

# SOUTHERN BLUEFIN TUNA

## Code of Practice - Recreational Fishery

Information for responsible catching, handling, releasing and tagging of **Southern Bluefin Tuna**.



Photo: Al McGlashan

Research by:



Funded by:



Recreational fishers can each play a part in improving the Southern Bluefin Tuna fishery by applying best practices for responsible fishing. Applying best practice considers the welfare of individual fish and minimises impacts on fish stocks. This Code of Practice has been developed based on scientific research specific to the recreational Southern Bluefin Tuna fishery, existing science based literature on the impacts of recreational fishing and consultation with peak recreational fishing groups.

There is no legislative requirement to follow codes of practice; rather they are designed to provide fishers with fact-based information required to fish in a responsible way. Taking the time to read, learn and apply the information in this document will improve the recreational fishing experience for everyone.

## Catching Southern Bluefin Tuna

Southern Bluefin Tuna (SBT) are a large fish with those caught by recreational fishers typically weighing 10 – 50 kg, although it is not uncommon to catch fish in excess of 100 kg. Is your fishing gear up to the job? Are you using gear that will minimise impacts to the fish? Are there things you can do to avoid degrading the quality of the flesh if you plan to keep it for eating, or improve the fish's chance of survival if you plan to release it?

### **Minimising the time it takes to retrieve a fish to the boat will reduce the stress it experiences.**

Just like when a human exercises, lactic acid and stress hormones accumulate in the blood and muscle tissue. Not only does this lessen the quality of the flesh if you are planning to keep the fish to eat, but fish that are released after long fight times may take longer to recover.

### **Fight time can be reduced by using a heavier line class, buying a good quality rod and reel that is up to the job and educating yourself on good fishing techniques.**

Using heavier line is the best way to reduce fight times for smaller SBT. For larger fish a combination of heavier line and angling-boat driving experience is required. There are many experienced game fishers who can give tips on improving fishing techniques as well as instructional videos online. For any large fish a gimbal and harness is essential to help you control the rod and reel. Joining a fishing club that is associated with the Game Fishing Association of Australia is a great way to meet experienced anglers and receive information on responsible fishing practices.

### **Consideration of the type of hook you use can minimise damage to the fish. J hooks on trolled lures cause far less damage than treble hooks. Circle hooks should be used when bait fishing for SBT.**

It is a simple process to replace treble hooks on hard body lures with single hooks. This will substantially reduce the damage to the fish, improve its welfare and increase its chance of surviving if it is released.

Research has shown that a majority of fish caught when trolling lures are hooked in the mouth. So for trolling, J hooks are fine. When bait fishing however, the fish has more time to swallow a floating bait resulting in potential for deep hooking. Circle hooks have been demonstrated to reduce the incidence of deep hooking.



## Minimising predation of hooked fish

Hooked fish have a reduced ability to avoid predation. Interactions between hooked SBT and seals are relatively common in Tasmania, and anecdotally, interactions have occurred in SA and Victoria. Whether you plan to keep or release the fish minimising predation interactions is a good idea. Seals learn quickly and rewarded behaviour will increase interactions.

### **Avoid fishing in areas where predators are in high abundance. Never feed a predator, including fish carcasses after filleting. Minimise fight time to reduce the possibility of a predation.**

Seals will learn to associate boats with a feed. If a predation occurs move away from the area before you resume fishing. Avoid releasing fish in areas where predators are present, particularly if the fish was chased during retrieval to the boat.



Photo: Al McGlashan



Photo: Sean Tracey

**J hooks on trolled lures cause less damage than treble hooks. Circle hooks should be used when bait fishing for SBT.**

## Handling Southern Bluefin Tuna

Whether you plan to retain or release a fish, it is important to consider how you handle it. Poor handling can affect the welfare of the animal, reduce its chance of survival if released and affect flesh quality if you plan to keep it to eat.

