



Shark Tagging News



A Newsletter of the CDFG Shark Tagging Program

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As some of you may know, this is the sixth and final CDFG Shark Tagging Program Newsletter. During the summer of 2000, the Department decided to discontinue the Shark Tagging Program because Sport Fish Restoration Act funding was redirected to higher priority activities within the Marine Region. These activities are related to implementing the Marine Life Management Act.

Currently, we have approximately 300 shark tags left. We will continue to distribute these tags to our current taggers until our supply has been exhausted. If our database shows that you have more than 25 outstanding tags (this includes both 'JS' and 'SH' tags), we will not issue you any more tags until we have received the information cards in the mail. This will give all our current taggers a chance to tag as many sharks as possible. If any tags were lost, notify us immediately so we can update the database. Although the Shark Tagging Program has been discontinued, we will continue to maintain the historical database and receive all tagging and recapture data.

If you would like to participate in another shark tagging program, contact Diego Bernal at Tagger International. You can reach Tagger International at (310) 793-0540 or through their web page www.taggerinternational.com. You can also reach Tagger International at P.O. Box 2058, Redondo Beach, CA, 90278.

This newsletter is dedicated to all of our volunteer taggers, without whose help the tagging program would not have been a success. Thank you all for your time, effort, and expenses over the years. The Department greatly appreciates all of your hard work and dedication. Please keep tagging and keep up the good work!

-Valerie Taylor, Marine Biologist



2000 TAGGING OVERVIEW

This year 36 active volunteers tagged 337 sharks, bringing the program total to more than 11,000 sharks (Table 1). Eight species of shark were tagged: blue shark (*Prionace glauca*), leopard shark (*Triakis semifasciata*), sevengill shark (*Notorynchus maculatus*), shortfin mako shark (*Isurus oxyrinchus*), white shark (*Carcharodon carcharias*), basking shark (*Cetorhinus maximus*), soupfin shark (*Galeorhinus zyopterus*), and spiny dogfish (*Squalus acanthias*). Four tagged sharks were recaptured in 2000, bringing the recapture total to 198 (Table 1). The recaptures consisted of two mako and two blue sharks.

Table 1. Summary of tagged (T) and recaptured (R) sharks, 1983-2000 (includes sharks tagged by CDFG and NMFS biologists).

	1983-99		2000*		Total	
	T	R	T	R	T	R
Blue Shark	7175	57	531	2	7706	59
Shortfin Mako	2741	122	42	2	2783	124
Angel Shark	107	6	0	0	107	6
Thresher Shark	148	2	0	0	148	2
Basking Shark	57	0	1	0	58	0
Sevengill Shark	70	6	2	0	72	6
Leopard Shark	77	1	35	0	112	1
White Shark	40	0	4	0	44	0
Soupfin Shark	5	0	1	0	6	0
Spiny Dogfish	4	0	1	0	5	0
Smoothhounds	3	0	0	0	3	0
Other Species	23	0	1	0	24	0
Total:	1045	194	618	4	11068	198

*2000 preliminary data

SHARK MIGRATIONS

MAKO SHARKS

Both mako sharks recaptured this year were caught outside of the Southern California Bight. The first shark was originally tagged on October 25, 1997, off Hermosa Beach, California, and was recaptured on January 21, 2000, by a commercial longline vessel. The shark was at liberty for over two years and traveled at least 1,137 nautical miles (nm) (Figure 1). While at liberty, it grew approximately 31 inches. The second shark was tagged on August 9, 1997 near Osborn Bank and traveled south from local waters down to Cabo San Lucas, Mexico. It moved more than 880 nm and was at liberty for approximately three years (Figure 1). Length data is not available for this shark.

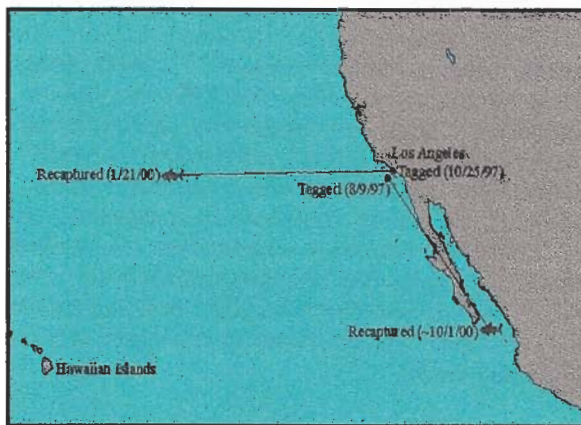


Figure 1

BLUE SHARKS

Two blue sharks were recaptured in 2000. Both were caught within the Southern California Bight. The first shark was tagged on July 6, 2000, and was recaptured after just nine days. It traveled within 35 nm of its tagging location near San Diego (Figure 2). The second shark was tagged off Oceanside on April 4, 2000. It was at liberty for 110 days and was caught 33 nm from its point of release (Figure 2).

