore size. Striped bass females, for example, mature at an older age than males, and can be a limiting factor in spawning success. Studies (Berlinsky et al., 1995) have found that a small percent of females begin to mature by age 4, all will be mature by age 8, and that maturation rates vary as a result of fishing pressure and environmental factors. As a result, length-at-age keys become an important tool that cooperative anglers can help to create, to help scientists assess fishing regulations.

Of the 546 scale samples submitted for 2010, we were able to successfully age 526 of them. As seen in Figure 9, 21% of all of the samples were from age 3 fish (2007 year class) and 21% from age 7 fish (2003 year class). When comparing lengths to ages, the samples are divided into two seasons to reflect the two migratory events mentioned earlier. The first season includes January through June, and the second season includes July through December. In the first season, the dominating age 3 fish ranged in size from 10 to 22 inches and the age 7 fish ranged in size from 23 to 34 inches. During the second season, the age 3 fish were then ranging in size from 12 to 24 inches and age 7 fish were ranging in size from 22 to 37 inches. All age classes and their size ranges during each season can be seen in Tables 4 & 5.

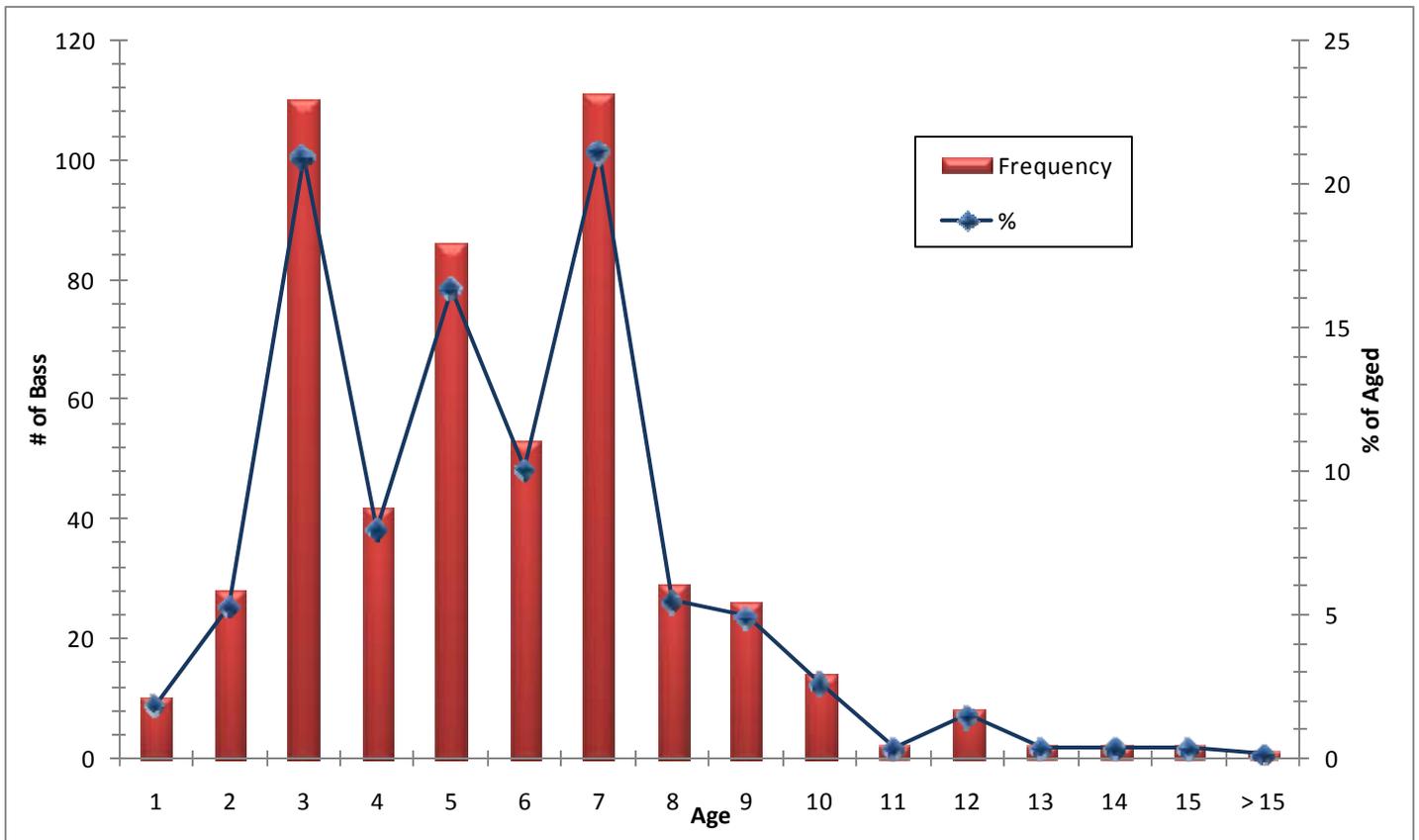


Figure 9 Age frequency and percent of aged for angler caught striped bass, 2010.

TABLE 4

2010 SBGA LENGTH-AT-AGE FREQUENCY

Season 1 January - June

Total Length	Age																No Age	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
<10																		
10			1															1
11		1	2															3
12			1														1	2
13			2															2
14																	10	10
15			2														3	5
16			5														4	9
17			8		1												4	13
18			11	1													4	16
19			9	4	1												3	17
20			2	4	2												6	14
21			2	4													1	7
22			2	7	4												9	22
23				2	9	3	1										7	22
24				4	14		2										11	31
25					12	4	2										15	33
26					8	8	4	1									23	44
27					2	5	11	3		1							19	41
28					1	10	14	2	3	1							12	43
29						2	11	3	2			1					5	24
30							10	2									7	19
31						2	11	1									3	17
32						1	3	2	5	1							2	14
33							2	2	3	2							3	12
34								2	2			1						5
35								1	1								1	3
36									1								1	2
37								1	1	2	1						1	6
38										2	1	1						2
39										1								1
40																		
41																		
42																		
43																		
44																		
