



Careful handling and tag placement by these anglers ensures their yellowfin tuna has an excellent chance for recapture. The Tuna Champions initiative is now encouraging anglers to tag more southern bluefin tuna to assist fishery managers to better manage the survival of the species.



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THE INS AND OUTS OF TAGGING TUNA

Tagging ocean voyagers like southern bluefin tuna adds a fascinating bonus to your game fishing experience – where will your fish end up, and how big will it grow? Dr Sean Tracey, of the Tuna Champions program, explains how to get involved and how you can make your efforts more meaningful through ways to ensure most tuna survive, and by inserting the tags in a special way so they don't fall out.

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PHOTOGRAPHY: TIM SIMPSON; TUNA CHAMPIONS; GAME FISH TAGGING PROGRAM

Researchers have been tagging southern bluefin tuna (SBT) for decades as a way to learn more about their distribution and migration, including how far they travel. Fish tagging also provides insights into growth rates and abundance, as well as providing a better understanding of stock structure and how fisheries can be more effectively managed. The involvement of recreational anglers in tagging SBT also significantly increases our knowledge of this iconic species. Whether anglers tag tuna to participate as stewards of the fishery or simply to compete in competitions, fish tagging contributes valuable data to scientific programs – but only if it is done carefully and properly.

TECHNIQUE IS VITAL

For university researchers today, animal ethics clearance is required for any experiment involving animals, including fish. For example, fish tagging is considered a veterinary procedure, with competency assessments required from a certified veterinarian. As citizen scientists, anglers don't need this clearance, but for their tagging to be effective it is vitally important they know and follow the right tagging process.

Tagging gamefish is not difficult, but for the tag to stay attached and for the fish to have a good chance of survival, there is a particular way it needs to be done. For example, if the tag is simply jabbed into the back muscle of a tuna, it is very likely to fall out after release. The tuna may well be recaptured at



some time in the future, but the tag will not be there. This wastes an opportunity for valuable research and also affects the integrity of the tagging data, such as recapture rates. It is also important to keep in mind that a misplaced tag can kill the fish.

While many anglers successfully and competently tag gamefish, making small changes in how we do things can make a big difference. The Tuna Champions program aims to provide clear, science-based information so anglers can make those small changes.

Here's how to tag like a champion...

STEP 1: SOURCE YOUR TAGS

The NSW DPI Game Fish Tagging Program provides tags free of charge and has been operating since 1973. It is the largest game fish tagging program of its kind in the world, with over 470,000 fish tagged so far. The program is run using funds from the NSW Recreational Fishing Trust and works closely with the NSW Game Fishing Association and the Game Fishing Association Australia (GFAA).

The tagging program supplies tags all around Australia, including plastic-tipped dart tags for tuna,

as well as different tags for species such as marlin and sharks.

To be involved, contact your GFAA club or call the Game Fish Tagging Program on (02) 6691 9602 or email: gamefish.tagging@dpi.nsw.gov.au.

STEP 2: HANDLE WITH CARE

To tag a large tuna while it is still in the water, lead it as close to the side of the boat as possible and have a crew member carefully insert the tag using a tagging pole. Shorter poles will help with accuracy.

For fish under 20kg, it's easier to tag it onboard using a short (hand tagger) tagging pole. Careful handling is critical for the fish to have a fighting chance of surviving when released. The steps are as follows:

Ensure your tagging gear is ready to go, so the fish is out of the water for the shortest possible time.

