



To Report a Recapture:

Call Toll Free 877-826-2612
Email: sharkrecap@noaa.gov

Use our online reporting form:
www.nefsc.noaa.gov/sharktagreport

Cooperative Shark Tagging Program
NOAA's National Marine Fisheries Service
28 Tarzwell Drive
Narragansett, RI 02882-1199
www.nefsc.noaa.gov/sharks



The National Marine Fisheries Service (NMFS) Cooperative Shark Tagging Program (CSTP) is a collaborative effort between recreational anglers, the commercial fishing industry, and NMFS to study the life history of Atlantic Sharks. The CSTP was initiated in 1962 with an initial group of less than 100 taggers. The program has expanded

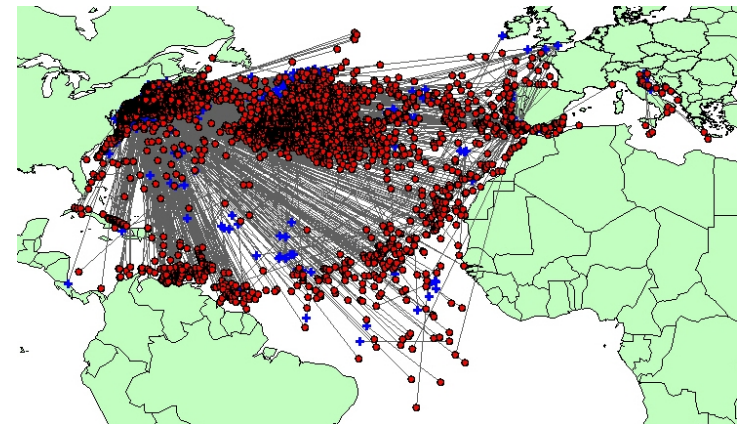
in subsequent years to include thousands of volunteers distributed along the Atlantic and Gulf coast of North America and Europe. The tagging methods used in the CSTP have been essentially unchanged during the past forty-nine years. The two principal tags that are in use are fin tags (Rototag) and dart tags (M tag). The Rototag is a two piece, plastic cattle ear tag which is inserted through the first dorsal fin. These tags were primarily used by NMFS biologists on small sharks during the first few years of the CSTP. As the program expanded, the dart tag was developed to be easily and safely applied to sharks in the water. The M tag is composed of a stainless steel dart head, monofilament line, and a plastic capsule containing a waterproof legend with return instructions printed in English, Spanish, French, Japanese and Norwegian. These dart tags, in use since 1965, are implanted in the back musculature near the base of the first dorsal fin.

Numbered tags are sent to volunteer participants on self-addressed return post cards for recording tagging information (date, location, gear, size and sex of shark), along with a tagging needle, tagging instructions, current management information, and shark ID placards. CSTP tagging consists primarily of single release events in which recoveries are made opportunistically by recreational and commercial fishermen. When a previously tagged shark is recaptured, information similar to that obtained at tagging is requested from the recapturer. Initially, a five dollar reward was sent as an incentive for returning tags; since 1988, a hat with an embroidered logo has been used.



Anglers using rod and reel accomplish the majority of the tagging for all species combined. Biologists, NMFS fishery observers, and commercial fishermen using primarily longlines, handlines, and nets (gill, trawl) account for the remainder. Commercial fishermen using longlines and net gear, and rod and reel anglers are responsible for the majority of the recaptures.

Between 1962-2010, over 221,000 sharks of 52 species have been tagged and more than 13,000 sharks of 33 species have been recaptured. The rate of recapture ranges from 1% for the blacknose shark to 13% for the shortfin mako. Distances traveled for the 33 species ranged from no movement to 3,997 nautical miles (nm) (blue shark). The longest time at liberty for any shark in the CSTP is 27.8 years (sandbar shark).



Tag (blue) and recapture (red) locations of blue sharks from the NMFS tagging program

Data from tagging programs, such as the NMFS CSTP, provide valuable information on migration and the extent of fish movements. The need for international cooperation in such work is underscored by the fact that many shark species have wide ranging distributions, frequently traverse national boundaries, and are exploited by multinational fisheries. The CSTP is also an important means to increase our biological understanding of sharks and to obtain information for rational resource management. The tagging of sharks (and other aquatic animals) provides information on stock identity, movements and migration (including rates and routes), abundance, age and growth (including verification and validation of age-determination methods), mortality, and behavior.

