

Soupin Shark

History of the Fishery

The soupfin shark (*Galeorhinus galeus*) was the mainstay of the shark fishery boom for vitamin oils between 1936 and 1944 when over 24 million pounds were landed. Prior to that time, soupfins were mainly marketed within the local Asian communities up and down the Pacific coast. The meat sold anywhere from \$0.10 to \$0.20 per pound, but the fins, which are used for soup stock brought as much as \$2.50 per pound prior to 1936. The fishery for this species began in earnest when it was discovered that their livers were rich in vitamin oil. The value of each shark species was based on its high potency vitamin oil and the soupfin was found to have the highest vitamin oil levels among California's shark species. Prior to the development of this fishery, cod liver oil was produced in Europe and exported to the United States. With the onset of World War II and the curtailment of cod liver oil production in Europe, these events set the stage for the expansion of this fishery. Shipping cod liver oil from Europe became so hazardous that its production and exportation eventually declined to nothing. The West Coast soupfin shark population represented a tremendous source of raw material. The market for shark liver oils to replace the non-available cod liver oil improved rapidly and in a relatively short time the huge potential of the Pacific coast soupfin supply had been tapped. The fishery finally collapsed in the mid-1940s from over-exploitation and the development of synthetic vitamins. This fishery decimated the soupfin population, particularly nursery areas in San Francisco and Tomales bays, which to this day have never fully recovered. In the mid-1970s, there was a renewed interest in shark fisheries, although this time for their meat as food for human consumption.

While the commercial fishery for soupfins has been widely recounted, less attention has been paid to its recreational exploitation. Soupfins were one of the more common species caught in San Francisco Bay during the late 1940s through the early 1960s by recreational anglers. This fishery declined somewhat until the *Jaws* phenomenon of the mid-1970s brought about a renewed awareness of sharks. Sport fishing boats in San Francisco Bay and southern California began targeting these, among other shark species. Unlike the commercial fishery, landings data for recreational caught soupfins are sketchy at best and are under-reported, if reported at all. Soupfins are prized by recreational anglers for their meat.

Status of Biological Knowledge

The soupfin shark is one of five species of houndsharks (Family Triakidae) found in California waters. Along the California coast, soupfin sharks generally inhabit conti-

mental shelf waters from close inshore, including shallow bays, often near the bottom, but also offshore waters up to 1,500 feet deep. In the eastern North Pacific they range from British Columbia to central Baja California.

Coast wide there is a preponderance of adult males in the northern part of the state and females to the south; in central California the sex ratio is about one to one. Adult males south of Point Conception tend to occur in deeper water (more than 65 feet) while females occur closer inshore (less than 45 feet). Soupfins often occur in small schools that segregate by size and sex.

Soupfins are highly migratory, moving to the north during the summer and south during the winter or into deeper waters. They are swift moving and can travel up to 35 miles per day and have been reported to travel at a sustained rate of 10 miles per day for up to 100 days. One soupfin tagged off Ventura was captured 26 months later off Vancouver Island, British Columbia. Another shark tagged in San Francisco Bay was recaptured 12 months later in the same location.

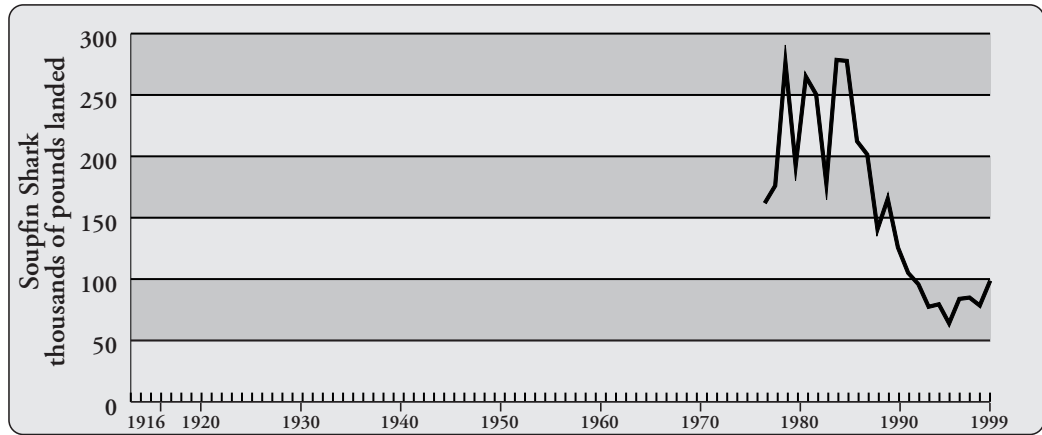
Soupin sharks are ovoviviparous, with litters of between six and 52 young, the average being 35. The litter size increases in proportion to the female's size. Mating takes place during the spring with a gestation period of about 12 months. Southern California, south of Point Conception, is an important nursery ground. Adult females and newborn soupfins occur in considerable numbers in this area. Pups are born during the spring at a size of between 12 and 16 inches. Males mature between 53 and 60 inches, and grow to a maximum size of 70 inches. Females mature at about 24 inches, and grow to a maximum size of 77 inches. Males mature in eight to nine years and females in about 11 years. The maximum estimated age for these sharks is about 40 years.

Soupfins readily forage on both demersal and pelagic bony fish species, although larger individuals prefer cartilaginous fishes. Invertebrate prey includes cephalopods, crabs, shrimp, and lobster. Young sharks tend to feed more heavily on invertebrates than do adults. Natural predators on soupfins, particularly juveniles, include the white shark, sevengill shark, and possibly marine mammals.



Soupin Shark, *Galeorhinus galeus*
Credit: DFG

**Commercial Landings
1916-1999, Soupin Shark**
Data Source: DFG Catch
Bulletins and commercial
landing receipts. Commercial
landings prior to 1977 were
not available. All shark landings
were aggregated until 1977.



Status of the Population

California's soupfin shark population has not been studied in over 50 years and its status is unknown. Since 1977, the fishery has averaged between 150,000 and 250,000 pounds dressed weight landed annually.

David Ebert
US Abalone

References

Cailliet, G.M., D.B. Holts, and D. Bedford. 1992. A review of the commercial fisheries for sharks on the west coast of the United States. In: Shark Conservation: Proceedings of an International Workshop on the Conservation of Elasmobranchs. Eds. J. Pepperell, J. West, and Peter Woon. Pp. 13-29.

Ebert, D.A. 1986. Observations on the elasmobranch assemblage of San Francisco Bay. Calif. Fish Game, 72 (4): 244-249.

Ripley, W.E. 1946. The biology of the soupfin, *Galeorhinus zyopterus*. Calif. Fish and Game, Fish Bull. no. 64, 96 pp.

Roedel, P.M. and W.E. Ripley 1950. California sharks and rays. Calif. Fish and Game, Fish Bull. no. 75, 88 pp.