45																		
46																		
47															1			1
48																		
49																		
50																1		1
>50																		
Total	0	1	47	26	54	35	73	18	18	8	2	3	0	0	1	1	155	442

TABLE 5

2010 SBGA LENGTH-AT-AGE FREQUENCY

Season 2 July - December

Total Length	Age																No Age	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
<10																		
10	3	1																4
11	4	4															1	9
12	2	4	1															7
13	1	7	1															9
14		6	2															8
15		1	1															2
16		3	3															6
17		1																1
18			6	1													2	9
19			8														2	10
20			7														4	11
21			13	2													9	24
22			16	5	2		1										2	26
23			4	6	5												4	19
24			1	1	2												6	10
25				1	8	2											6	17
26					5	2											9	16
27					8	1	4										10	23
28					2	2	7	1									3	15
29						6	3	3	1								4	17
30						2	8	2	1								16	29
31						2	6		1	1							1	11
32						1	5	1									1	8
33							2	1	2								4	9
34								1									4	5
35								1				1					2	4
36							1	1	1	2		1					8	14
37							1	1	1	2		1	1		1		1	9
38												2		1			2	5
39										1								1
40													1				1	2
41																		
42																		
43																		
44																		
45																		
46																		
47																		
48																		
49														1				1
50																		
>50																		
Total	10	27	63	16	32	18	38	11	8	6	0	5	2	2	1	0	102	341

Just like most organisms, striped bass do not all grow at the same rate. Environmental factors and genetic predisposition influence a fish's health and body structure, creating overlap in the length ranges of different ages of fish. Length-at-age keys, like those in Tables 4 & 5, show the overlaps of length ranges for each age. Notice, however, that just like most ranges, there are fewer individuals that fall into the beginning and end of the range, than fall into the mean of the range. As a result, averages of the lengths at each age can help clear up whether the fish are generally bigger or smaller at each age, as compared to years past (Figure 10). Striped bass caught in 2010 have followed a consistent pattern of average lengths-at-age and are very similar to those in previous years. Such trends may help to show how healthy or unhealthy the stock is, and/or the results of habitat quality and predator/prey relationships. As seen in Figure 10, external influences must have been pretty consistent over the last five years.