INSTRUCTIONS FOR TAGGING SHARKS

Shark fishing is so diversified an activity with respect to the species, sizes, fishing areas and methods, that no set of tagging instructions can be rigidly applied to all sharks under all conditions. We recognize that the experienced fisherman is often in the best position to judge the safest and most effective means for tagging sharks. Nevertheless, some fundamental procedures are essential to the survival of tagged sharks and for obtaining accurate information.

- 1. Plan Tagging Activities In Advance** – Tagging a shark is often a team effort that requires practice. Know who is going to do what in the process of catching, tagging and releasing the shark, and who will concentrate on obtaining biological information.
- 2. Safety Is The Vital Element In Planning** – The basic points to keep in mind are: 1) leave the shark in the water whenever possible, 2) try to avoid handling any part of the shark, and 3) use a dehooker to retrieve the hook or cut the leader if needed (see page 5 for shark survival tips). Even under the best conditions, every new activity at sea adds some hazard. The most dangerous one in shark fishing can be an uninformed guest who is trying to help.

IMPORTANT: Small sharks can also inflict serious injuries. Never attempt to handle even a small shark by yourself.

- 3. Look For Tags Already In Place** – Measure or estimate the fork length of the fish, record the tag number and all the recapture details including species, sex, date, latitude and longitude, method of capture, etc. Tags have been lost in the mail so keep a copy of the recapture information. If keeping the shark, remove a piece of the backbone over the gill area and freeze it for our age studies (see page 12 for diagram).

- 4. Tag Only Sharks That You Can Identify** – Some species are difficult to tell apart, but it is important that your records are as accurate as you can make them. We will do whatever we can to assist you. If you are not sure if the shark was, for example, a blacktip or spinner, then note this on the card and send us a photo/video if possible (see page 15 for field guides).
- 5. Take Time To Insert Tags Properly** – The major reason for poor placement of tags is over-anxiousness. Once a shark is restrained on a short leader, it tends to twist and thrash making tagging difficult. Wait until the shark settles down before trying to tag it.
- 6. Avoid “Snap Judgments” In Estimating Sizes** – The demand for physical action in the final moments when a shark is being tagged can distract one’s attention from pertinent details. Several people may assist in a release only to learn later that no one truly focused on the size or sex of the shark. Discuss size estimates and determine its sex before the shark is released.
- 7. Record Tagging Information Promptly And Completely** – Please fill in the tag card immediately after tagging the fish and mail cards in promptly. Keep a copy for your records in case the cards are lost in the mail.
- 8. Do Not Transfer Your Tags** – Tags are assigned to individuals who we can contact should we need follow-up information. We will gladly send tags to fishermen who request them, but the indiscriminate transfer of tags can only lead to confusion. Please report the loss or damage of any of your tags.



HOW TO MAXIMIZE SHARK SURVIVABILITY

- Use non-offset **Circle Hooks**, or barbless circle hooks rather than J hooks. Circle hooks are more likely to lodge in the corner of the jaw, making removal of the hook easier. Circle hooks reduce the chances of gut/foul hooking the fish and increase chances of survival for the fish. Also, use hooks that are more corrosive in nature rather than stainless, so that if the hook is left in, it will rust away faster.
- **Minimize physical handling.** Treat the fish as gently as possible; do not sit on them or hold their mouths open for pictures. Avoid dragging the fish on dry sand or on a boat deck; if they must be moved, try using a tarp. Do not grip the shark over the gills as they are easily damaged. Remember: sharks do not have bones to protect their internal organs the way we do; the larger the fish, the more prone it is to internal injury. Placing a towel soaked in seawater over the eyes may help pacify the shark. **Never gaff a shark you plan on releasing!**
- **Be attentive** and set the hook immediately in order to lip/jaw hook the fish (non-circle hooks); this will prevent the fish from swallowing the hook. We have had few recaptures from gut hooked sharks.
- If the hook is swallowed and is deep or if the fish is likely gut hooked, **cut the line** as close to the mouth as possible and release the fish.
- **Reduce fight times** by having the proper gear, such as heavy tackle and a fighting harness. Long fight times put stress on the fish.
- If the fish is fatigued or near death, try reviving it by **supporting it gently in the water** allowing it to breathe. Some people will carefully move the fish forward through the water to push water across the gills.
 - Try to return the fish to the water as soon as possible, keeping the time out of water to a minimum – less time is better.
 - If tagging, remember to place the tag in the muscle at the base of the first dorsal fin; take care to avoid injuring the spine.
 - Avoid keeping large or pregnant females. Do not take prohibited species. Keep only the fish which you will consume within the legal bag limits.
 - Plan your release in advance, and be prepared by having the proper release tools handy, such as a dehooker. If you are fishing with others, avoid injury by making sure everyone knows what to do and what not to do.