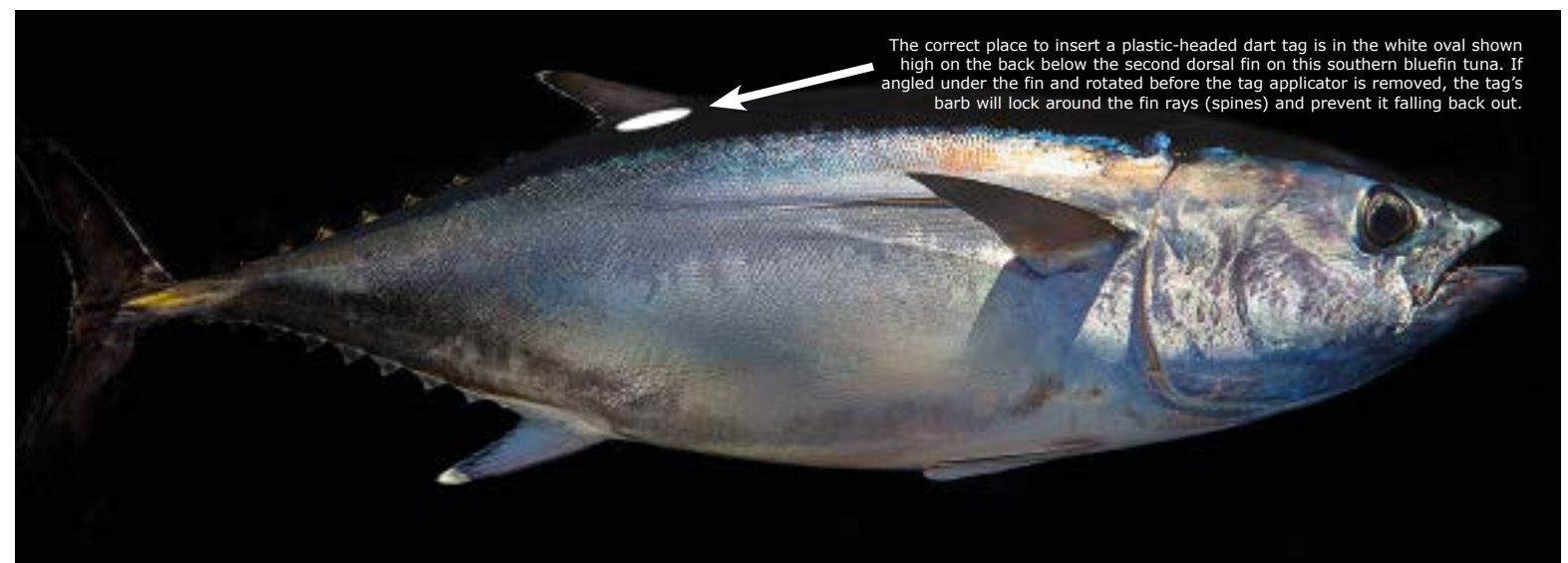
Land the fish with a sturdy knotless net.

Avoid grabbing it under the gill plate when lifting it as this can damage the sensitive gill filaments.