### Retaining fish

Bluefin Tuna are an iconic species regarded around the world for their high quality flesh, particularly for the raw fish (sashimi) market. This high demand has led to commercial overfishing, but stocks are currently rebuilding under strict international fishing management arrangements. Recreational fishers in Australia have the opportunity to enjoy this highly prized species whether it is to catch and release or serve up quality seafood. Recreational fishing effort has been increasing as the stocks rebuild. With this in mind SBT should be treated with respect and regulations adhered to.

**Know the regulations before you head out fishing, they may be different in each state. Think about the quantity of fish you need to keep, and note that highgrading is illegal. Catch regulations are a limit not a challenge!**

Bag and possession limits used to manage recreational fisheries are designed to control catch by stopping individuals taking excessive numbers of fish. Ideally this allows more fishers access to the fish, sharing the resource. Catch limits alone however, do not 'cap' recreational harvest since there is no limit on how many people can join the fishery. For SBT, a high profile species recovering from overfishing it is important that authorities are aware of how much is being caught. This information can then be used by fisheries scientists to ensure that management is effective and stocks continue to rebuild.

The size of the SBT you catch can vary greatly and this will have a big impact on the amount of fish you could end up taking home. Before you set out fishing, consider how much flesh you and the others on the boat really need, rather than how many fish you are

going to keep and ensure that you have everything you need to process and store the fish appropriately, including space in the fridge or freezer at home. Only take enough fish to accommodate what you need. Avoiding fish wastage is a crucial part of being a responsible fisher.

### *Recreational fishing surveys*

Recreational catch is determined by specially designed surveys. These surveys are used regularly across many recreational fisheries to provide data for sustainable management. A survey method to assess the recreational catch of Southern Bluefin Tuna is currently being designed. So if you are invited to join a survey your participation will help to ensure that fish stocks are being managed effectively.

**Bring the fish aboard carefully, trying to avoid damaging the fish as bruising will affect the quality of the flesh.**

Landing the fish onto a padded mat or soft surface will minimise bruising the flesh. A dark, wet cloth over the eyes can assist in keeping the fish calm.

**Immediately dispatch the fish by administering a spike to the brain then bleed the fish by making a cut behind the pectoral fins on both sides.**

It is important to dispatch the fish quickly. The most effective and humane way to do this is by spiking the brain, a process known as iki jime (see website links). Not only is this good practice in regard to the welfare of the animal, it also stops the fish moving which can cause the flesh to heat up and reduce its quality. The fish are bled to reduce the amount of blood that is retained in the flesh. The more blood that is released the milder the flavour. Poorly bled Bluefin Tuna are often too rich in taste for most people and can lead to wastage if the flesh is then discarded.

**Remove the gills and organs straight after brain spiking and bleeding. Then put the fish trunk into a fish bag, ice chest or esky with ice to cool the body temperature.**

Southern Bluefin Tuna are endothermic, which means they can heat their body, maintaining an internal temperature above that of the water. Once the fish has been processed it is important to reduce the temperature of the flesh as quickly as possible to avoid it degrading. An ice slurry is particularly effective as there is greater surface area contact than with just ice.

**Reduce wastage by learning how to fillet Southern Bluefin Tuna effectively. There are some good instructional videos on YouTube.**

Filleting a large fish requires a bit more work and different techniques to smaller fish. There are several good videos on YouTube illustrating how to effectively fillet tuna to minimise wastage and ensure you have the best quality flesh. Investing in a good quality, large filleting knife that is kept sharp will also make the job easier.

## Releasing fish

Releasing fish is beneficial in reducing the impact of fishing on populations. A fundamental assumption of catch and release is that the released fish not only survive after release but also that they are not damaged in a way that affects their ability to function normally, including spawning.

The survival rate of SBT released using typical recreational fishing methods is greater than 80%. Little, however, is known about the longer-term effects of catch and release fishing on tuna. Therefore reducing stress on the fish is important not only to increase their chance of post-release survival but also to minimise the risk of sub-lethal effects. There are several practices outlined earlier that you can do to minimise stress and damage, and if you are planning on releasing fish you should consider these carefully. Commonsense also plays an important role, if you have done everything right and the fish is not recovering after an extended period of time when being resuscitated boatside consider keeping that fish as part of your catch limit and let the healthy ones go. Do not gaff the fish if you intend to release it.



