

**Small Coastal Shark SEDAR 13 Data Workshop Document**

**Bottom Longline Observer Program:  
Small Coastal Shark Catch and Bycatch 1994 to 2005**

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## Introduction

### History of the bottom longline observer program

The Commercial Shark Fishery Observer Program (CSFOP) started in 1994 as a voluntary program to observe the catch and bycatch on commercial bottom longline vessels. In 2002, the shark bottom longline observer program (SBLOP) became mandatory under the Highly Migratory Species Division (HMS) of the National Marine Fisheries Service (NMFS). In May 2005, the program was moved to the NMFS Southeast Fisheries Science Center (SEFSC) Panama City Laboratory (Burgess and Morgan 2003).

### Selection of vessels

The shark bottom longline fishery is active in the Atlantic Ocean from about the Mid-Atlantic Bight to south Florida and throughout the Gulf of Mexico. Vessels in the fishery are typically fiberglass and average 50 feet in length. Longline characteristics vary regionally with gear normally consisting of about 5-15 miles of longline and 500-1500 hooks. Gear is set at sunset and allowed to soak overnight before hauling back in the morning. There are currently about 100 active vessels in this fishery out of about 250 vessels that possess directed shark fishing permits. These vessels make between 4000-9000 sets per year (Smith et al. 2006). Vessels are randomly selected from the pool of vessels each trimester season based on the following criteria: (1) the vessel/owner must possess a current directed shark permit, (2) the permit holder (i.e. vessel/owner) must have reported fishing for sharks with bottom longline gear in the same season of the previous year, and (3) the permit holder must not have been selected for observer coverage for the prior three consecutive shark seasons. Vessels are selected from three fishing regions: North Atlantic (Maine to Virginia), South Atlantic (North Carolina to east coast of Florida including Caribbean), and Gulf of Mexico (west coast of Florida including the Keys to Texas) (NMFS 2005).

### Data collection

The bottom longline gear targets mainly large coastal sharks, but small coastal sharks, pelagic sharks, and dogfish species are also caught (Smith et al. 2006). Observers record information on gear characteristics, set characteristics, and environmental conditions. For all individual animals caught, observers identify all individuals to the lowest possible taxa, record condition of the catch when brought onboard, the final disposition, length, and the sex.

## Results and Discussion

From 1994 to 2005, 1525 sets were observed, with 995 sets catching one or more small coastal shark species (65.25%), including Atlantic sharpnose shark, *Rhizoprionodon terraenovae*, blacknose shark, *Carcharhinus acronotus*, finetooth shark, *Carcharhinus isodon*, and bonnethead, *Sphyrna tiburo*. A total of 70,160 sharks have

been recorded caught, with 22,696 small coastal sharks making up 32.35% of the shark catch (Figure 1 and Table 1). The disposition of catch was broken down as the percentage of the total catch made up of small coastal sharks, the percentage of the catch kept as bait, the percentage of the catch kept as carcass for landing, the percentage of the catch discarded dead, the percentage of the catch released alive (including tagged animals), the percentage of the catch kept for samples (museum specimens and biological samples, kept by the observer), the percentage of the catch lost before it was boarded, and the percentage of the catch with an unknown disposition (the observer was unable to record a disposition for the catch). The number of small coastal sharks caught and the disposition of the catch is reported by year (Tables 2 – 13). From 1994-2005, the two predominant species caught by number were Atlantic sharpnose shark and the blacknose shark (Figure 2). The small coastal shark catch and disposition is further divided by area (Gulf of Mexico and South Atlantic including the Mid-Atlantic Bight, Tables 14 and 15). The distribution of sets with capture of small coastal sharks for 1994 through 2005 is shown in Figure 3.

