

Website and Registry at www.fishtag.info. This site was developed as a resource for both anglers and scientists interested in tracking down sources of recovered tags as well as a directory of agencies and organizations involved with fish tagging.

Fish Identification Publications

Peterson Field Guide to Atlantic Coast Fishes, Copyright 1986 by C. Richard Robins, G. Carleton Ray and John Douglass.

Guide to Sharks, Tunas & Billfishes of the U.S. Atlantic & Gulf of Mexico, Copyright 2003 by Rhode Island Sea Grant, University of Rhode Island, Narragansett Bay Campus, Narragansett, RI 02882-1197.

Sharks of South Carolina, Copyright 2004 by South Carolina Department of Natural Resources, Marine Resources Division, Charleston, SC.

Acknowledgements

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Special thanks to the thousands of recreational anglers who have supported this program and devoted their own time to tag fish.

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South Carolina Department
of Natural Resources

Marine Game Fish Tagging Program

Tag and Release Guide



No. Target species are those for which data are still needed. Data on species not listed as targets are not needed because there are plenty of data already available on these fish. Tagging non-target fish is essentially a waste of tags.

If I catch a tagged fish should I release it with the tag intact?

Yes. After recording the tag number, location, and type of fish that was caught, release the fish with the tag intact. Then contact the tagging program to report your recapture. Information on the fish will be sent to you along with a tagging program hat, t-shirt or other gift.

Is there a law regarding fish tagging in South Carolina?

Yes. SC Code of Laws Section 50-5-40 states: "No person may tag or mark and release saltwater fish or promote such activity unless authorized by the South Carolina Department of Natural Resources."

Does the tagging program accept donations?

Yes. Limited funding for this program is provided through the purchase of saltwater fishing licenses and donations are accepted to help mitigate the costs of tagging kits that are provided to participating anglers free of charge. Many sportfishing clubs and individuals help support this program with their donations and help ensure the continuation of this conservation effort.

Sources of Interest

The South Carolina Marine Game Fish Tagging Program website is located at: www.dnr.state.sc.us/marine/pub/seascience/tagfish.html.

A comprehensive guide for fish tagging programs nationwide can be found on the Cooperative Fish Tagging

5. Record the date, location, and type of fish.
6. Report the recapture as soon as possible to the Marine Resources Division of the South Carolina Department of Natural Resources in Charleston or mail the information with your return address to:

SCDNR
 Marine Game Fish Tagging Program
 PO Box 12559
 Charleston, SC 29422-2559

Conservation

Currently, dozens of the most popular saltwater fishing species have legally mandated size and/or catch limits, requiring anglers to release undersized, oversized, and over-the-limit fish. If these fish are not released properly their chance of survival is minimal. Conservation-minded anglers must learn the proper techniques for releasing fish in good condition and must plan ahead to have the equipment necessary to apply these techniques.

When tagging fish, always use good judgement. Be mindful of the fact that the survival of the fish you are releasing is often more important than releasing it with a tag. By increasing the survival rate of released fish, saltwater anglers help to ensure the future of their sport.

Frequently Asked Questions

What are the criteria for listing a fish as a target species?

The primary criteria are the importance of a particular species both commercially and recreationally to the State and South Atlantic region. The list of target species is further narrowed down based on the amount of historical data on that species.

Should I tag any species other than those listed on the target species list?