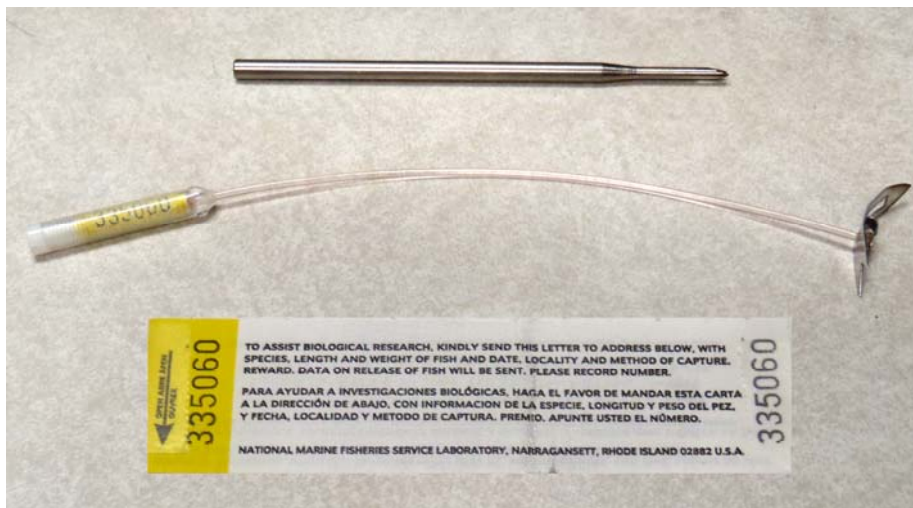


SHARKS TO BE TAGGED:

All identifiable shark species except smooth dogfish (*Mustelus canis*) and spiny dogfish (*Squalus acanthias*) can be tagged. Tagging area is the North Atlantic, Gulf of Mexico, and the Caribbean & Mediterranean Seas.

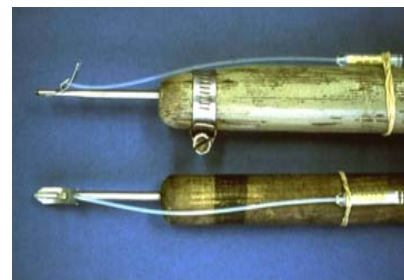
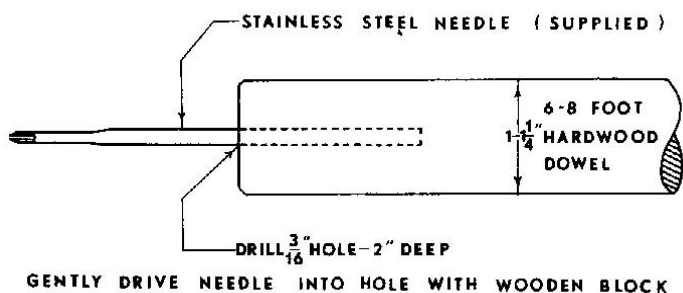
M TAG:

Please do not open the capsule. Capsules contain the following message in English, Spanish, French, Norwegian, and Japanese:



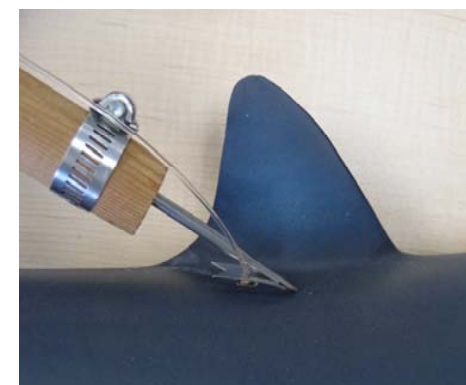
TAGGING EQUIPMENT & METHODS:

Commercial tag poles are available for purchase, or you may construct your own. Tagging needles should be firmly mounted in 1" to 1 1/4" diameter hardwood doweling 6' to 8' long, and should protrude from the pole 2 1/2".