### **Literature Cited**

- Burgess, G.H. and A. Morgan. 2003. Commercial Shark Fishery Observer Program. Renewal of an observer program to monitor the directed commercial shark fishery in the Gulf of Mexico and south Atlantic: 2002(2) and 2003(1) fishing seasons. Final Report, U.S. National Marine Fisheries Service, Highly Migratory Species Management Division Award NA16FM1598, 15p.
- National Marine Fisheries Service (NMFS). 2005. 2005 Guide for complying with the regulations for Atlantic Tunas, Swordfish, Sharks, and Billfish, 39 p.
- Smith, P.C., L.F. Hale, and J.K. Carlson. 2006. The Directed Shark Longline Fishery: Catch and Bycatch, 2005. NOAA Technical Memorandum NMFS Panama City Laboratory Contribution 06-04, 15 p.

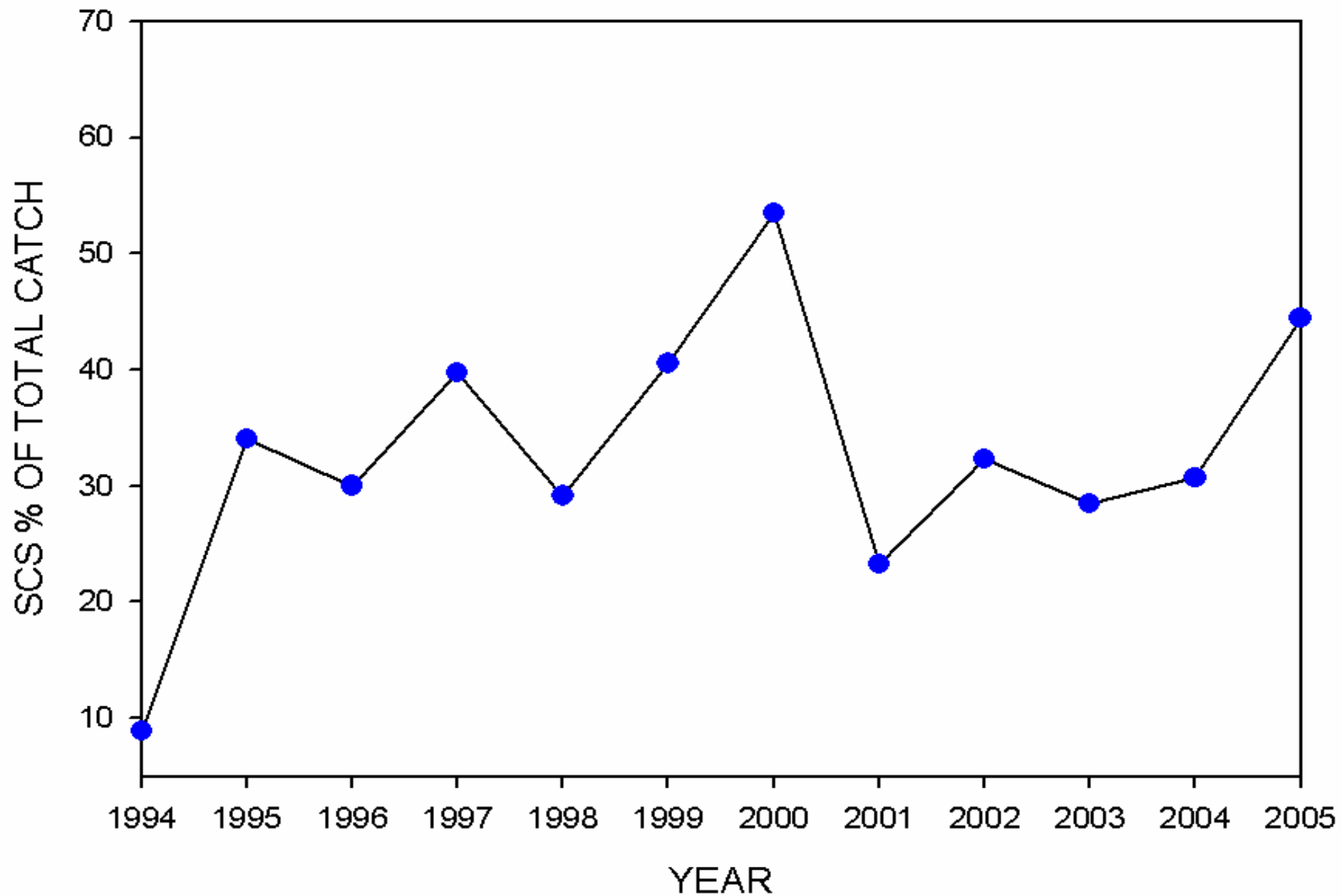


Figure 1. Percent catch of small coastal sharks as a proportion of the total catch for 1994 through 2005.

Table 1. Overall number caught and disposition of catch for all small coastal sharks from all observed bottom longline sets from 1994 through 2005.

Shark Common Name	Number Caught	Percent of SCS	Percent Bait	Percent Carcass	Percent Discard	Percent Release	Percent Kept for Sample	Percent Lost	Percent Unknown
Blacknose	3370	14.85	18.40	57.09	17.06	5.10	1.22	0.33	0.83
Finetooth	88	0.39	0.00	95.45	1.14	1.14	2.33	0.00	0.00
Atlantic Sharpnose	19131	84.29	68.10	20.22	9.49	1.54	0.01	0.03	0.61
Bonnethead	107	0.47	28.97	53.27	12.15	3.74	1.87	0.00	0.00
All SCS	22696								
All Sharks	70160								

Table 2. Number caught and disposition of catch for small coastal sharks from observed bottom longline sets in 1994.