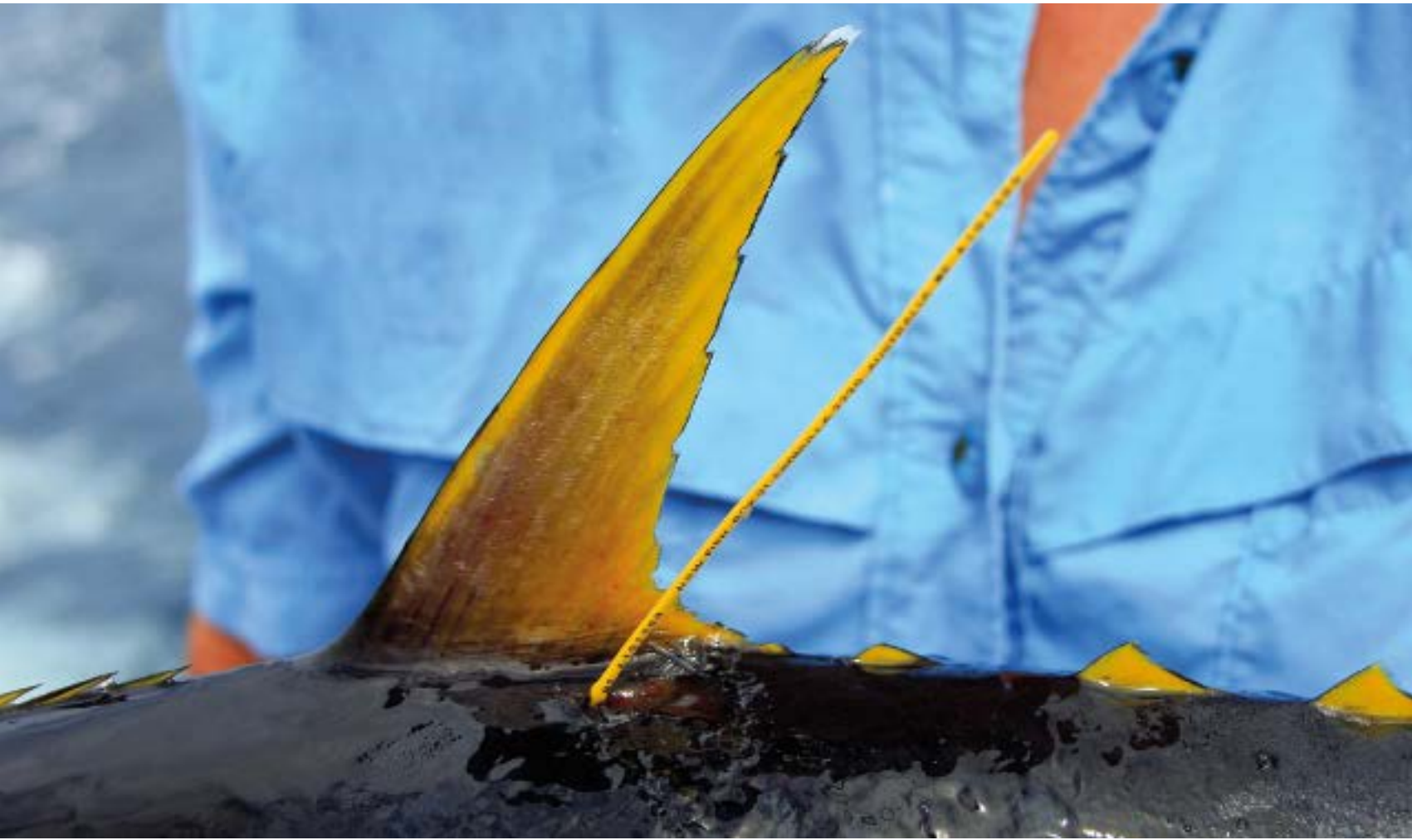
Place the tuna on a padded surface already wet with saltwater, then place a wet towel over its eye to calm it.

With two people involved, insert the tag quickly and accurately.

A short hand tag pole like this makes it far easier to achieve accurate placement of the tag with small gamefish that are removed from the water.



The correct place to insert a plastic-headed dart tag is in the white oval shown high on the back below the second dorsal fin on this southern bluefin tuna. If angled under the fin and rotated before the tag applicator is removed, the tag's barb will lock around the fin rays (spines) and prevent it falling back out.



The tag in this yellowfin tuna shows the correct positioning – high on the tuna's back, with the tag angled back towards the rear, and with its head angled in beneath the fin so the barb catches around the spines.

STEP 3: APPLY THE TAG CORRECTLY

For tuna, the best tag placement is high up under the second dorsal fin, with the tag inserted at a 45-degree angle to the fin (as shown in the accompanying photo of a yellowfin tuna being tagged). The barb of the dart tag is designed to lock in behind the basal rays (spines) supporting the fin, which scientists call pterygiophores. These tags are not designed to hold in the muscle tissue of the fish, so they will usually fall out if incorrectly placed.

When applying tags, consider that most tuna are tagged as juveniles and will grow quickly for the first years of their life. This means that even when a tag

is correctly inserted with the anchoring barb locked behind the pterygiophores, if the tag is positioned too low on the shoulder it can actually grow into the fish. There have been cases of fish being filleted where the whole tag had grown into the body and there was no external evidence of the tag at all. Correctly inserting the tag will ensure this doesn't occur.