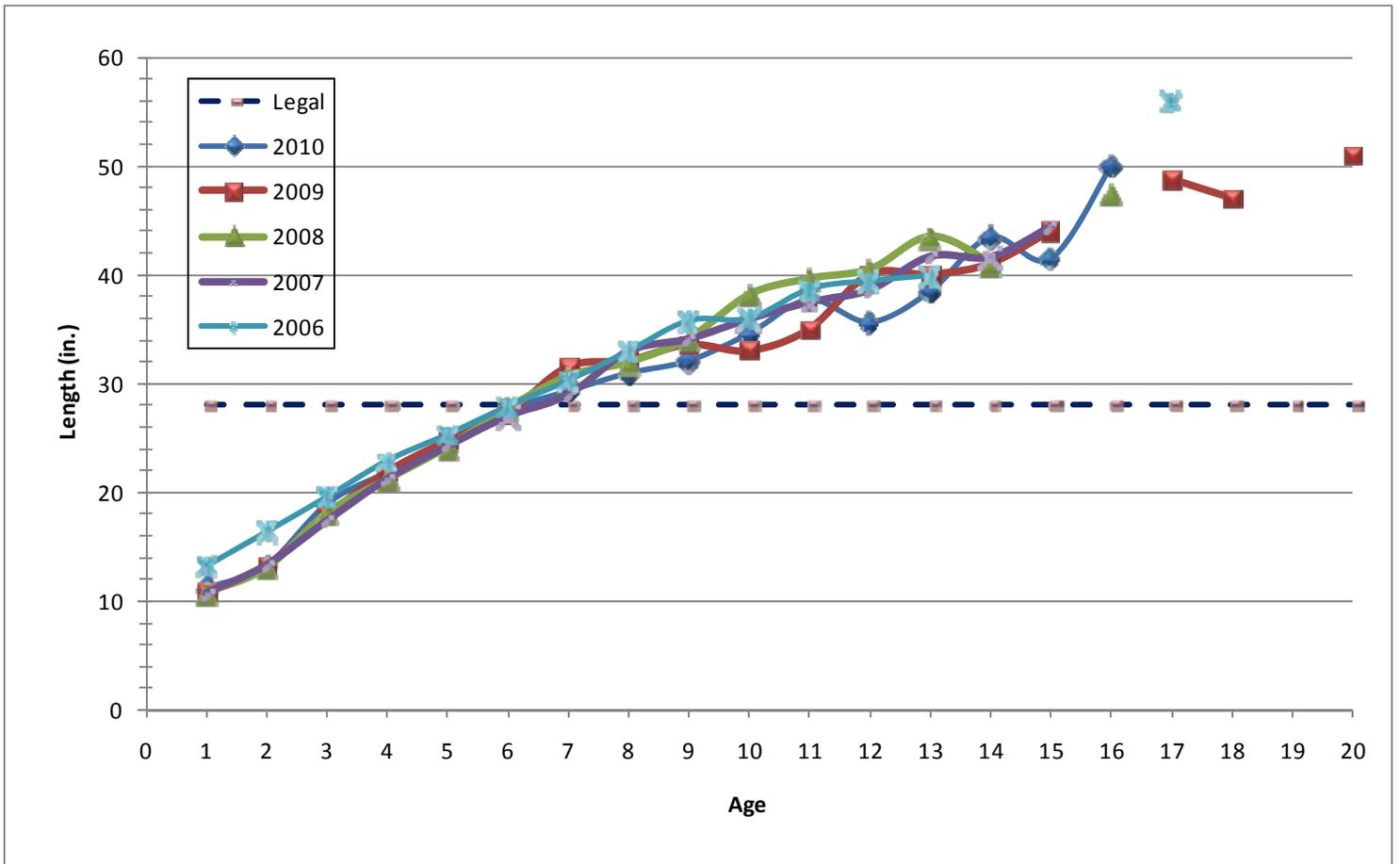


Figure 10 Average length-at-age of cooperative angler caught striped bass, 2006 – 2010

Mortality

As most anglers know, there is some mortality associated with the catch and release of striped bass. Not every fish can recover from the stress and/or injuries that may occur during capture. The ASMFC, and member states, use the rate of 8% mortality for striped bass, meaning that for approximately every 13 fish caught and released one of them will die as a result. There are several variables that influence the mortality of angler-caught fish. These include salinity, water temperature, handling of the fish (how long it is out of the water), and the area and severity of hooking/injury. Anglers interested in reducing the effects of catch and release mortality can try using circle hooks when fishing with bait. A study conducted in Massachusetts (Caruso, 2000), showed that significantly fewer injuries and deaths occurred to striped bass when circle hooks, that don't have an offset hook, were used. The study also showed that the frequency of angler hookups was not significantly different when the circle hooks were fished properly.