Shark Common Name	Number Caught	Percent of SCS	Percent Bait	Percent Carcass	Percent Discarded	Percent Released	Percent Kept for Sample	Percent Lost	Percent Unknown
Blacknose	148	54.01	20.27	66.89	12.16	0.00	0.68	0.00	0.00
Finetooth	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic Sharpnose	125	45.62	36.00	15.20	47.20	0.80	0.00	0.80	0.00
Bonnethead	1	0.37	0.00	0.00	100.00	0.00	0.00	0.00	0.00
All SCS	274								
All Sharks	3091								

Table 3. Number caught and disposition of catch for small coastal sharks from observed bottom longline sets in 1995.

Shark Common Name	Number Caught	Percent of SCS	Percent Bait	Percent Carcass	Percent Discarded	Percent Released	Percent Kept for Sample	Percent Lost	Percent Unknown
Blacknose	437	16.56	17.16	72.31	7.78	1.60	0.46	0.23	0.46
Finetooth	3	0.11	0.00	66.67	0.00	0.00	33.33	0.00	0.00
Atlantic Sharpnose	2184	82.76	40.75	58.01	0.73	0.41	0.00	0.00	0.09
Bonnethead	15	0.57	66.67	13.33	13.33	0.00	6.67	0.00	0.00
All SCS	2639								
All Sharks	7762								

Table 4. Number caught and disposition of catch for small coastal sharks from observed bottom longline sets in 1996.

Shark Common Name	Number Caught	Percent of SCS	Percent Bait	Percent Carcass	Percent Discarded	Percent Released	Percent Kept for Sample	Percent Lost	Percent Unknown
Blacknose	425	25.00	6.82	85.65	1.41	2.35	2.35	1.18	0.24
Finetooth	3	0.18	0.00	66.67	0.00	0.00	33.33	0.00	0.00
Atlantic Sharpnose	1239	72.88	36.32	59.56	1.69	0.81	0.00	0.08	1.53
Bonnethead	33	1.94	6.06	90.91	0.00	0.00	3.03	0.00	0.00
All SCS	1700								
All Sharks	5665								

Table 5. Number caught and disposition of catch for small coastal sharks from observed bottom longline sets in 1997.

Shark Common Name	Number Caught	Percent of SCS	Percent Bait	Percent Carcass	Percent Discarded	Percent Released	Percent Kept for Sample	Percent Lost	Percent Unknown
Blacknose	41	2.58	4.88	56.10	29.27	9.76	0.00	0.00	0.00
Finetooth	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic Sharpnose	1549	97.36	32.54	58.62	8.59	0.19	0.06	0.00	0.00
Bonnethead	1	0.06	0.00	0.00	100.00	0.00	0.00	0.00	0.00
All SCS	1591								
All Sharks	4005								

Table 6. Number caught and disposition of catch for small coastal sharks from observed bottom longline sets in 1998.

Shark Common Name	Number Caught	Percent of SCS	Percent Bait	Percent Carcass	Percent Discarded	Percent Released	Percent Kept for Sample	Percent Lost	Percent Unknown
Blacknose	199	9.90	12.56	81.91	1.51	2.51	1.01	0.50	0.00
Finetooth	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic Sharpnose	1807	89.90	83.51	7.97	3.38	0.33	0.00	0.00	4.81
Bonnethead	4	0.20	0.00	100.00	0.00	0.00	0.00	0.00	0.00
All SCS	2010								
All Sharks	6895								

Table 7. Number caught and disposition of catch for small coastal sharks from observed bottom longline sets in 1999.

Shark Common Name	Number Caught	Percent of SCS	Percent Bait	Percent Carcass	Percent Discarded	Percent Released	Percent Kept for Sample	Percent Lost	Percent Unknown
Blacknose	124	5.72	66.13	16.13	12.90	0.00	4.84	0.00	0.00
Finetooth	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic Sharpnose	2040	94.14	89.66	9.61	0.54	0.10	0.05	0.00	0.05
Bonnethead	3	0.14	100.00	0.00	0.00	0.00	0.00	0.00	0.00
All SCS	2167								
All Sharks	5346								

Table 8. Number caught and disposition of catch for small coastal sharks from observed bottom longline sets in 2000.

Shark Common Name	Number Caught	Percent of SCS	Percent Bait	Percent Carcass	Percent Discarded	Percent Released	Percent Kept for Sample	Percent Lost	Percent Unknown
Blacknose	78	4.68	58.97	38.46	0.00	0.00	1.28	1.28	0.00
Finetooth	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic Sharpnose	1587	95.32	99.87	0.06	0.06	0.00	0.00	0.00	0.00
Bonnethead	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
All SCS	1665								
All Sharks	3113								

Table 9. Number caught and disposition of catch for small coastal sharks from observed bottom longline sets in 2001.

Shark Common Name	Number Caught	Percent of SCS	Percent Bait	Percent Carcass	Percent Discarded	Percent Released	Percent Kept for Sample	Percent Lost	Percent Unknown
Blacknose	27	2.14	77.78	3.70	7.41	0.00	11.11	0.00	0.00
Finetooth	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic Sharpnose	1231	97.39	92.77	0.65	6.34	0.24	0.00	0.00	0.00
Bonnethead	6	0.47	100.00	0.00	0.00	0.00	0.00	0.00	0.00
All SCS	1264								
All Sharks	5428								

Table 10. Number caught and disposition of catch for small coastal sharks from observed bottom longline sets in 2002.

Shark Common Name	Number Caught	Percent of SCS	Percent Bait	Percent Carcass	Percent Discarded	Percent Released	Percent Kept for Sample	Percent Lost	Percent Unknown
Blacknose	492	23.13	21.75	41.06	27.44	9.55	0.20	0.00	0.00
Finetooth	1	0.05	0.00	100.00	0.00	0.00	0.00	0.00	0.00
Atlantic Sharpnose	1632	76.73	50.80	11.15	28.37	9.31	0.00	0.00	0.37
Bonnethead	2	0.09	100.00	0.00	0.00	0.00	0.00	0.00	0.00
All SCS	2127								
All Sharks	6577								

Table 11. Number caught and disposition of catch for small coastal sharks from observed bottom longline sets in 2003.