STEP 4: MEASURE YOUR FISH

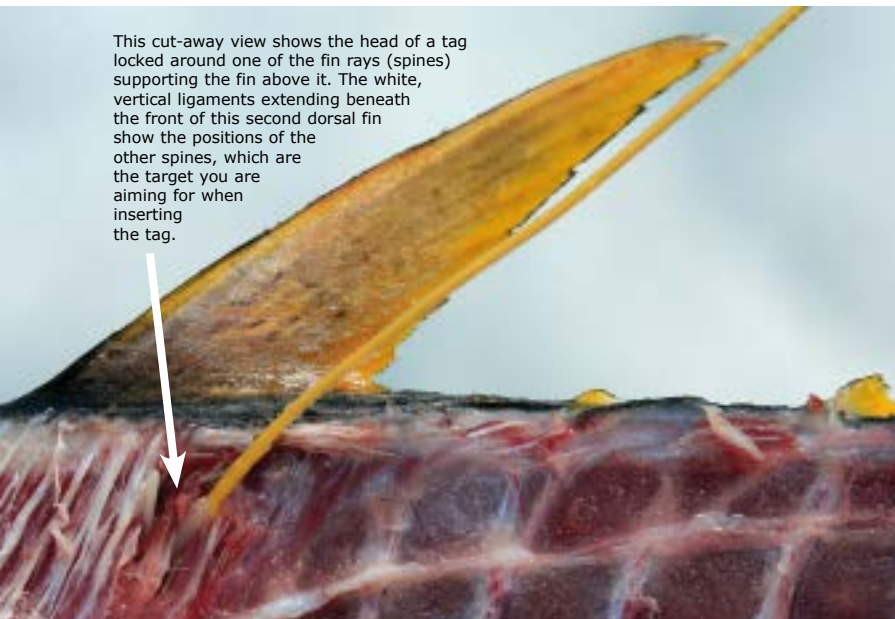
Once your fish has been tagged, accurately measure and record its length so its growth rate can be properly assessed if the fish is recaptured. This is important data, but through rushing or lack of care, some recaptured fish have been reported as shorter than they were when tagged and released a year earlier!

To accurately measure the fish in the water or on the deck, run a sewing measuring tape (or similar) from the tip of the lower jaw, along the body in a straight line, to the shortest point at the fork of the tail. This can be done in water or on the deck and may be easier using two people, depending on the size of the fish.

STEP 5: RECORD THE DETAILS

Next, record all the capture details accurately on the tag card. Have a crew member do this during the tagging procedure or complete the card immediately after the tuna's release. If in a hot-bite situation when multiple fish are being tagged in quick succession, it can help to note only the species and its estimated weight and length, together with the angler's initials and then finish filling out the card once the action subsides.

Each aspect of the capture listed on the card is important, as interpreting the data relies on it being complete and accurate.



This cut-away view shows the head of a tag locked around one of the fin rays (spines) supporting the fin above it. The white, vertical ligaments extending beneath the front of this second dorsal fin show the positions of the other spines, which are the target you are aiming for when inserting the tag.

STEP 6: RETURN THE TAG CARD

The tagging card should be returned promptly, as the rare opportunity to learn more about the species is lost if the release details are not recorded in the database.

The tag recapture rate of SBT is quite low, so the data from each recaptured fish is valuable. Club anglers should return their cards to their club tagging officer, although they can also be mailed directly to the tagging program at NSW DPI at the address provided on the back of each tag card.

To save wastage of precious funds from the Recreational Fishing Trust, please also return any unused tags that are not required so that they can be redistributed.

TAG MORE SOUTHERN BLUEFIN

Southern bluefin tuna are a key species supported by the Game Fish Tagging Program, with over 25,000 tuna tagged and 170 recaptures. To date, the furthest travelled was a fish tagged in the Neptune Islands, South Australia, later recaptured in the South Atlantic Ocean just past South Africa, clocking up a straight-line distance of 5221 nautical miles.

By following the steps outlined you will contribute valuable data that will help us all understand more about these amazing fish.