Another aspect of striped bass mortality has to do with the harvest of legal striped bass. Some may assume that if a legal striped bass is caught, it will undeniably be taken, therefore removed from the fishery. As anglers know and have shown, this is not true. Taking note of whether a fish has been kept or released is valuable information. As seen previously in Table 1, less than 70% of legal sized striped bass caught were actually kept by anglers over the past couple years. In 2010 59.7% of legal bass were kept, which was slightly higher than average for the past ten years (52%). When looking at each zone, Zone 4 had the highest portion kept in 2010 at 88.6%. When looking at measured legal striped bass (Figure 11), nearly half of the legal bass caught (48.2%) were released in 2010, although most of these were "smaller" fish. When looking at the graph, the percent kept increases with size. This is unfortunate since the older, larger, and heavier female striped bass get, the more eggs they produce (Olsen and Rulifson, 1992). Since egg production is an extremely energy-consuming process, it makes sense that females grow larger than males and that most fish over 30lbs would, therefore, most likely be females (Collette and Klein-MacPhee, 2002).

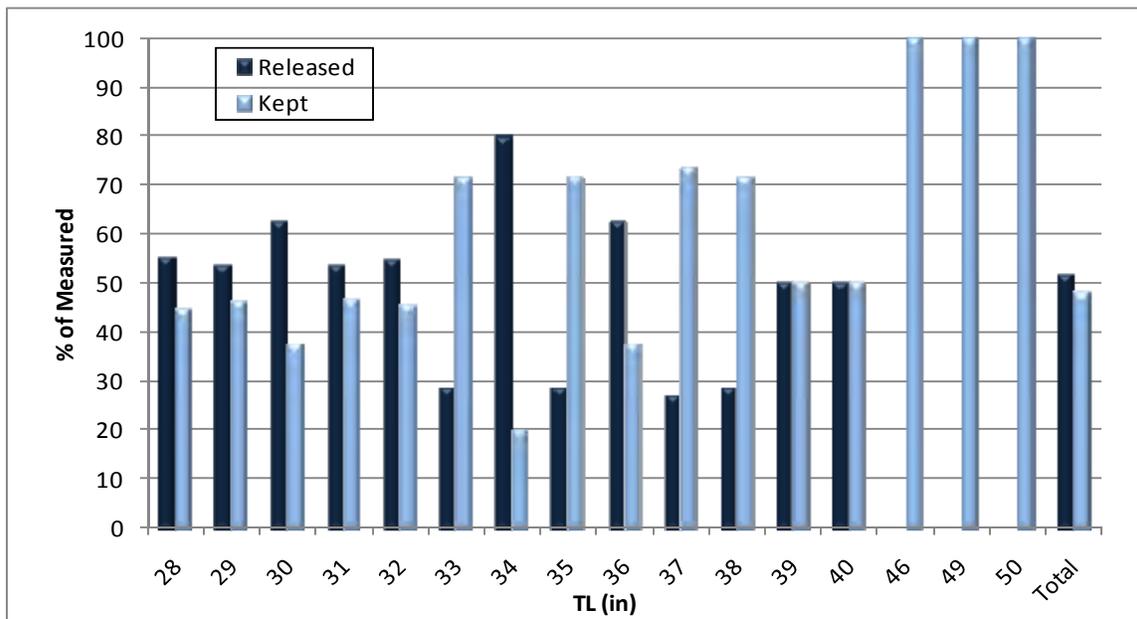


Figure 11 The proportions of legal striped bass measured in 2010 that were kept vs. released.