Shark Common Name	Number Caught	Percent of SCS	Percent Bait	Percent Carcass	Percent Discarded	Percent Released	Percent Kept for Sample	Percent Lost	Percent Unknown
Blacknose	498	18.29	4.82	55.62	27.91	10.64	1.00	0.00	0.00
Finetooth	2	0.07	0.00	100.00	0.00	0.00	0.00	0.00	0.00
Atlantic Sharpnose	2220	81.53	77.88	0.63	18.11	3.24	0.00	0.09	0.05
Bonnethead	3	0.11	0.00	100.00	0.00	0.00	0.00	0.00	0.00
All SCS	2723								
All Sharks	9567								

Table 12. Number caught and disposition of catch for small coastal sharks from observed bottom longline sets in 2004.

Shark Common Name	Number Caught	Percent of SCS	Percent Bait	Percent Carcass	Percent Discarded	Percent Released	Percent Kept for Sample	Percent Lost	Percent Unknown
Blacknose	376	15.12	22.61	21.01	43.09	9.84	2.39	0.00	1.06
Finetooth	5	0.20	0.00	100.00	0.00	0.00	0.00	0.00	0.00
Atlantic Sharpnose	2094	84.20	75.50	13.09	10.36	1.00	0.00	0.05	0.00
Bonnethead	12	0.48	25.00	0.00	58.33	16.67	0.00	0.00	0.00
All SCS	2487								
All Sharks	8098								



Table 13. Number caught and disposition of catch for small coastal sharks from observed bottom longline sets in 2005.

Shark Common Name	Number Caught	Percent of SCS	Percent Bait	Percent Carcass	Percent Discarded	Percent Released	Percent Kept for Sample	Percent Lost	Percent Unknown
Blacknose	525	25.62	17.90	66.67	13.14	1.71	0.00	0.57	0.00
Finetooth	74	3.61	0.00	97.30	1.35	1.35	0.00	0.00	0.00
Atlantic Sharpnose	1423	69.45	65.71	8.36	24.88	1.05	0.00	0.00	0.00
Bonnethead	27	1.32	18.52	66.67	7.41	7.41	0.00	0.00	0.00
All SCS	2049								
All Sharks	4613								

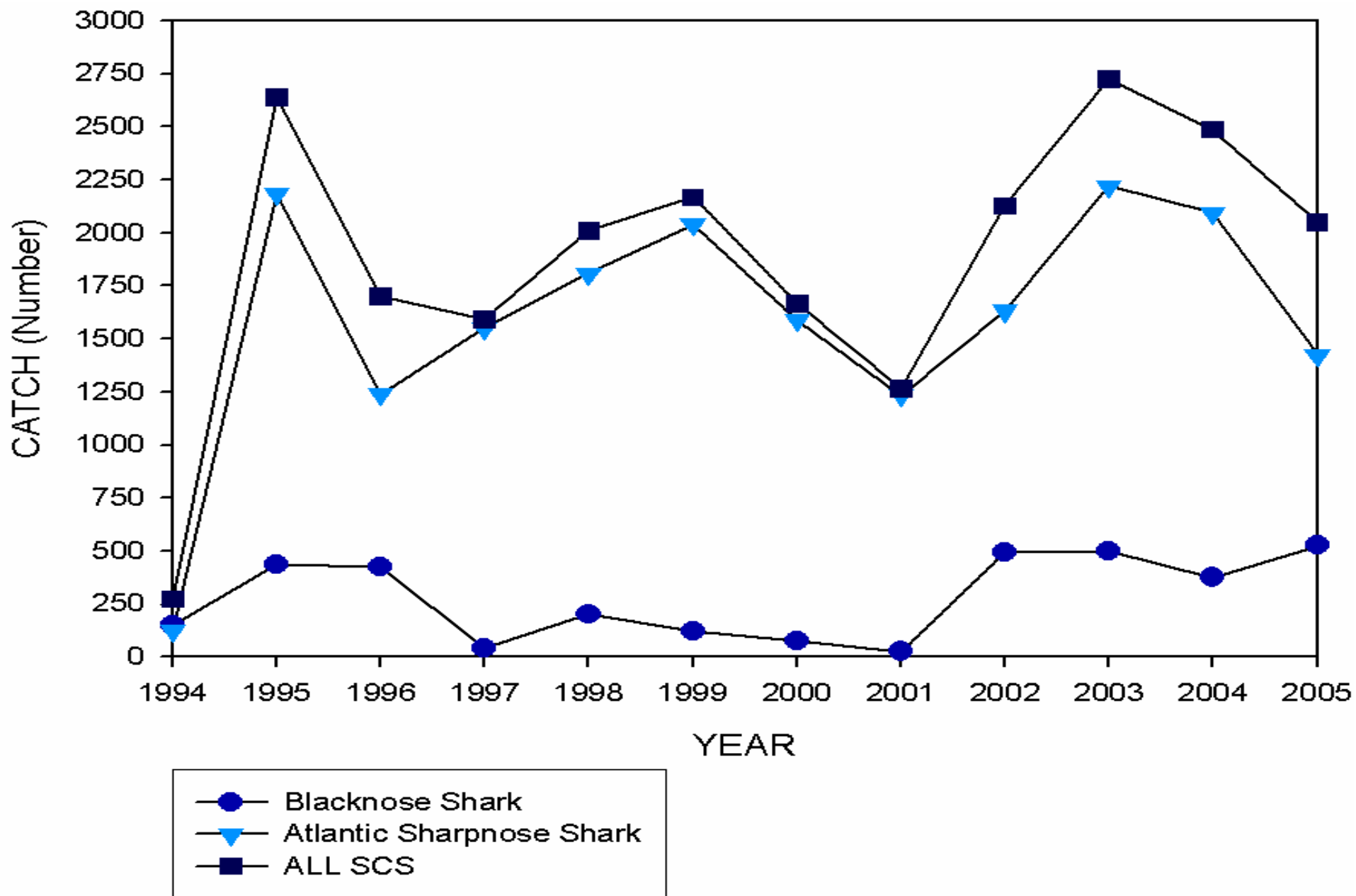


Figure 2. Number caught by year for the two most commonly caught small coastal sharks, the Atlantic sharpnose shark and the blacknose shark, for 1994 through 2005 in all areas for all observed bottom longline sets.

Table 14. Number caught and disposition of catch for small coastal sharks from observed bottom longline sets in the Gulf of Mexico from 1994 through 2005.

Shark Common Name	Number Caught	Percent of SCS	Percent Bait	Percent Carcass	Percent Discarded	Percent Released	Percent Kept for Sample	Percent Lost	Percent Unknown
Blacknose	2233	33.83	22.44	43.80	25.35	7.21	0.94	0.04	0.04
Finetooth	79	1.20	0.00	97.47	1.27	1.27	0.00	0.00	0.00
Atlantic Sharpnose	4240	64.23	60.14	4.29	29.46	6.01	0.02	0.02	0.05
Bonnethead	49	0.74	34.69	42.86	14.29	8.16	0.00	0.00	0.00
All SCS	6601								
All Sharks	22973								

Table 15. Number caught and disposition of catch for small coastal sharks from observed bottom longline sets in the South Atlantic from 1994 through 2005.

Shark Common Name	Number Caught	Percent of SCS	Percent Bait	Percent Carcass	Percent Discarded	Percent Released	Percent Kept for Sample	Percent Lost	Percent Unknown
Blacknose	1137	7.06	10.47	83.20	2.46	0.79	1.76	0.70	0.62
Finetooth	9	0.06	0.00	77.78	0.00	0.00	22.22	0.00	0.00
Atlantic Sharpnose	14891	92.52	70.36	24.77	3.81	0.26	0.01	0.03	0.77
Bonnethead	58	0.36	24.14	62.07	10.34	0.00	3.45	0.00	0.00
All SCS	16095								
All Sharks	22973								

