

**THE UNITED STATES ATLANTIC COASTAL SHARK FISHERY**

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**SUMMARY**

An increased domestic market for shark meat concomitant with an escalating shark fin export market has inspired a recent increase in the U.s. coastal shark fishery. This document offers a brief description of that fishery.

**RESUME**

Un marché national accru pour le requin concomitant avec un marché d'exportation de nageoires de requins en hausse a provoqué un accroissement récent dans la pêche côtière de requins des Etats-Unis. Ce document fournit une brève description de cette pêche.

**RESUMEN**

Un aumento en la demanda del mercado nacional de carne de tiburón, acompañado por un incremento del mercado de exportación de aletas de tiburón, ha estimulado un reciente aumento en la pesquería costera estadounidense de tiburón. Este documento ofrece una breve descripción de esa pesquería.

Since 1985, an intensive shark fishery has developed off the Atlantic coast and in the Gulf of Mexico coastal waters of the United States from southern New England to Louisiana. The fishery provides shark meat to domestic markets and fins for export to Asian markets. It is the first large scale commercial shark fishery in the area in over four decades.

Prior to the present time, the only intensive, commercial shark fishery in the southeastern United States operated off the Atlantic coast from Port Salerno, Florida from 1936 to 1950. Sharks were landed primarily for their livers and hides, although fresh and salted shark, fins, and fish meal were also produced. The liver oil was used in the production of vitamin A, and the hides were processed into leather. Up to 16 boats operated in the fishery, but usually not more than five boats fished at one time (Springer, 1952). Fishing was carried on with longlines made of chain during 1938 to 1946, although during some summers one boat set gill nets for nurse sharks close to shore. The great weight of the chain line confined fishing to depths of less than 45 m, although a few sets were made in depths as great as 90 m when currents were not strong. The catch per unit-of-effort increased in the last three years of the fishery (1947-1950) concomitant with an expansion of the fishery and a bonus arrangement that encouraged cooperation among the fishermen (Springer, 1952). This fishing operation was discontinued early in 1950, due to the appearance of low cost synthetic Vitamin A in the market.

There was little consumption of shark meat in the United States prior to the 1970's, although small quantities of sharks were consumed in coastal areas throughout the southeastern states. These markets were supplied by small local fisheries. During the early 1970's shark meat consumption increased. In the mid-1970's, political and economic changes in the Asia opened the Asian shark fin market to the United States. Commercial marketing links between U.S. fishermen and consumers of shark fin in China and Hong Kong were established over a five to seven year period. A tremendous demand and high market value in Asia for shark fins encouraged the expansion of the U.S. Atlantic coastal shark fishery. The fleet targeting coastal sharks expanded quickly. In addition, due to escalating shark fin prices, vessels engaged in tuna and swordfish as well as other fisheries started removing the fins of sharks caught incidental to target species instead of releasing the sharks unharmed and intact as they did previously. Thus, both the increased popularity of sharks as food and the demand for shark fins caused a very rapid increase in shark removals.

The southeastern United States directed coastal shark fleet employs longlines and gill nets from boats 12-27 m in length, although most boats are in the 12-14 m range. Monofilament mainlines are used when ever possible, but since fishing is carried out near the bottom, steel cable main line is used in waters deeper than about 50-65 m. The cable longline heaver and requires heavier handling equipment, so that gear is used on larger boats, usually those 20 m in length and larger. Economic factors up to the present time are such that most fishermen prefer boats of about 16-17 m. These boats use monofilament longlines in waters of 50 m and less. Smaller boats use two to three man crews and larger boats use five or six man crews. Longliners operate during most of the year and the more successful boats following migrating sharks as they move north in the spring and summer and south in the fall. The primary species caught by longline fishermen are sandbar (*Carcharhinus plumbeus*), blacktip (*C. limbatus*), bull (*C. leucas*), spinner (*C. brevipinna*), dusky (*C. obscurus*), bignose (*C. altimus*), night (*C. signatus*), lemon (*Negaprion brevirostris*), sand tiger (*Odontaspis taurus*), scalloped hammerhead (*Sphyrna lewini*) and great hammerhead sharks (*S. mokarran*).

Two distinctly different shark gill net boats exist: a small boat fishery using manual net handling methods and a modern fleet with mechanized highly efficient methods.

The small boat fishery has existed in the southeastern states for many years. Those fishermen operate in very shallow coastal waters from small boats 5-6 m in length, usually in one or two persons teams. They set from one to several nets of about 120 m in length in shallow waters, often in estuaries, by hand. Their operations are usually restricted the months of May through November when sharks are in the shallows pupping or are migrating through. These shallow estuarine waters, 2-3 m deep, are the nursery areas for many species of sharks. Gill net fishermen operating in these waters catch sandbar, blacktip, finetooth (*C. isodon*), blacknose (*C. acronotus*), bull, spinner, dusky, Atlantic sharpnose (*Rhizoprionodon terraenovae*), sand tiger, scalloped hammerhead, and many other species as well. Recent legislation in several states has essentially terminated the use commercial gill nets in state waters, forcing these small boat gill net shark fishermen into deeper, federal waters (usually beyond 4.5 km from the shore) where their nets are much less effective.

The modern gill net fleet is composed of boats 17 to 20 m in length. Hydraulic setting and retrieval machinery is employed as are spotter aircraft. Seven of these vessels directed their operations at blacktip sharks during 1991 off the Atlantic coast. These boats do not fish sharks year around, rather they opportunistically target peak concentrations of migrating schools close to shore in the spring and fall. Recently, legislation by several Atlantic states has curtailed their operations, but in the very recent past, these boats removed large quantities of sharks from shallow, coastal waters.

The number of boats that targeted sharks on at least one trip each month the boat fished (below) shows an initial rapid expansion of the fishery, then a decrease since 1989.

	86	87	88	89	90	91
Longline:	31	42	95	118	110	70
Gill Net:	11	13	14	13	11	9
Not Known:	0	0	1	1	2	17
Total:	42	55	110	132	123	96

After 1989 the larger vessels left the fishery, but these and more boats entered in 1992 due to high fin prices and restrictions in other fisheries. The major ports for these vessels are Morehead City, North Carolina; Port Orange on the Atlantic coast of Florida, and Madeira Beach on the Gulf of Mexico coast of Florida; and Bayou LaBatre, Alabama.

Recreational fisheries also exist for Atlantic sharks in the United States. Although landings are small and sporadic, there has been an increasing interest in shark sport fishing in the 1980's. Decreasing recreational catches, particularly in shark fishing tournaments in the southern United States, has prompted concern by the sport fishing community for the status of the resource. Several shark fishing tournaments no longer occur due to the absence of success by tournament entries in recent years.

Although commercial shark fishery statistics exist (Table 1), they are limited. All species of commercially caught sharks are classified as "shark", although at times by catch from the swordfish and tuna fisheries are labeled as "mako," "thresher," "hammerheads," "brown", and "others". There are no species composition or size samples and catch-effort samples do not exist. Furthermore, inaccurate reporting and non-reporting of commercial landings are commonplace; thus, extensive revisions of the landings statistics have been necessary. However, some statistics may still be unreliable. In addition, the extent of wastage due to "finning", i.e., removing the fins and discarding the shark to die if it is not yet dead, is unrecorded in the statistics; preliminary information suggests such loss may be at about the same magnitude or greater than the landings. Recreational fishery statistics are based on a comprehensive sample survey. The survey estimates both the numbers of sharks caught and the number of days fished.

Intensive shark fisheries are often short lived with the collapse of the fisheries occurring in just a few years. Sharks grow very slowly and their reproductive rate is very low so the risk of fishery collapse is extremely high. Most species of commercially important large sharks require several years (perhaps 20 or more for sandbar sharks) to reach maturity and produce a small litters (nine for sandbar sharks) every other year. These characteristics make it imperative that removals be regulated to very low levels.

A shark fishery management plan has been prepared for Atlantic sharks by the National Marine Fisheries Service to optimize resource use and minimize the risk of fishery collapse. This plan will manage 39 species of sharks that are caught in commercial and recreational fisheries. The plan will establish quotas and seasons for the commercial fisheries, and daily bag limits for recreational fisheries.

#### Literature Cited

Springer, S. 1952. The effects of fluctuations in the availability of sharks on a shark fishery. Proc. Gulf & Caribbean Fish. Inst., Fourth Annual Session: 140-45.

Table 1. U.S.A. Atlantic shark fishery statistics, 1986-1991.

Fishery	Yr	landings		
		no. of boats	mt, dressed	
Commercial	86	42	1301	
	87	55	2451	
	88	110	4057	
	89	132	5013	
	90	123	3830	
	91	96	4010	
Recreational	Yr	Angler-		landings
		directed	total	
Recreational	86	343175	53959000	154199
	87	287639	58999100	153473
	88	413083	58497700	159703
	89	195957	43388500	105760
	90	241992	48531200	125074
	91	173491	55734600	153056