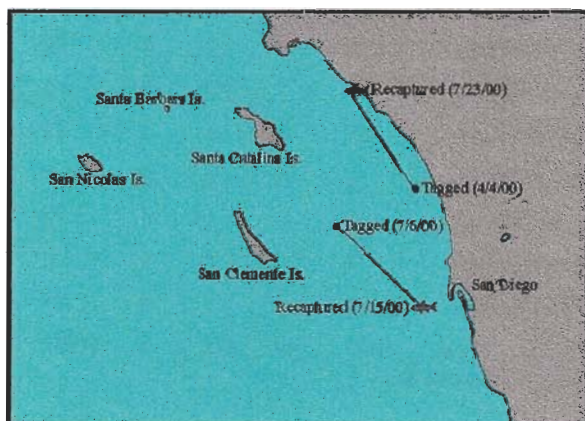


Figure 2

2000 SHARK TAGGERS

The following permit holders volunteered their time, effort, and expenses to tag sharks for the Department of Fish and Game this year. All of their efforts are greatly appreciated.

Clay Andrews	Keith Poe
Howard Arnold	Deana Poe
Steven Bledsoe	Kevin Price
Jason Blower	Steve Prime
David Brackman	Debbie Prime
Don Bragg	Vincent Randino
Dave Casper	Mark Rein
Jeff Chinn	Ron Rosegara
David Duner	David Ross
Manny Ezcurra	Don Rowland
Walter Heim	Jack Russell
Guy Irwin	Charles Schuler
Robert Lech	Christina Slager
Michael Lofy	Scott Smith
Scot Lucas	Sean Van Sommeran
Don Nelson	Mark Wagner
John O'Cain	Charles Williams
Jon Pettey	Kevin Wright

In addition to Department of Fish and Game biologists, the following agencies and institutions cooperated with the tagging program by donating personnel and time:

Monterey Bay Aquarium, San Francisco's Underwater World, Pelagic Shark Research Foundation, and the National Marine Fisheries Service.

COMMERCIAL TAG RETURNS

One of the four recovered tags this year was returned by foreign commercial fishermen. Commercial fishermen are very important to the success of the program because they are on the water year round, increasing their opportunity to encounter sharks while fishing. Their cooperation is very valuable, and we look forward to future tag returns from this sector of the fishery.

PROGRAM ACTIVITIES

The CDFG did not conduct a shark tagging cruise this year because of funding redirection. We did, however, present a summary of the data we have collected since the inception of the program at the American Fishery Society meeting held in Ventura at the end of March. We also attended the skippers' meeting for the Marina Del Rey Mako for Dollars Tournament in August. Questions were asked regarding the continuation of the program and the mako shark state record.

We issued tags to tournament participants and enrolled new taggers in the program.

NMFS THRESHER SHARK STUDIES

In June 1999, the National Marine Fisheries Service (NMFS) began a satellite-tagging project to help determine movement patterns and post release survival of sub-adult common thresher sharks tagged in southern California. The common thresher is thought to move from off the coast of Baja, California into southern California waters in early spring and summer. This movement follows the warming of coastal waters and increased quantities of small pelagic prey. Large adult threshers usually enter the Southern California Bight in April and May and continue north, arriving off Oregon and Washington in July. Pups, born offshore in the early spring, move into shallow inshore waters where they remain for two to three



Photo courtesy Dave Holts, NMFS

Common thresher shark being tagged with a temperature archiving satellite pop-up tag.

years. Sub-adults apparently move into southern California in June and continue moving north along the coast to at least San Francisco. As coastal waters cool in the fall and winter months, adults and sub-adults return to Baja.

Temperature archiving satellite pop-up tags were deployed on eight common thresher sharks released near Laguna Beach and Santa Monica. The tags were designed to release from the fish and pop-up to the surface after 60, 120, 210, and 300-day intervals. The tags were then designed to transmit archived temperature and location data to Argos satellites where the data would be retrieved by fishery biologists. Five of the eight pop-up tags released and reported their data as scheduled.

The first 60-day tag to pop-up and report data released from a 240 cm female thresher. She traveled west of Point Conception, a net traveling distance of 225 nm. The second 60-day tag released from a 246 cm male thresher. It reported at the appropriate time, but the shark was caught by a fisherman and taken to his home in Oceanside after only 29 days. The first 120-day tag released on a 260 cm male. It reported on October 18 near Oceanside, only 20 nm from its tagging location. The second 120-day tag was deployed on a 237 cm female thresher. She traveled south off Magdalena Bay, BCS, Mexico, a net distance of nearly 240 nm. The final tag to transmit data released from a 255 cm female thresher after 210 days. She moved 895 nm south to just west of Clarion Island off Mexico.

Recently, another thresher tagged with a satellite tag was recaptured. That pop-up tag was scheduled to report after 300 days and was one of the three pop-ups that did not report. The shark was at liberty for 538 days and was caught by a gill net vessel in the same area it was tagged. An observer on the vessel did not see any evidence of the satellite tag ever being attached which indicates that the wound was completely healed. Either the tag fell off, or it was pulled from the fish.