Table of Contents

About the Program	1
Recapture rates	2
Notable recaptures	3
Getting Involved	5
Tagging Equipment	6
Tag types	6
Constructing a tagging pole	7
Tackle	8
Hooks and artificials	8
Hook material.....	8
Barbless hooks.....	9
Circle hooks.....	9
Handling	10
Loss of slime	10
Time out of the water	10
Use of towels to protect fish	10
Other useful tools	11
Tagging	13
How to apply “E” and “K” series tags.....	13
Steps to take when tagging	13
How to apply “A” tags.....	15
Taking accurate length measurements.....	16
Aerating and Venting	17
Important points to consider when venting	17
Venting tools.....	18
The Do Nots of the Public Tagging Program	19
Reporting data	20
Filling out tag card	20
Angler identification number	21
Reporting tagged fish	21
Conservation	22
Frequently Asked Questions	22
Sources of Interest	23
Fish Identification Publications	24

8. Mail card promptly.
9. Notify program staff in case of address change.

Angler Identification Number

Anglers participating in the public tagging program are assigned an angler identification number and are asked to include this number on all tag cards. This facili-

FISH TAGGING REPORT COMPLETE IN FULL AND MAIL TODAY — PLEASE PRINT —				TAG NUMBER E 153625	
TAGGING DATE MO DA YR 7/22/03		LOCALITY MILL CREEK, CHARLESTON WBR.		COUNTY	STATE
SPECIES SPOTTAIL		CODE	LENGTH Est <input type="checkbox"/> Meas <input checked="" type="checkbox"/> 23.5	WEIGHT Est <input checked="" type="checkbox"/> Meas <input type="checkbox"/> 4	
ANGLER John Doe (DJ217)		CODE	BOAT NAME		CODE
ADDRESS			CAPTAIN		CODE
CITY STATE ZIP			ADDRESS		
SEND MORE TAGS TO <input type="checkbox"/> CAPTAIN <input type="checkbox"/> ANGLER		CHECK IF NEW ADDRESS <input type="checkbox"/> CAPTAIN <input type="checkbox"/> ANGLER		CITY STATE ZIP	
FISH CONDITION <input checked="" type="checkbox"/> GOOD <input type="checkbox"/> FAIR <input type="checkbox"/> POOR		HOOK REMOVED <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		FISH TAGGED <input checked="" type="checkbox"/> IN WATER <input type="checkbox"/> IN BOAT <input type="checkbox"/> ON LAND	
REMARKS Also recaptured a tagged ^{red} fish on same day (7/22) Tag # K034922, 29" measured, released w/ tag intact. Caught at Ft. Johnson.					

A properly filled out tag card is easy to read for accurate data entry.

tates data entry and makes it unnecessary for anglers to write their name and address on every tag card. The identification number consists of the first letter of the anglers last name, followed by the first letter of the first name.

Reporting tagged fish

If you catch a tagged fish:

1. Follow all guidelines for proper handling of the fish.
2. Record the tag number.
3. Measure and record the total length of the fish.
4. If possible, re-release the fish with the tag in place.

DO NOT use large (“K” or “A” series) tags on small fish (less than 27”)

Why? Tags are probably somewhat of an irritant to fish and a large tag stuck in a small fish may cause undue stress and may result in mortality.

DO NOT tag any fish under 12”

Why? At 12” the species eligible in this program are still juveniles and even our smallest tag (“E” series) is too large. Historically, we have had very low tag return rates on fish less than 12”.

DO NOT tag fish trapped in impoundments

Why? We get no movement information when fish are recaptured. These fish are not representative of a general population. Growth rates may be different because of the controlled environment.

The Bottom Line: Tag kits cost the program \$15. Please conserve tags by following program guidelines and you will increase the efficiency and effectiveness of this program and ensure we are getting the most out of our limited tagging budget.