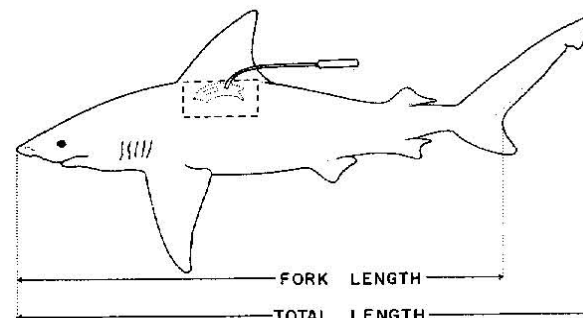


The dart head fits loosely into the slotted point in the needle, and the entire tag is held in place by rubber bands 2" to 3" up on the pole. The dart head should be curved so that the two rear points will face downwards into the muscle when the tag is inserted.

Tags should be driven into the back near the first dorsal fin. This area lies to the side of the backbone and above the body cavity. The ideal location on large sharks is in the muscle at the very base of the first dorsal fin. It is most important that the capsule assumes a TRAILING POSITION on the shark.



Insert the dart at an angle toward the head end of the fish. The skin of a shark is well known for its toughness, but by holding the pole 2' to 3' above the shark and making a strong, quick thrust, the dart



should penetrate even large fish. When the tag is correctly inserted, the dart head will come to rest approximately 1" to 1 1/2" beneath the shark's skin.

If you fish from shore or catch many small sharks, the tagging needle can be mounted in a short handled dowel (8"). In tagging small sharks, care must be taken to avoid injury to the backbone. To control the depth of penetration of the dart head, an incision can be made with the point of a knife and the dart head then carefully forced into the muscle. We do not recommend tagging sharks less than 3' in length with dart tags; other types of tags may be available for tagging small sharks (Rototags).

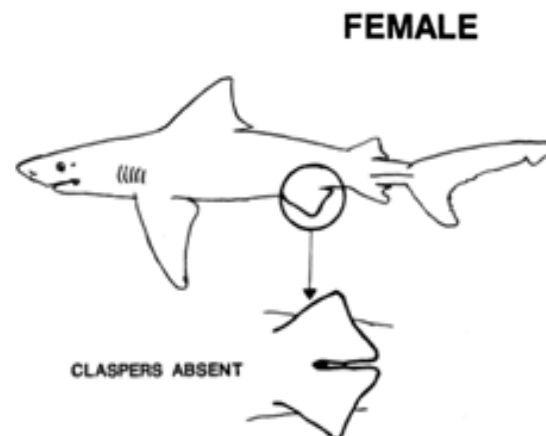
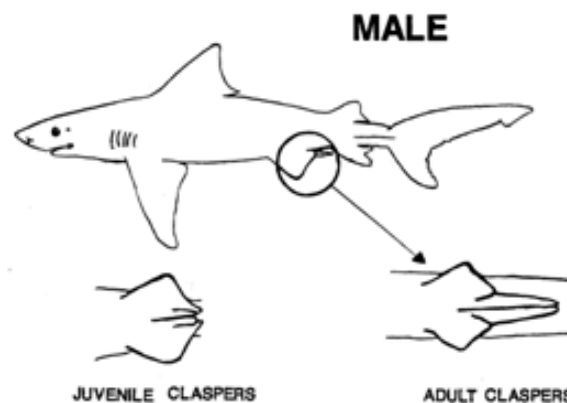
EXAMPLE OF PROPERLY FILLED OUT TAG CARDS

When you need more tags, request them in the remarks section of your tag card. Be sure to note any address change.

PLEASE FILL IN DETAILS AND MAIL TODAY		TAG TYPE <u>M</u> (3)
SPECIES <u>Sandbar (Brown)</u>		303681
LOCATION <u>39.09249 75.30442</u>		DATE <u>July 27, 2010</u>
TOT. LENGTH <u>3'7"</u>	OFF SHORE <input type="checkbox"/> SHORE <input type="checkbox"/>	
FORK LENGTH <u>3'</u>	<input checked="" type="checkbox"/> EST. <input type="checkbox"/> -5 MI. <input checked="" type="checkbox"/> BEACH <input type="checkbox"/>	
WEIGHT <u>25 lbs.</u>	<input checked="" type="checkbox"/> MEAS. <input type="checkbox"/> +5 MI. <input type="checkbox"/> OTHER <input type="checkbox"/>	
MALE <input checked="" type="checkbox"/> FEMALE <input type="checkbox"/> SEX UNKNOWN <input type="checkbox"/>		
TACKLE <u>Rod & Reel</u>	FISH CONDITION <u>Excellent</u>	
ANGLER <u>Ed Brown</u>	ADD. _____	
CAPT. <u>Gary Victor</u>	ADD. <u>Bay St., Cape May, NJ</u>	
CLUB _____	02000	
REMARKS		
<u>Please send tags</u>		

PLEASE FILL IN DETAILS AND MAIL TODAY		TAG TYPE <u>M</u> (3)
SPECIES <u>BULL SHARK</u>		Nº 330504
LOCATION <u>25°47'13"N 081°24'05"W</u>		DATE <u>5/21/10</u>
TOT. LENGTH _____	OFF SHORE <input type="checkbox"/> SHORE <input type="checkbox"/>	
FORK LENGTH <u>54"</u>	<input type="checkbox"/> EST. <input type="checkbox"/> -5 MI. <input type="checkbox"/> BEACH <input checked="" type="checkbox"/>	
WEIGHT <u>90-100 lbs</u>	<input checked="" type="checkbox"/> MEAS. <input type="checkbox"/> +5 MI. <input type="checkbox"/> OTHER <input type="checkbox"/>	
MALE <input type="checkbox"/> FEMALE <input checked="" type="checkbox"/> SEX UNKNOWN <input type="checkbox"/>		
TACKLE <u>ROD & REEL</u>	FISH CONDITION <u>GOOD</u>	
ANGLER <u>JIM BOB</u>	ADD. <u>10 SURF ST.</u>	
CAPT. _____	ADD. <u>TAMPA, FL</u>	
CLUB _____	TAGGER () ()	
REMARKS		
<u>HOOK REMOVED</u> <u>SHARK HAD BITE MARKS ON BODY</u>		

HOW TO DETERMINE THE SEX OF A SHARK





What To Do If You Catch a Tagged Shark

Step 1: Data Collection

Record the following information at the time of capture:



Tag Number: _____ Date Caught: _____

Species: _____ Sex: _____

Location caught (Latitude and Longitude preferred): _____

Length: _____ Weight: _____

- Fork Estimated Whole Estimated
 Total Measured Dressed Measured

Capture Gear: _____

Returned by: _____

Name: _____

Address: _____

Phone: _____

Email: _____

Please check **one** of the following:

- Released alive with the same tag
 Released alive with a new tag - please record the new tag number _____
 Released alive without a tag
 Shark was not released alive

Condition of shark if released Excellent Good Fair Poor

If you are keeping the shark, please see "Request for Backbones of Recaptured Sharks"

Step 2: Reporting a Recaptured Shark

Please collect the information above, and do **one** of the following:

- Call toll free 877-826-2612 or 401-782-3320
- Email: sharkrecap@noaa.gov
- Use our online reporting form: www.nefsc.noaa.gov/sharktagreport
- Send this form to: Cooperative Shark Tagging Program
NOAA's National Marine Fisheries Service
28 Tarzwell Drive
Narragansett, RI 02882-1199 USA



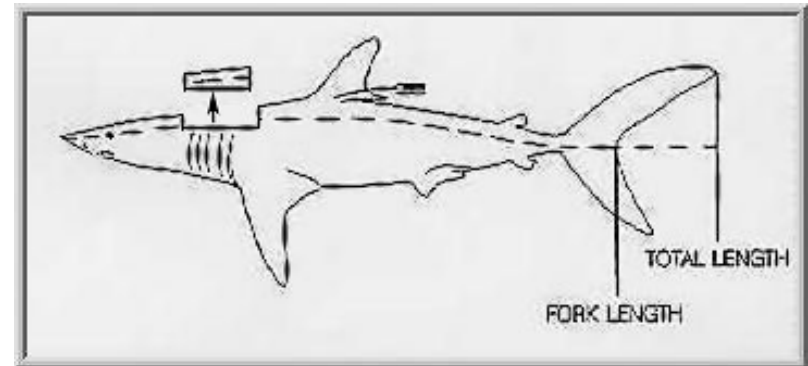
After receipt of this information, you will receive a report on the original release and a hat to thank you for your participation.

www.nefsc.noaa.gov/sharks

REQUEST FOR BACKBONES OF RECAPTURED SHARKS

The large number of sharks currently being recaptured offers a unique opportunity for fishermen to assist biologists in age and growth studies.