*Researchers investigating post-release survival of SBT using state of the art satellite tags.*

**When releasing a fish hold it alongside the boat while moving ahead slowly so that water is passed over the gills until it actively swims away. Be aware of avoiding predation by sharks or marine mammals.**

Tuna are ram ventilated. This means that they need water flowing over their gills to breathe. Holding them in the water with the boat stationary is far less effective at assisting this process.

Fish may swim away immediately or take up to several minutes to recover. Research on recreationally caught large Atlantic Bluefin Tuna has shown that it may take 15 minutes or more for these big fish to recover.

**If the hook can be seen, and is not in a position where removal will cause major damage, remove it with pliers or a de-hooker while the fish is still in the water.**

Bleeding can look a lot worse in the water as the blood is diffused. Minor bleeding from hook damage in the jaw has been shown to have little impact on survival post-release.

**The best way to reduce stress on a fish is to shorten fight time, minimise damage by considering hook choice and using good fishing and handling techniques.**

Photo: Klaas Hartmann



**If the fish is deep hooked consider keeping it as part of your bag limit as the potential damage may affect survival after release, but if you choose to release it leave the hook in the fish and cut the line as close as possible to the hook, making sure the fish is resuscitated prior to release.**

Research on other fish species has shown that when a fish is deep hooked leaving the hook in causes less damage than trying to remove it and that the likelihood of survival is higher.

**If the hook has caused damage to the gills the fish has a far lower chance of survival, consider keeping fish with gill damage as part of your bag limit.**

Research has shown that damage to the gills of SBT affects their chance of survival. If there is obvious damage to the gills it is best to keep the fish as part of your catch limit.

**Make sure anything that comes into contact with the fish is wet.**

Fish have a layer of mucus covering their bodies which acts as a protective barrier. Making sure things that come into contact with the fish, including your hands, are wet will reduce the amount of mucus that is removed.

**If removing a fish from the water for a photo prior to release, consider using a landing net, avoid lifting it by the gill plate or tail, try and support the whole body, and minimise time out of water.**

Taking a photo of a good catch is commonplace and if done carefully will not dramatically affect the chance of survival once released. When removing the fish from the water be careful not to lift it by the tail unless the weight of the body is being supported. Also take care not to slip your hand in under the gill plate, which could result in damaging the gills.

When the fish is onboard the same principles apply. Handle the fish carefully, avoid dropping the fish, putting your hand in under the gill plate, or suspending the fish by the tail. Fish that are too large to retrieve onto the boat without damaging it should be left in the water. A photo of the fish can be taken boatside.

Minimising the time the fish is out of the water is important, have the camera ready and clear the deck of the boat before it is removed from the water. Again make sure the fish is resuscitated once back in the water before releasing it.



## Tagging fish

Tagging fish provides data for research. If the fish is recaptured it can provide information on movement and growth, and in some cases natural mortality rates across the population. For the tagging data to be useful the tagging needs to be done properly and the tagging event recorded accurately. If done incorrectly the data is less useful and may adversely affect the fate of the fish after release. The NSW-DPI game fish tagging program is currently the best source and repository of recreational game fishing tags and data.

**It is best to tag the fish while it is still in the water, particularly for larger fish.**

As previously explained the fish should be left in the water whenever possible. If you do remove the fish for tagging or a photo follow the protocols in the previous section.

**If applying the tag while the fish is out of the water ensure that it is carefully placed on a wet, padded surface.**

To minimise damage to the fish lay it on a padded surface that has been wetted with saltwater. A wet towel laid over the eye will often help to calm the fish making the tagging process easier and faster. It is also far easier if two people are involved in the process.

**Administer the tag using an appropriate tagging tool, place the tag directly under the second dorsal fin, and insert the tag at an angle leaning back towards the tail. Ensure the tag anchor passes through the muscle and bones under the fin.**

Poor placement of the tag can have several negative effects. Primarily, if the tag is placed too low, towards the lateral line of the fish, it can cause significant damage to the fish. Secondly, poor tag placement may lead to the tag falling out after release. Tag loss can affect the interpretation of the tagging data, particularly if the data are used to assess natural mortality.