Regulations

No regulations pertaining to Striped Bass have changed during the 2010 season. ASMFC regulations allow for two fish, at 28-inch size limit, and a 365-day season. New York State continues to choose to be more conservative in its regulations than the regulations set by ASMFC. Hudson River regulations in 2010 remained an open season from March 15th to November 30th and a one fish, 18-inch size limit. Marine regulations in 2010 remained an open season from April 15th to December 15th and two fish total, but one must be at 28-40 inch size limit and one must be 40 or more inches. The two fish limit, with a minimum size of 28 inches, is still allowed for party/charter boat customers aboard specially permitted party/charter vessels. NYS recreational fishing laws pertaining to striped bass allows catch and release fishing during the closed season, and therefore, does not prevent cooperative anglers from collecting data and scale samples for this program year-round. Before you go out fishing you can check the most recent regulations on the DEC website at <http://www.dec.ny.gov/outdoor/7894.html> .

CONCLUSION

According to the samples provided by cooperative anglers, 2010 saw an increase in the overall quality of striped bass fishing in New York State waters, compared to 2009. The number of bass per hour had increased despite a decrease in number of fishing trips. Those who did go fishing caught a greater amount of legal bass per hour as the previous year. The average size of all the bass caught in 2010 increased slightly to 25.27 inches and the average length-at-age of the bass was similar to those in the past four years. The majority of fish caught were age 3 and 7 at 21% each, with the age 7 fish ranging from 23 to 37 inches throughout the year, which makes us optimistic that anglers should see a good amount of legal bass in 2011.

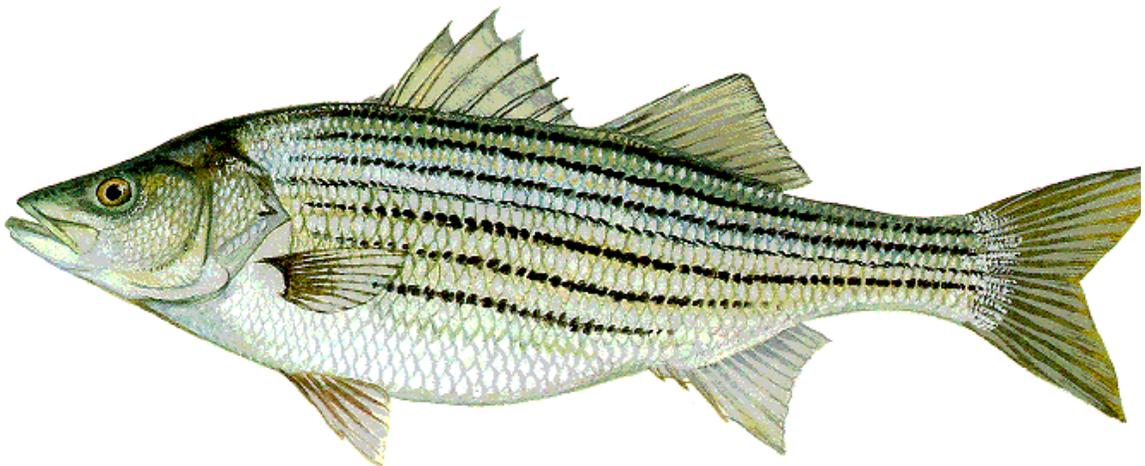
We would like to thank all of the anglers who participated with their data contributions, stories, support, and concern for the preservation of striped bass fishing. We'd also like to thank Mr. Michael Bernstein, Mr. Zachary Schuller, and Mr. Joseph Hinton for their hard work helping with data entry, sample processing, and participant recruitment.