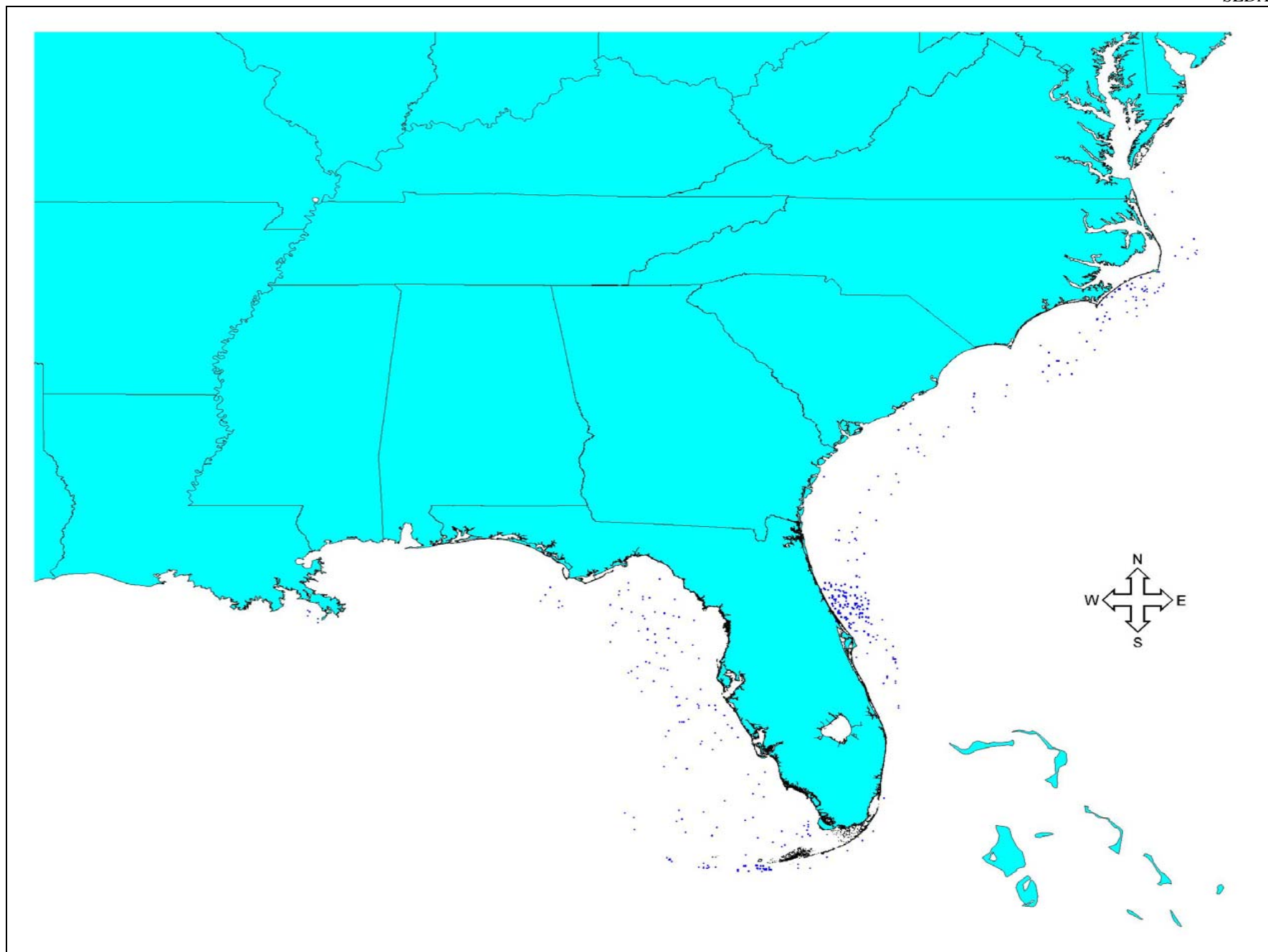


Figure 3. Distribution of all observed sets in which small coastal sharks were caught for all years for both programs combined.