The tags are designed so that the anchor is locked in between the bones that connect to the fin rays. Applying the tag just under the fin and on an angle laying the tag back towards the tail is the best way to ensure this occurs. A small twist of the applicator can assist in making sure the anchor head is locked in.

**Record the length of the fish as accurately as possible.**

The easiest way to record the length of the fish is to use a sewing measuring tape. Run the tape from the tip of the lower jaw, along the body in a straight line to the shortest point at the fork in the tail. This can be done either in water or on the deck. This process may be easiest using two people depending on the size of the fish.

**Record all the capture details accurately on the tagging card.**

The different aspects of the capture that are listed on the card are important and included for a reason. Interpreting the data relies on the completeness and accuracy of the data recorded.

**Return the tagging card to the administering group as soon as possible.**

The tag recapture rate of Southern Bluefin Tuna is quite low so the data from each recaptured fish is valuable. If the tagging card is lost or forgotten about after tagging and the fish is recaptured the rare opportunity to learn more about Southern Bluefin Tuna from the individual fish is lost.

Return the tag card using the return address or return unused tags/cards to your club tagging officer

*The NSW DPI Game Fish Tagging Program*

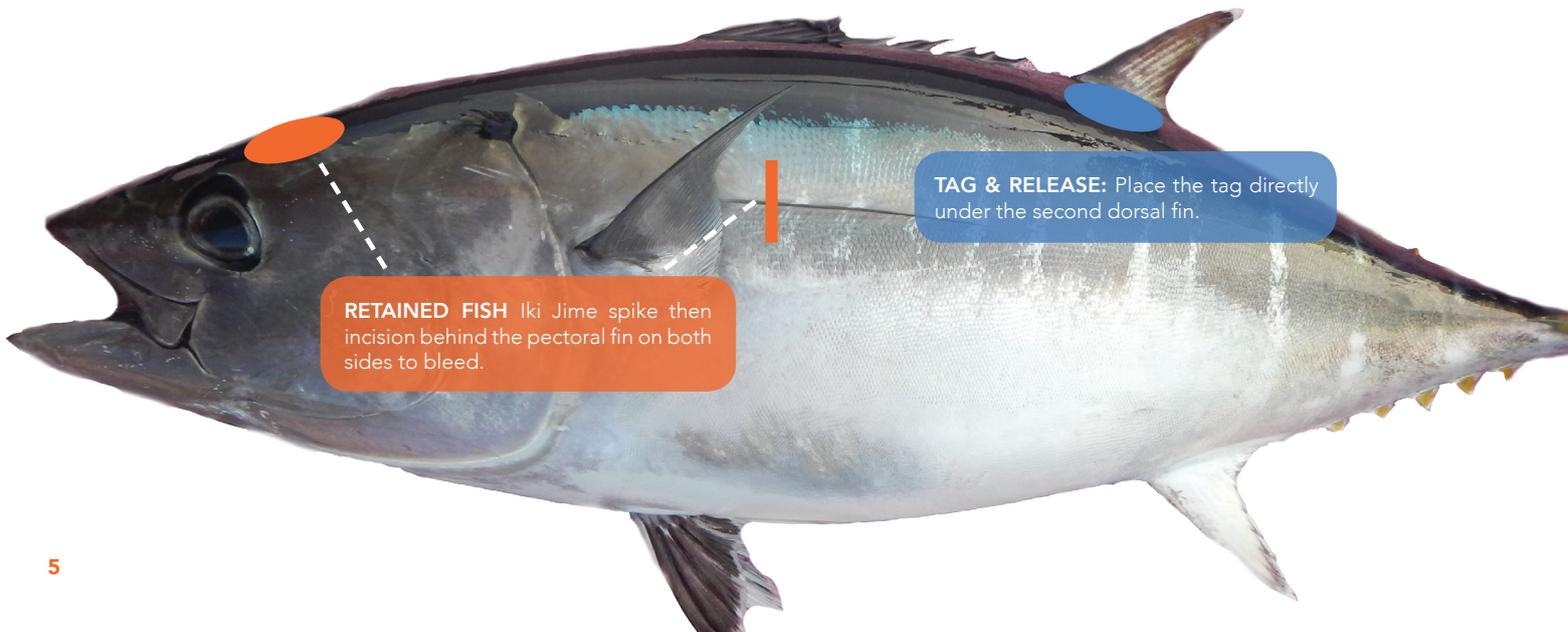


Is the largest game fish tagging program of its kind in the world and has been in operation since 1973. It is used to obtain information on the biology (distribution, movement, growth, exploitation) of billfish, tunas, sharks and sport fish and encourages game fishers to participate in the management of the fishery.

SBT are a key species supported by the Program, with over 20,000 fish recorded as tagged and released and 130 recaptures. To date, the furthest traveled was a fish tagged in the Neptune Islands (South Australia) and recaptured in the South Atlantic Ocean, just past South Africa, clocking up a straight line distance of 5221 nautical miles.

The NSW DPI Game Fish Tagging Program issues tags free of charge and works in close association with the NSW Game Fishing Association and the Game Fishing Association of Australia. The program is run using funds from the NSW Recreational Fishing Trust. Over 425,000 fish have been tagged under the program so far. If you would like to get involved in the program please contact your club, or phone or email the Game Fish Tagging Program on **(02) 4424 7423** or **gamefish.tagging@dpi.nsw.gov.au**.