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APPENDIX

2010 Striped Bass Cooperative Angler Annual Report



Number of Fishing Trips Reported by Zone, 2010

Angler Name	Zone						Grand Total
	1	2	3	4	5	6	
James Fitzpatrick			5		46	34	85
Tom Lowe	3	15	17		14		49
James Gubista			43		2		45
Terry Marburger		11	6	16	10		43
Lawrence J. Winston				14	17		31
Len Zimmerman	30						30
Frank Haberstroh		2	16		1		19
R. Stuyvesant Pierrepont	4	9	2	1	2		18
John Siebold					14		14
Stuart Fries	7				3		10
Sam Pletenik					9		9
Elaine Hillen		7					7
Paul Monaco		6					6
Anita Castorina		5					5
Wayne Collins	2	3					5
Chuck Barbato		3			1		4
Robert Kurau		4					4
Byron Young			3				3
James Katsaros					3		3
Donald P. Finamore	1						1
Jackson Pareoes	1						1
James Young					1		1
Jim Berton		1					1
John Mlodynia		1					1
Michael Hall			1				1
Phil LoCicero		1					1
Phil Prainito	1						1
Tom Lentz			1				1
Wayne Kempiski			1				1
Grand Total	49	68	95	31	123	34	400

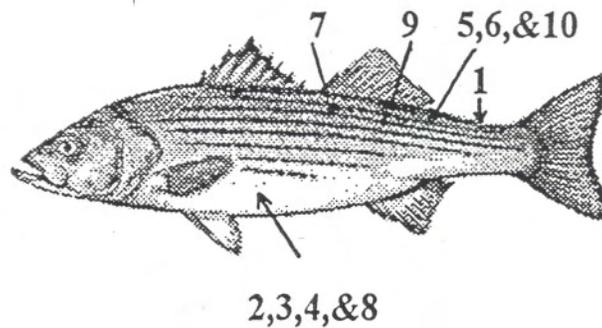
Number of Samples Provided by Zone, 2010

Angler Name	Zone						Grand Total
	1	2	3	4	5	6	
Lawrence J. Winston				89	69		158
James Fitzpatrick			4		51	60	115
R. Stuyvesant Pierrepont	19	26	8	9	21		83
Terry Marburger		62		1	10		73
Tom Lowe	25	19	5		23		72
James Gubista			65		4		69
Len Zimmerman	59						59
Stuart Fries	26				20		46
Elaine Hillen		17					17
Byron Young			14				14
John Siebold					14		14
Anita Castorina		11					11
Sam Pletenik					9		9
Chuck Barbato		6			2		8
Wayne Collins	2	5					7
Robert Kurau		6					6
Frank Haberstroh		1	3		0		4
James Katsaros					3		3
Tom Lentz			3				3
Paul Monaco		2					2
Phil Prainito	2						2
Donald P. Finamore	1						1
Jackson Pareoes	1						1
James Young					1		1
Jim Berton		1					1
John Mlodynia		1					1
Michael Hall			1				1
Phil LoCicero		1					1
Wayne Kempfski			1				1
Grand Total	135	158	104	99	227	60	783

Summary of Striped Bass 35 Inches and Larger, Caught by Cooperative Anglers During 2010

Angler Name	Month	Zone	Length (in)	Age
James Katsaros	6	5	50	16
James Katsaros	7	5	49	14
James Katsaros	6	5	46	15
James Gubista	10	3	40	
Stuart Fries	8	5	40	13
Elaine Hillen	6	2	39	10
Stuart Fries	10	1	39	10
James Fitzpatrick	11	5	38	
James Gubista	11	3	38	
Sam Pletenik	6	5	38	12
Sam Pletenik	7	5	38	12
Stuart Fries	8	5	38	14
Terry Marburger	10	4	38	12
Tom Lowe	5	3	38	11
Tom Lowe	5	1	37.75	10
Terry Marburger	5	5	37.5	10
Terry Marburger	6	5	37.5	11
James Fitzpatrick	10	5	37	10
James Gubista	11	3	37	9
John Siebold	10	5	37	8
Lawrence J. Winston	5	5	37	
R. Stuyvesant Pierrepont	5	4	37	9
R. Stuyvesant Pierrepont	11	3	37	
Stuart Fries	8	5	37	15
Stuart Fries	8	5	37	12
Stuart Fries	8	5	37	13
Stuart Fries	10	1	37	10
Terry Marburger	7	5	37	7
Tom Lowe	5	1	37	8
Stuart Fries	10	5	36.5	10
Chuck Barbato	6	5	36	9
James Fitzpatrick	5	6	36	
James Fitzpatrick	10	5	36	12
James Gubista	10	3	36	
James Gubista	10	3	36	
James Gubista	10	3	36	
James Gubista	11	3	36	
James Gubista	11	3	36	9
James Gubista	11	3	36	
James Gubista	11	3	36	7
James Gubista	11	3	36	
James Gubista	11	3	36	
Stuart Fries	10	5	36	10
Stuart Fries	10	5	36	8
James Gubista	11	3	35	
Paul Monaco	9	2	35	
Paul Monaco	9	2	35	12
R. Stuyvesant Pierrepont	5	4	35	
Sam Pletenik	10	5	35	8
Stuart Fries	5	1	35	9
Terry Marburger	5	5	35	8