IF YOU ARE KEEPING A TAGGED SHARK



1. Measure fork length.
2. Record tag number and recapture details (date, location, latitude and longitude, species, measured fork length, sex, and method of capture).
3. Remove a 6 to 10 inch piece of backbone from over the gills.
4. Freeze backbone.
5. Call 877-826-2612 (toll free) or 401-782-3320 weekdays for information on mailing.

REWARD



**Have You Caught
a Tagged Spiny Dogfish?**

\$20

457433

\$100

457434

\$100

457435

KEEP WHOLE FISH*

INFORMATION TO RECORD

Tag Number Date
Fork Length Location

TAKE PHOTO OF TAG NUMBER

***To claim reward, please store fish on ice or freeze if necessary.
Contact us at the number below for shipping instructions.**

TO REPORT YOUR TAGGED SPINY DOGFISH:

Call Toll Free: 877-826-2612

Email: sharkrecap@noaa.gov

www.nefsc.noaa.gov/sharktagreport



Cooperative Research Spiny Dogfish Tagging Study

IV. SHARK QUICK REFERENCE SHEET



(Taken from HMS Recreational Fishing Compliance Guide)

AUTHORIZED SPECIES (species that may be retained)

Large Coastal Sharks (LCS): blacktip, bull, great hammerhead, lemon, nurse, scalloped hammerhead, smooth hammerhead, spinner, and tiger sharks (non-ridgeback LCS plus tiger).

Small Coastal Sharks (SCS): Atlantic sharpnose, blacknose, bonnethead, and finetooth sharks.

Pelagic Sharks: blue, oceanic whitetip, porbeagle, shortfin mako, and thresher sharks.

PROHIBITED SPECIES (species that must be released)

Atlantic angel, basking, bigeye thresher, bignose, Caribbean sharpnose, Caribbean reef, dusky, Galapagos, longfin mako, narrowtooth, night, sandbar, sandtiger, bigeye sandtiger, sevengill, silky, sixgill, bigeye sixgill, smalltail, whale, and white sharks*.

* A person may fish for white sharks with rod and reel, provided that the person releases such fish to the sea immediately with minimal injury and does not remove the fish from the water.

PERMITS AND GEARS

Authorized Permits in Federal Waters	Gear	Species
1. HMS Angling, OR 2. HMS Charter/Headboat, OR 3. Atlantic Tunas General category ONLY if participating in an Atlantic HMS registered tournament.	Handline, and Rod and Reel**	LCS, SCS, and Pelagic sharks

** Rod and Reel includes downriggers

SIZE/BAG LIMITS AND SEASONS

Permits	Size Limit***	Bag Limit	Season
All permits listed above	>54" FL	1 shark per vessel per trip any authorized species	Jan. 1- Dec. 31
	None	1 Atlantic sharpnose and 1 bonnethead per person per trip	

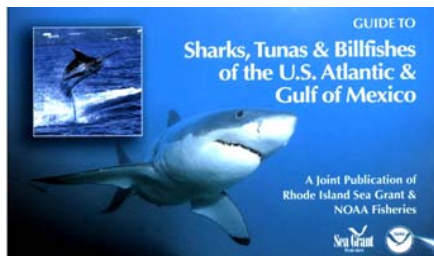
*** Fork Length measurement

REPORTING REQUIREMENTS

If contacted, fishermen must participate in the Large Pelagics Survey (LPS) or Marine Recreational Information Program (MRIP, formerly MRFSS). Survey contact may occur at the dock or by phone.

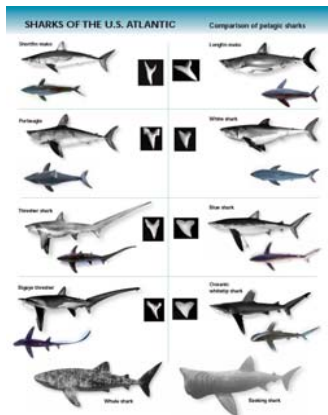
KNOW WHAT YOU ARE TAGGING!

Accurate species identification is critical. Tag only species you can identify. To help with this, we have developed some useful guides. One is the *Guide to Sharks, Tunas & Billfishes of the U.S. Atlantic & Gulf of Mexico*,



which contains species descriptions for 44 sharks, tunas, and billfishes found in the U.S. Atlantic, Gulf of Mexico, and Caribbean Sea. This is an easy to use field reference printed on waterproof paper. It includes physical descriptions, habitat and distribution information, and full-color diagnostic and field photographs of each species.

We also have identification sheets for the common pelagic and coastal shark species. These handy one page laminated sheets include side-by-side comparisons of many similar species for rapid and accurate shark identification. Both are collaborative projects with Rhode Island Sea Grant and NOAA Fisheries and can be purchased through the RI Sea Grant Communications Office, URI Bay Campus, Narragansett, RI 02882-1197, 401-874-6842. The one page ID sheets can be downloaded free of charge at



www.seagrants.gso.uri.edu/bookstore

HMS ANGLING PERMITS AND TOURNAMENT REGISTRATION

Please remember that it is a **requirement** for owners of private vessels used to fish recreationally for Atlantic Highly Migratory Species (Atlantic tunas, sharks, swordfish, and billfishes) to obtain an HMS Angling Permit from NMFS. The Angling Permit can be purchased online at www.hmspermits.gov or by calling 888-872-8862. In addition, any tournament operator responsible for maintaining records of participants and results used for awarding tournament points or prizes for Atlantic HMS must register the

tournament with NMFS at least four weeks prior to the start of the tournament. Call HMS St. Petersburg at 727-824-5399 or visit the permit website to receive a registration form. HMS Fishery Compliance Guides are available for download at: http://www.nmfs.noaa.gov/sfa/hms/Compliance_Guide/index.htm

NEED MORE INFORMATION?

FOR TUNA AND BILLFISH TAGS:

Cooperative Tagging Center
Southeast Fisheries Science Center
75 Virginia Beach Drive
Miami, FL 33149

www.sefsc.noaa.gov/ctsprogram

Toll Free Number: 800-437-3936

OTHER SPECIES

(*Striped Bass, Bluefish, Fluke, Winter Flounder*):

American Littoral Society
Sandy Hook
Highlands, NJ 07732

www.littoralsociety.org/fish_tagging.aspx

732-291-0055

FOR REGULATIONS:

Tunas:

HMS Gloucester 978-281-9260

Sharks, Swordfish:

HMS Headquarters 301-713-2347

Recreational Swordfish & Billfishes:

HMS St. Petersburg 727-824-5399

FOR COPIES OF DOCUMENTS:

Highly Migratory Species Management Division
301-713-2347

Or Visit:

www.nmfs.noaa.gov/sfa/hms/hmsdocument_files/sharks.htm

www.nmfs.noaa.gov/sfa/hms

FORK LENGTH	Blue	Mako	Porbeagle	Bigeye Thresher	Common Thresher	White
16						3275
15.5						2969
15						2683
14.5						2417
14						2169
13.5						1939
13						1726
12.5						1529
12						1348
11.5						1182
11		987				1031
10.5		853				893
10		732				768
9.5		623				656
9	303	526			622	555
8.5	253	439			530	465
8	209	363			444	386
7.5	171	297			373	316
7	138	239	262	300	307	256
6.5	109	189	210	239	249	203
6	85	147	166	186	198	159
5.5	65	112	128	143	155	121
5	48	83	97	106	119	91
4.5	35	60	71	77		65
4	24	41	50	53		45
3.5	16	27	34	35		
3	10	17				
2.5	5	9				
2	3					
1.5						
FORK LENGTH FEET	Blue	Mako	Porbeagle	Bigeye Thresher	Common Thresher	White

WEIGHT IN POUNDS

FORK LENGTH	Bignose	Dusky	Night	Sandbar	Scalloped Hammer	Silky	Tiger
16							
15.5							
15							
14.5							
14							
13.5							
13							
12.5							
12							
11.5							
11							954
10.5							820
10							699
9.5							592
9		444					496
8.5		379					412
8		320					338
7.5		267			294		274
7		221			238		219
6.5	200	179	185	199	190	175	172
6	151	144	143	157	149	138	132
5.5	112	113	108	120	114	107	100
5	81	86	79	90	85	81	73
4.5	56	64	56	66	61	60	52
4	37	46	38	46	43	42	35
3.5	23	32	25	31	28	29	23
3		21	15	19	18	18	
2.5			8	11		11	
2			4	6			
1.5				2			
FORK LENGTH FEET	Bignose	Dusky	Night	Sandbar	Scalloped Hammer	Silky	Tiger

WEIGHT IN POUNDS