Reporting Data

Filling out tag card

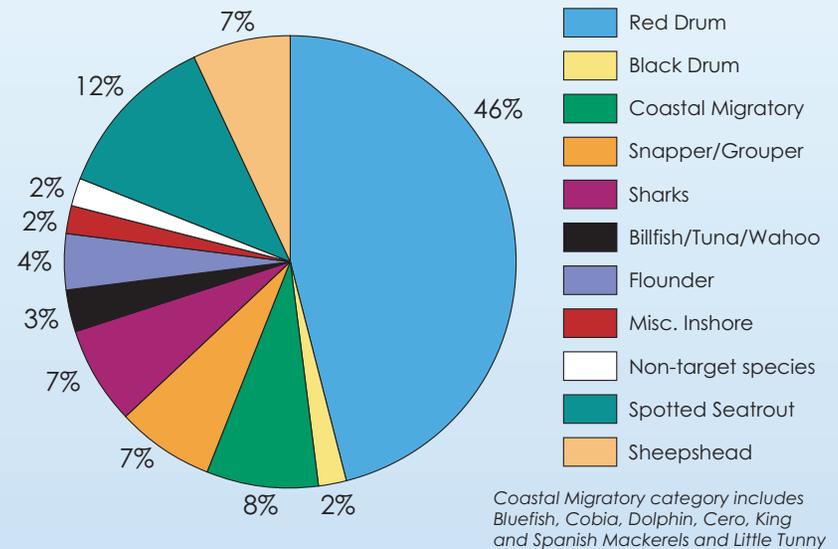
1. Write legibly.
2. Use angler identification number.
3. Be specific about location.
4. Indicate if measurements are actual or estimated.
5. Make additional tag requests in remarks section.
6. Make copies of completed tag cards or keep a personal record of your tagging activity to serve as a backup should cards become lost in the mail.
7. Periodically request a summary of your personal tagging activity from program staff.

About the Program

Since 1974, the Marine Resources Division's Office of Fisheries Management has sponsored a cooperative Marine Game Fish Tagging Program. In addition to being a useful tool for promoting the conservation of marine game fish and increasing public resource awareness, the tagging program has provided biologists and fisheries managers with valuable information on population dynamics, movements, and biology of marine game fish.

Partnering with the angling community has proven to be an efficient and cost effective means for collecting data. Since its inception, close to 13,000 anglers have participated in the program. Over 125,000 fish have been tagged, and of these, close to 12,000 have been recaptured. Today, the program remains the largest state-sponsored public tagging program in the Southeastern United States, and is recognized as one of the top tagging programs worldwide.

Fish Tagged from 1974-2003



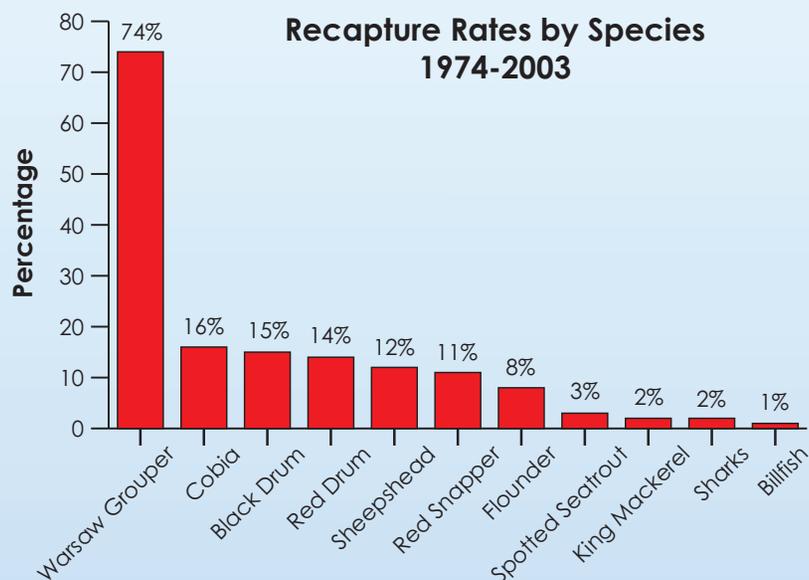
The majority of fish tagged and released through the public tagging program are inshore and/or nearshore species.

The program is funded mainly through revenue from the sale of the South Carolina Saltwater Recreational Fisheries License. The enthusiasm of thousands of cooperating anglers who promote personal stewardship and responsible angling ethics has greatly contributed to the programs' success.

Recapture rates

In addition to providing an enormous tag and recapture database for generating summary reports within the Marine Resources Division, the tagging data helps other agencies, and in several instances, information from the program has directly affected management decisions.