GUIDE TO STRIPED BASS FISH TAGS



COLOR	LOCATION	AGENCY	PHONE#	ADDRESS
YELLOW (1)	CAUDAL PEDUCLE	ALS	732-291-0055	AMERICAN LITTORAL SOCIETY HIGHLANDS, NJ 07732
YELLOW (2)	BELLY	HRF	212-924-8290	HUDSON RIVER FOUNDATION P.O. BOX 1731 GRAND CENTRAL STATION NEW YORK, NY 10163
PINK (3)	BELLY	USFWS *A	1-800-448-8322	USFWS, MARYLAND FISHERIES OFFICE 177 ADMIRAL COCHRANE DRIVE ANNAPOLIS, MD 21401
ORANGE (3)	BELLY	USFWS *B	1-800-448-8322	USFWS, MARYLAND FISHERIES OFFICE 177 ADMIRAL COCHRANE DRIVE ANNAPOLIS, MD 21401
PINK (4)	BELLY	NC	1-800-338-7805 IN NC (OR) 919-264-3911	NC, DIVISION OF MARINE FISHERIES 1367 US 17 SOUTH ELIZABETH CITY, NC 27909
ORANGE (5)	DORSAL AREA	FISH UNLIMITED	516-749-3474	FISH UNLIMITED P.O. BOX 4746 SHELTER ISLAND HGTS., NY 11965
YELLOW (6)	BEHIND DORSAL	BERKLEY STRIPER CLUB	908-244-7968	BERKLEY STRIPER CLUB P.O. BOX 9 SEASIDE PARK, NJ 08752
YELLOW (7) DART TAG	DORSAL AREA	CCA OF MAINE	207-865-0396	COASTAL CONSERVATION ASSOCIATION OF MAINE P.O. BOX 239 FREE PORT, ME 04032
PINK (8)	BELLY	MDDNR *C	410-974-2241	MARYLAND DEPT. OF NATURAL RESOURCES TIDAL FISHERIES DIVISION TAWES STATE OFFICE BUILDING ANNAPOLIS, MD 21401
YELLOW (9) T-BAR TAG	DORSAL AREA	FINPALS	1-888-346-7257	STRIKE KING LURE COMPANY 174 HIGHWAY 72 WEST COLLIERVILLE, TN 38017
RED (10) DART TAG	DORSAL AREA	ABI	1-800-224-8247 OR 1-508-759-5993	TRACKING THROUGH TAGGING BUZZARDS BAY, MA



Laws and regulations are frequently amended by the Legislature or DEC. You should check with the Marine Fisheries office to ensure that the requirements set forth in this notice remain in effect. For further information, visit our website:

<http://www.dec.ny.gov/outdoors/7894.html>

SPECIES	MINIMUM SIZE (Total Length in Inches)	DAILY POSSESSION LIMITS (Number of Fish)	OPEN SEASONS
Summer flounder (fluke)*	20.5	3	May 1 - Sept 30
Winter flounder	12	2	April 1 - May 30
Tautog (blackfish)	14	4	Oct 1 - Dec 20 Jan 17 - Apr 30
Bluefish (including "snappers")	No minimum size limit for first 10 fish, 12" TL for the next 5	15 No more than 10 of which shall be less than 12" TL	All year
Weakfish	16 (10" filleted & 12" dressed)	1	All year
Atlantic cod+	22	10+	All year
Pollock	19	No limit	All year
Haddock	18	No limit	All year
Striped bass: marine waters** Anglers aboard licensed party/charter boats	28	2***	April 15 -- Dec 15
Striped bass : marine waters** All other anglers	28 to 40 >40	1 1	April 15 -- Dec 15
Striped bass: Hudson River north of George Washington Bridge	18	1	Mar 16 - Nov 30
Scup (Porgy) Anglers aboard licensed party/charter boats	11	10 40***	June 8 - Sept 6 Sept. 7 - Oct 11***
Scup (Porgy) All other anglers	10.5	10	May 24 – Sept 26
Black Sea Bass	13	10	June 13 – Oct 1 Nov 1 – Dec 31
Atlantic sturgeon	Moratorium	No possession allowed	No possession allowed
Cobia	37	2	All year
Spanish mackerel	14	15	All year
King mackerel	23	3	All year
Red drum	No minimum size limit	No limit for fish less than 27" TL Fish greater than 27" TL shall not be possessed	All year
American eel	6	50	All year
Monkfish (goosefish)	17 11 tail length	No limit	All year

SPECIES	MINIMUM SIZE (Total Length in Inches)	DAILY POSSESSION LIMITS (Number of Fish)	OPEN SEASONS
American shad	No possession	No possession	No possession
Hickory shad	No size limit	5	All year
Yellowtail flounder	13	No limit	All Year
Oyster toadfish	10	3	July 16 - May 14
Blue crab# Hard shell Soft shell Peeler/Shedder##	4 1/2" 3 1/2" 3"	50	All year
Crabs#	No Size Limit	50	All year
Horseshoe crabs	No size limit	5	All year
American lobster# LMA 6 (Long Island Sound) Recreational permit required.	3 3/8" minimum carapace length 5 1/4" maximum carapace length	6	All year

* Summer flounder may not have heads or tails removed or be otherwise cleaned, cut, filleted, or skinned until brought to shore, with the following exception: the white side fillet or white skin only of a legal size fluke may be removed to use as bait. The carcass of the fluke with dark side completely intact must be retained for inspection of size limit and counts against the possession limit.

** For striped bass only, marine waters is defined as south of George Washington Bridge.

*** Customers aboard a licensed party/charter boat who take more than 25 scup from Sept 7 - Oct 11 or take two striped bass from April 15 - December 15 must possess an original dated receipt from the licensed vessel.

Lobsters and crabs in spawn (eggs visible thereon) may not be taken or possessed.

Peeler or shedder crabs are hard blue crabs which have a fully formed soft shell beneath the hard outer shell and the impending shedding process is evidenced by the white sign along the outer rim of the paddle-like appendages on the crab's fifth pair of legs.

+ Customers aboard federally permitted party or charter boats may possess any number of Atlantic cod, consistent with federal rules.

Recreational Fishing Regulations for Sharks For further information call NMFS Fisheries Information Line at (301) 713-2347			
Category	Species	Minimum Size Limit	Daily Possession Limit
Allowed Sharks	Tiger, Blacktip, Bull, Great Hammerhead, Lemon, Nurse, Scalloped hammerhead, Smooth hammerhead, Spinner, Blue, Shortfin mako, Oceanic whitetip, Porbeagle, Common Thresher	54 inches fork length*	One shark per vessel per trip, except that one additional Atlantic Sharpnose and one additional Bonnethead may be taken and possessed per angler per trip.
	Atlantic sharpnose, Bonnethead, Finetooth, Blacknose	No size limit	
	Smooth dogfish, Spiny dogfish	No size limit	Any number
Prohibited Sharks	Atlantic angel, Galapagos, Basking, Longfin mako, Bigeye sand tiger, Narrowtooth, Bigeye sixgill, Night, Bigeye thresher, Sand tiger, Bignose, Caribbean reef, Caribbean sharpnose, Dusky, Whale, White+, Silky, Sandbar, Sharpnose Sevengill, Bluntnose Sixgill	No possession allowed	No possession allowed

* Fork length means the straight-line measurement of a fish from the tip of the snout to the fork of the tail. The measurement is not made along the curve of the body.

+ A person may fish for white sharks with rod and reel, provided the person releases such fish immediately with a minimum of injury and that such fish may not be removed from the water.

Other provisions

All landed sharks must have head, tails and fins attached.

No sale allowed.

No finning.