The first 60-and first 120-day tags confirm limited movement of sub-adult threshers within the Southern California Bight in summer and early fall. The last two tags to pop-up confirm the southward movement back into Mexican waters in the winter. The data also indicates thresher shark movements between Mexico and the U.S. EEZ in a more complex movement pattern than previously thought.

Six of the eight satellite tagged threshers survived from at least 29 to 538 days, resulting in a 75 percent survival rate. This rate is encouraging because threshers had once been considered too fragile to survive the catch, tag, and release process. If you would like more information about this study, contact NMFS biologists at (858) 546-7186.

HIGHLY MIGRATORY SPECIES

In 1999, the Pacific Fishery Management Council (Council) determined that a Fishery Management Plan for Highly Migratory Species Fisheries off the West Coast (HMS FMP) should be prepared. Highly migratory species in the Pacific Ocean include tunas, swordfish, marlin, and blue, mako, and thresher sharks. The HMS FMP will be prepared as a joint fisheries management plan (FMP) and Environmental Impact Statement. When completed, the FMP will have to meet the requirements of the Magnuson-Stevens Fishery Conservation and Management Act and other applicable laws (e.g., Marine Mammal Protection Act and Endangered Species Act). During the development of the FMP, interested parties including commercial and recreational fishers, related industries, non-governmental organizations, and governmental agencies at all levels will have significant opportunities for input.

NMFS has prepared extensive documentation on the information and analyses that must be contained in fishery management plans and associated documents. A set of "Operational Guidelines" has been prepared that provides information on the requirements of the Magnuson-Stevens Fishery Conservation and Management Act as well as the many other laws and administrative orders that apply to development of Federal regulations through the fishery management planning process. Briefly summarized, a FMP should present:

- current information about the fish stocks and the fisheries that target them
- identification of problems and issues to be analyzed
- identification of alternative means to resolve problems

- analysis of the biological, ecological, economic and social impacts or implications of alternative actions
- rationale for the selection of the proposed actions

It is intended that the information and analyses be clear and objective. An FMP is supposed to be based on the best scientific information available. It is important to identify both the nature and magnitude of impacts and the distribution of those impacts. It also is important that both short- and long-term perspectives be considered with an assessment of the ir retrievable commitments of resources that might be associated with different courses of action. Further, the planning process must be open, and the final rule (if any is called for) must demonstrate that public comments have been considered in the final decision.

The draft FMP is scheduled for review by the Council in March 2001. The public is encouraged to attend the March Council meeting as this will be a prime opportunity to provide comments before the Council directs the Highly Migratory Species Plan Development Team on how to proceed in finalizing the contents, scope, and framework management process of the FMP. The Council is scheduled to finalize a draft for public review at the April meeting. Final adoption of a completed FMP is scheduled for the September meeting, subsequent to a series of summer public meetings. Shark taggers interested in following the preparation of the FMP should contact the PFMC through their web page www.pcouncil.org.

CALIFORNIA SHARK ANGLING RECORDS

Species	Weight	Place	Date	Angler
Blue Shark	25 lb 14 oz	Cherry Bank	11/27/99	Richard Q. Bean
Leopard Shark	40 lb 10 oz	Oceanside	5/13/94	Fred Oakley
Sevengill Shark	276 lb 0 oz	Humboldt Bay	10/17/96	Cliff Brewer
Mako Shark	986 lb 0 oz	Santa Barbara Is.	9/5/99	Tom Brooks Jr.
Thresher Shark	527 lb 0 oz	San Diego	10/4/80	Kenneth Schilling

Requests for record submission forms should be mailed to the Department of Fish and Game, 4665 Lampson Avenue, Suite C, Los Alamitos, CA 90720. For marine fish records, contact Steve Wertz at (562) 342-7184. For inland fish records, contact Steve Taylor at (916) 653-8262.

WE'VE MOVED

On October 1, 2000, the Department of Fish and Game moved from Long Beach to a new office in Los Alamitos. Our public information telephone number is (562) 342-7100. Directions to the Lampson office are as follows:

- Traveling south on 405 Freeway, exit Seal Beach/Los Alamitos Boulevard. Proceed north towards Los Alamitos. At the second traffic signal, turn right on Lampson Avenue and proceed 1.5 miles to "WestEd" building.
- Traveling west on 22 Freeway, exit Valley View/Bolsa Chica Street. Turn right on to Valley View. At second traffic signal (0.5 miles), turn left on Lampson Avenue and proceed to "WestEd" building (approximately one mile).
- Traveling north on 405 Freeway, exit Valley View Street/22 east. Turn left at off ramp signal. Turn right on Valley View, left on Lampson Avenue (third signal) and proceed to "WestEd" building (approximately one mile).

Public parking is free. The Fish and Game entrance and license counter are located at the rear of the building.

You may send your completed shark tagging postcards to our old address; however, we would prefer that you mail them to our new office.