One of the most significant events of the program occurred in 1992, when a blue marlin tagged off Georgetown, South Carolina was subsequently recaptured early the following year 750 miles east of Brazil. This was the first documented transequatorial crossing of an Atlantic blue



Recapture rates for some select species, for example 14% of tagged red drum have been recaptured.



Different types of venting tools. (From top, hollow steel tag applicator, hypodermic syringe, ball pump needle).

The DO NOT's of the Public Tagging Program

DO NOT tag red drum (aka. spottail bass, channel bass) under 18"

Why? Our (SCDNR) in-house research program already tags red drum in the 14-18 inch size range that are captured in trammel nets. We simply need more information on larger fish than smaller ones.

DO NOT tag spotted seatrout (aka. winter trout, speckled trout)

Why? Historically these fish have poor tag retention and high release mortality. Trout are not as resilient as other species and are better off just being released.

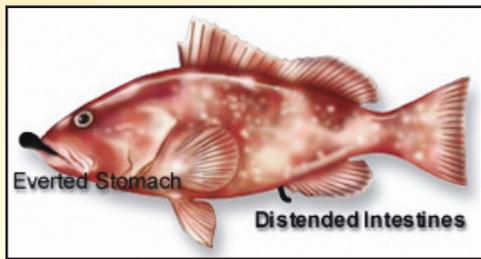
DO NOT tag any species of flounder

Why? Currently we have enough data on flounder and at this time they are not considered a priority species.

DO NOT use small ("E" series tags) on large fish (over 27")

Why? Poor tag retention. It is difficult to get a small tag to lock in between dorsal spines that are spaced farther apart in large fish.

additional stress. In these situations the primary goal is to release the fish alive and not necessarily with a tag.



A hypodermic syringe is used to vent a black sea bass.



Venting tools

The best tool for venting fish is a hypodermic syringe with the plunger removed. Other effective venting tools include a hollow steel tube, like the one used for applying the "E" tag, or a ball pump needle with the end sharpened. Remember, the smaller the diameter of the tool, the smaller the puncture wound. Avoid using a knife or ice pick.

Tip: Use chlorine bleach after every use to keep the tool clean and keep a cap or cork on the end to prevent personal injury.

marlin and directly contributed to ICCAT (International Commission for the Conservation of Atlantic Tunas) dropping their five-degree (latitude) dividing line for Atlantic stock blue marlin.

In 1990, the South Atlantic Fishery Management Council utilized South Carolina public tagging data to examine greater amberjack stocks. The associated tag and recapture information, which identified spawning aggregations off southern Florida, was eventually used by the National Marine Fisheries Service in establishing a spawning season closure for amberjack in the South Atlantic.

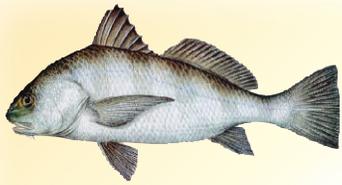
Notable recaptures



Anglers are encouraged, if they catch a tagged fish, to release the fish with the tag intact. The most useful movement and growth information is obtained when tagged fish are recaptured multiple times, as seen in the case of a red drum that was captured four times over the course of eight years. Originally tagged in June 1994 in Cape Romain Harbor and measured at 23-inches, the first recapture occurred in the same area in January 1995. The fish was captured again a month later, once again in Cape Romain Harbor, and was slightly over 28-inches. On November 9, 2002 the same fish was caught a fourth time, approximately 25-miles to the south, in Copah-see Sound. Measured at 32-inches, the fish was released with the tag intact.



Several billfish tagged and released off South Carolina have been recaptured off Cuba. A white marlin tagged and released in 1997 and a sailfish tagged in 2001 were recaptured off the coast of Cuba in 2000 and 2003 respectively.



A black drum tagged in April 2000 behind Dewees Island was recaptured in June 2001 on the Outer Banks of North Carolina. Another black drum, recaptured on July 12, 2003 at Guana River State Park in Ponte Vedra Beach, Florida was originally tagged at the entrance to Winyah Bay near Georgetown on November 3, 2002. Tag and recapture data from the public tagging program on black drum indicates considerably more coastal movement when compared to other inshore species.



In 1986, two significant cobia recaptures were reported off Galveston, Texas and Gulfport, Mississippi. The initial taggings, which occurred off South Carolina, provided proof that dismissed the previously accepted idea that there were non-integrating stocks of cobia in the South Atlantic and Gulf of Mexico. More recently, in June 2003, a forty pound tagged cobia was caught off Alabama. Information on the initial release revealed the fish was tagged off Sebastian Inlet, located on the Florida East Coast, in December 2000.



A tarpon tagged and released near Bulls Bay in July 2000 was at liberty for just over a year when it was recaptured in August 2001. The fish had returned to the same area where it was originally tagged, and was re-released with the tag intact, by the same initial tagger.



A red drum caught on August 15, 2003 in Raritan Bay, New Jersey was originally tagged on September 23, 1991 in Charleston Harbor. When tagged, the fish was 12 inches long and had grown to over 41 inches by the time it was recaptured 12 years later.

of the boat and mark off its measurements. Then, after releasing the fish, use a tape measure or ruler to measure between the marks and determine the length of the fish. If possible include a length and a weight, the length being the more important of the two, as it is a better indicator for determining size and growth.

Aerating

Gently aerate the fish by moving it forward and backward through the water until it is able to swim off.

Venting

Gases in the swim bladder of a fish caught from 60 feet or more and brought to the surface can quickly expand resulting in the distension of the swim bladder. Signs of this condition include everted stomach, distended intestines, bulging eyes, and bloating. To relieve this pressure, insert a hollow, sharpened steel cannula underneath a scale about an inch behind the base of the pectoral fin. Penetrate only far enough to vent the gas, while at the same time exerting gentle pressure on the fish's abdomen to aid deflation. Revive the fish in an upright position as previously described.



Reviving a small red drum.

Important points to consider when venting

1. Do not puncture the everted stomach or attempt to push it back down the fish's throat.
2. Tagging a fish that has just been vented may cause

6. A good estimate or measurement of the fish's length should be made before it is released.



Properly placed harpoon ("A" series) tag in a blue marlin.

Record all information on the tag report card before tagging another fish.

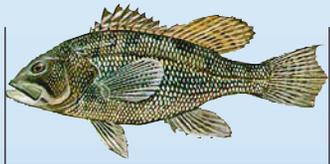
Please place card in the mail as soon as possible.

Taking accurate length measurements

Participating anglers are asked to always measure total length.

Measurements of the total length of the fish should be taken from the tip of the lower jaw to the tip of the tail (most anterior point to most posterior point) using a measuring board or some other stationary object.

Measuring Total Length

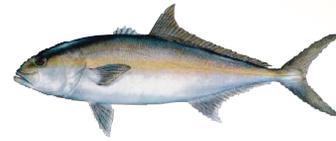


Black sea bass
Centropristis striata



Cobia
Rachycentron canadum

If a measuring board is not available, another method that can be used is to gently lay the fish on the deck



A 22-½ inch greater amberjack tagged off Georgia on August 10, 1998 was recaptured in the Gulf of Mexico (off Largo, Florida) on November 15, 2002. Over the course of four years the fish had grown almost 23 inches. This was the first recapture of a species in the snapper-grouper complex, tagged as part of the SC public tagging program, which was recaptured in the Gulf of Mexico. Documentation of this event further substantiated that Gulf and South Atlantic stocks do in fact occasionally integrate.



A smooth dogfish, initially tagged off South Carolina, was recaptured off Martha's Vineyard, Massachusetts. This has been the northernmost recovery of any species recaptured in this program.

Getting involved

In an effort to maximize the success of the tagging program and collect the most accurate data possible, anglers who wish to participate in the Marine Game Fish Tagging Program are now required to attend a minimum of one training workshop before being provided with tags and tagging equipment. Workshops are usually held at the beginning of the year at various locations throughout the state and provide an opportunity for participants to interact with program staff. Upon completion of the workshop, anglers will be certified DNR taggers, qualified to participate in the tagging program. Certified taggers are not required to attend another workshop, however, participants must re-register each year with the program to continue receiving tags. A mailing list of participants is updated throughout the year and letters are sent out in the fall to inform anglers of the dates and locations of the tagging workshops. To register with the program please

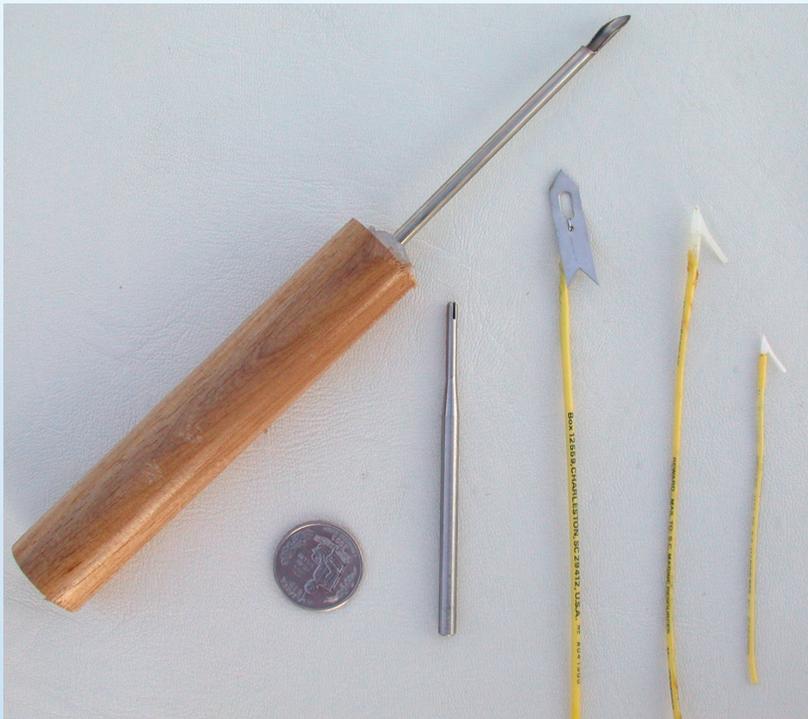
contact the Marine Resources Division of the South Carolina Department of Natural Resources in Charleston:

SCDNR
Marine Game Fish Tagging Program
PO Box 12559
Charleston, SC 29422-2559

Tagging Equipment

Tag types

The “E” and “K” series tags are nylon tipped dart tags bearing the tagging program address and tag number. The “E” tag is used on fish measuring less than 27 inches and the “K” tag is used on fish measuring 27 inches or greater.



From left to right, “K” tag applicator, slotted “A” tag applicator tip, “A” tag, “K” tag and “E” tag.

Tip: In order to prevent creating multiple puncture wounds in a live fish, practice tag insertion on a fish you plan to keep. Insert the tag, remove it, and repeat the process until you are familiar with how the tag “locks in” between the dorsal spines.

How to apply “A” tags

The “A” tag is recommended for billfish (blue marlin, sailfish, white marlin and swordfish) and large sharks. Like the “E” and “K” tags, the “A” tag consists of yellow tubing (streamer) bearing the tag number and the Marine Resources Division address. Unlike the other tag types, attached to the streamer is a pointed stainless steel anchor. A special slotted applicator, fastened to a long pole holds the dart tip in place during the tagging procedure. The program provides only the stainless steel applicator tip free of charge.

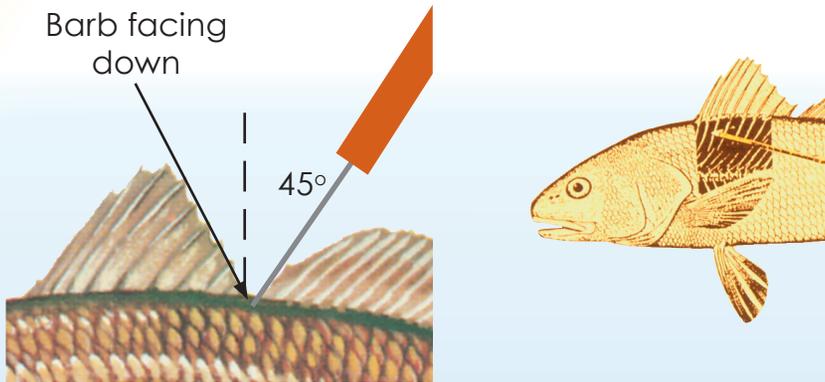
1. Check the number on the tag to make sure it matches the number on the card.
2. Use a rubber band to firmly hold the tag on the tagging stick.
3. Holding the leader, guide the fish alongside the boat.
4. The person tagging the fish should be positioned behind the fish to get a good angle for tagging.
5. Make sure the tag head is turned towards the fish. The tag should be “harpooned” into the dorsal muscle (back) area of the fish nearly half a body length back. The tag should be positioned at a 45 degree angle to allow the tag to lie along the fish's side as it swims.

3. Begin by inserting the applicator tip at a shallow angle under the scale until you feel it pierce the skin, then raise the applicator to an angle of 45 degrees.

4. Continue inserting until the tag barb is embedded in the fish's muscle. A slight "click" should be felt as the tag barb slides over the small bones under the fin and locks behind it. Gently pull on the tag to set the barb against the bone. Positive resistance should be felt.



Preparing to tag a fish in the water.



5. Measure the fish's length and record on the card.

6. Gently aerate the fish by moving it forward and backwards through the water until it is able to swim off on its own.

As soon as the fish is released, record all information on the tag report card. Please be as precise as possible when measuring the fish and reporting the release location. Place the card in the mail as soon as possible.

After use, the applicator should be rinsed in clean fresh water.

The "A" series tag is recommended for billfish (blue marlin, sailfish, swordfish and white marlin) and large sharks. The "A" tag consists of yellow tubing bearing the tagging program address and tag number attached to a pointed stainless steel anchor. A special applicator, fastened to a long pole holds the dart tip in place during the tagging procedure.

Constructing a tagging pole for "A" series tags

If you choose not to purchase a tag stick, you may construct one using a one-inch diameter wooden pole. For tagging billfish and sharks, you will need a tag stick five to eight feet in length depending on the size of the boat. When you receive your first "A" tag kit, a small stainless steel applicator tip will be included. To mount the applicator tip in the tag stick, drill a 5/32-inch hole at least one inch deep in the center of the pole. Place a small amount of strong bonding glue (epoxy works well) in the hole. Holding the applicator on the middle of its tapered shoulder with vise grips or pliers, center the large end over the hole and drive the applicator down by tapping on the vise grips or pliers and not the applicator. (The slotted end of the applicator may become damaged or break if it is tapped or hammered on).



Homemade tagging stick for "A" series tags.

Tackle

Many fishermen use light tackle to be more sporting, but fish you plan to release should be brought to the boat quickly to minimize exhaustion. A long fight on the line can upset a fish's chemical balance. This becomes especially important when fishing in water that exceeds 70 degrees.



Hooks and artificials

The location of a hook wound is the most important factor influencing the survival of a released fish, and a lip wound is much less severe than a gut wound.

Use artificial baits whenever possible. Fish tend to swallow natural baits, while they are usually hooked in the lip or mouth with artificial baits. Set the hook quickly when using natural bait so the fish does not have time to swallow.



Hook material

Saltwater fishermen have several choices of hook material. Chrome plated steel, gold plated steel, and "bronzed" steel all corrode quickly, in or out of fish and should be used whenever possible. Stainless steel hooks

Don't feel like you must tag fish on every trip. If you anticipate tagging fish on a given trip, decide beforehand on a procedure that you will follow which ensures a quick and healthy release of the fish. Have your tag applicator and measuring device at the ready, as seen in the picture on the previous page.

Tagging

How to apply "E" and "K" series tags

Carefully bring small fish in the boat for tagging. Larger fish should be tagged alongside the boat. Minimize handling of the fish, being careful not to place fingers in the eyes or gills. The tag should be inserted on the back of the fish near the dorsal or top fin. The dart barb should "lock" into place between the internal fin rays (under the dorsal fin). On larger fish, the tag should be inserted near the second dorsal fin in order to take advantage of the internal fin rays being closer together.



Steps to take when tagging

1. Check the number on the tag to make sure it matches the number on the card.
2. Position the tag applicator so that the tag barb is toward the dorsal fin spines of the fish. On a heavily scaled fish, use the tip of the steel applicator to go under the scale. Do not remove a scale.

Always keep handling to a minimum. If possible, release fish without removing them from the water.

Shallow landing nets, preferably those that are rubber or knotless nylon will remove less slime and reduce wounding. Hooks are also less likely to become snagged in this type of net material.



A graysby (*Epinephelus cruentatus*) is brought to the net.

A good tagging setup.



do not corrode and stay in fish. Cadmium/tin plated steel hooks corrode slowly and may be toxic if left in fish.

Barbless hooks

Barbless hooks can be removed from a fish much easier than barbed hooks, causing less damage and reducing time out of water. Anglers who have fished with barbless hooks for years say they hook and land just as many fish as with barbed hooks.

Barbs can be bent or filed down easily on bait hooks or artificial lures. You can leave a bump instead of a barb to prevent the hook from coming out too soon. Some barbless hooks are made with a bend to serve this purpose. Reduce the use of treble hooks to minimize wounding and time out of water. Often, single hooks can replace trebles without ruining the action of the lure.

Circle hooks

Over the last decade the use of circle hooks has become increasingly popular among recreational fisherman.



In addition to the effectiveness of actually hooking fish without the need for a "hook set", circle hooks have proven to be useful in terms of catch and release fishing. Unlike the standard "J" style hooks, circle hooks are designed to "roll" as a fish takes the bait thus resulting in the hook becoming

lodged in the corner of the mouth as opposed to the gut or throat. In some instances, fish will be gut hooked using circle hooks, but this is generally a case of the hook size being too small. Obviously, if using live bait, the hook should not be so big as to inhibit the bait's movement but should be large enough to prevent gut hooking the intended target species. For this reason, anglers deciding to use circle hooks should carry an assortment of sizes.

Never attempt to rip out a hook that a fish has swallowed. Instead, cut the line as close to the hook eye as possible and leave the hook intact.

Handling

Loss of Slime

Fish have a slime coating, which seals out infection. Rough handling can damage this protective layer. Avoid touching the eyes or gills.

Time out of the water

As long as a fish is out of the water, it cannot breathe or restore its chemical balance. Fish should be returned to the water as soon as possible.

Use of towels to protect fish

A wet towel can be placed over the head of the fish to calm it and minimize slime loss. Wet rubber textured gloves are also useful if you must handle the fish and will make tagging and/or removing the hook easier.



An angler uses a towel to calm a small dolphin (*Coryphaena hippurus*) before tagging.

Other useful tools

The BogaGrip™, or a similar version, can help minimize hand contact and are particularly useful in dealing with fish having sharp teeth. Avoid keeping the fish in a vertical position for too long, and make sure its' weight is adequately supported. Attaching a float, like the one seen here, can help keep this tool afloat should it accidentally be dropped overboard.