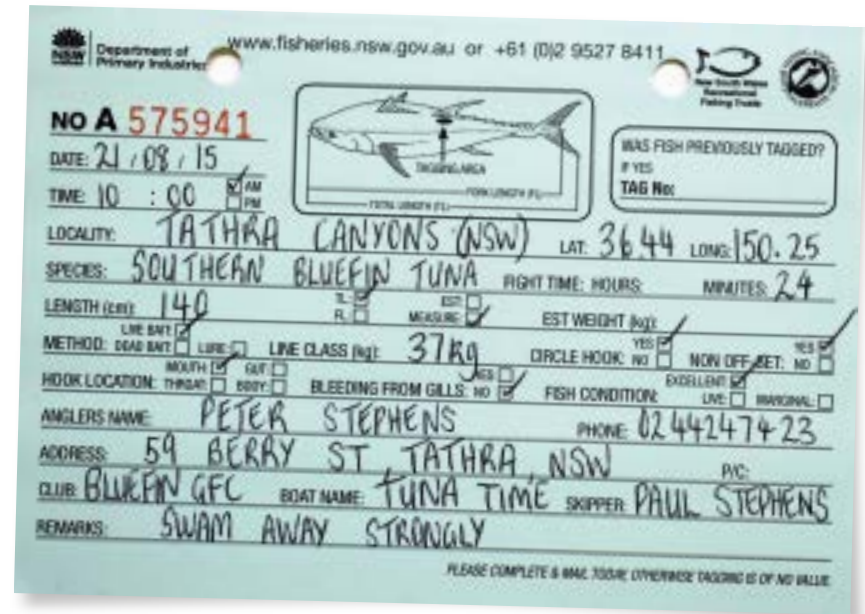
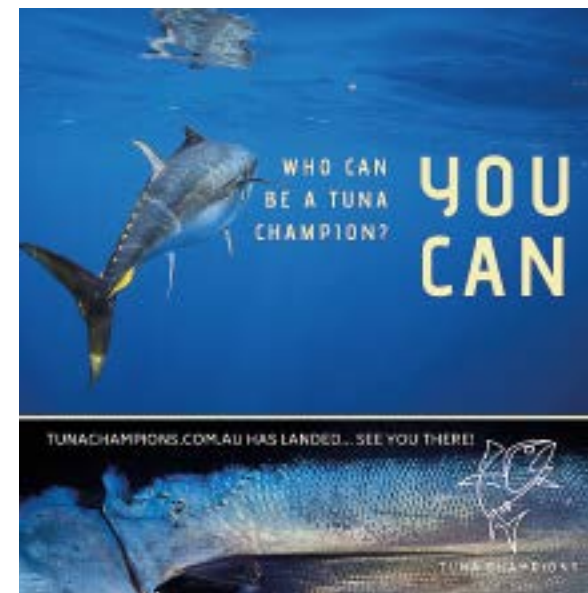
BECOME A TUNA CHAMPION

Visit www.tunachampions.com.au to meet our Ambassadors or pick up a Tuna Champions t-shirt. The website also provides hot tips for catching, handling and keeping or releasing your southern bluefin, as well as ways to prepare bluefin for a gourmet meal.

Tuna Champions is an initiative of the Australian Recreational Fishing Foundation in collaboration with the Institute for Marine and Antarctic Studies at the University of Tasmania, funded by the Australian Government through the Fisheries Research and Development Corporation.

BLUEWATER BLUEFIN TAGGING AWARD

To encourage and promote the correct methods for tagging southern bluefin tuna, *BlueWater* magazine has partnered with the Tuna Champions program and the NSW DPI Game Fish Tagging Program. In support



A correctly completed tag card.

of this initiative, *BlueWater* has donated a cast bronze Bodo Muche bluefin tuna sculpture as a trophy for the winner of a new 12-month tagging competition.

The trophy will be awarded to the boat submitting the most tag cards for correctly tagged and released southern bluefin tuna over the 12 months from 1 February 2019 to 31 January 2020. The winner will be announced in March 2020.

Participants must follow the Tuna Champions program on either Instagram (@bluefin38) or Facebook (Tuna Champions), as well as take the Tuna Champions pledge found at www.tunachampions.com.au.

For a tagged bluefin to be eligible in this competition, the tag must be inserted correctly into the location identified by the white oval in the photo near the beginning of this article.

A photo of each of your tagged fish, clearly showing the tag, must be emailed to bluefin@tunachampions.com.au. The individual tag number matching each tagged tuna must also be identified with the photo, ideally by changing the photo's file name to the tag number (e.g. A600010).

Good luck, and we look forward to showing your photos in coming issues of *BlueWater*...



WIN THIS

To encourage the tag and release of more southern bluefin tuna, as well as improve tag-and-release methods, *BlueWater* has donated this bronze Bodo Muche tuna sculpture for the *BlueWater* Tuna Champions Tagging Award. It will be presented to the Australian boat that correctly tags the most southern bluefin tuna between 1 February 2019 and 31 January 2020.