A correctly completed tag card ready for return.



**RETAINED FISH** Iki Jime spike then incision behind the pectoral fin on both sides to bleed.

**TAG & RELEASE:** Place the tag directly under the second dorsal fin.



Photo: Al McGlashan

## Other sources of information on best practices for recreational fishing

This code of practice relates specifically to recreational fishing for Southern Bluefin Tuna, but a lot of the practices described are just as relevant for other game fish species. For more information on best practices when recreational fishing for large pelagics and recreational fishing in general, the following links are useful:

Recfish Australia National Code of Practice:

[www.recfishingresearch.org/national-code-of-practice/](http://www.recfishingresearch.org/national-code-of-practice/)

Gamefishing Association of Australia Code of Practice for a Responsible Gamefish Fishery

[www.gfaa.asn.au/new/index.php/gfaa-information/gfaa-principles-code-of-practice](http://www.gfaa.asn.au/new/index.php/gfaa-information/gfaa-principles-code-of-practice)

Neatfish: A standard for the National Environmental Assessment of Tournament Fishing

[www.neatfish.com](http://www.neatfish.com)

Ike jime (also available as a mobile device applicaiton)

[www.ikijime.com/fish/tuna-southern-bluefin/](http://www.ikijime.com/fish/tuna-southern-bluefin/)

New South Wales Department of Primary Industries Game Fish Tagging Program

[www.dpi.nsw.gov.au/fisheries/recreational/saltwater/gamefish-tagging](http://www.dpi.nsw.gov.au/fisheries/recreational/saltwater/gamefish-tagging)

Department of Primary Industries, Parks, Water and the Environment Tasmania

[www.dpipwe.tas.gov.au/sea-fishing-aquaculture/recreational-fishing/scalefish/tuna-fishing/catching-handling-and-releasing-your-tuna](http://www.dpipwe.tas.gov.au/sea-fishing-aquaculture/recreational-fishing/scalefish/tuna-fishing/catching-handling-and-releasing-your-tuna)

[www.dpipwe.tas.gov.au/sea-fishing-aquaculture/recreational-fishing/scalefish/responsible-fishing](http://www.dpipwe.tas.gov.au/sea-fishing-aquaculture/recreational-fishing/scalefish/responsible-fishing)

Primary Industries and Regions South Australia

[www.pir.sa.gov.au/fishing/recreational\\_fishing/handling\\_your\\_catch](http://www.pir.sa.gov.au/fishing/recreational_fishing/handling_your_catch)

BlueWater Boats & Sportsfishing magazine

Booth, G. (2010). Tagging - for results, making it easier for you and better for science. *BlueWater Boats & Sportsfishing magazine*. 82: 82-88.



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This code of practice has been endorsed by:

