

Action Statement

Flora and Fauna Guarantee Act 1988

No. 197

Southern Bluefin Tuna

Thunnus maccoyii

Description and distribution

The Southern Bluefin Tuna is a long-lived member of the tuna family, Scombridae, reaching ages of 40 years or more. They can grow to about 2 meters in length and weigh around 200 kilograms and are silver-white in colour with a blue-black upper body and yellow tinged fins. The Southern Bluefin Tuna's closest relative is the northern bluefin tuna (*Thunnus thynnus*), a much larger fish which is found in the Mediterranean and can weigh up to 700 kilograms.

The Southern Bluefin Tuna is fast swimming, reaching 70 kilometres per hour in bursts. They have a large, streamlined, bullet shaped body, fins that retract back into special grooves and inset eyes that all reduce resistance in the water. Individuals must swim constantly so that water flows over the gills, passing large amounts of oxygen into the bloodstream. A large heart circulates this oxygen to different muscle groups that are specifically designed to either fuel bursts of high speed or endurance swimming over long distances. Like other species of tuna, the Southern Bluefin Tuna is capable of maintaining blood temperature at a higher level than surrounding waters through counter-current heat exchange systems. This allows the individual to tolerate the wide range of water temperatures it encounters on a yearly migratory route.

It is generally accepted that the population in the southern hemisphere is a single stock, which spawns at only one known ground in the tropical waters between Indonesia and north-west Australia between September and March (Caton 2002). The migration route extends from the spawning area, south along the west coast of Australia and then as

far east as New Zealand and west to southern Africa and into the south Atlantic Ocean.

Habitat

Southern Bluefin Tuna is an oceanic species that usually favours deep waters seaward of the edge of the continental shelf. These waters are well beyond the three nautical mile boundary of Victorian territorial waters and southern bluefin tuna seldom approached the State in significant numbers. The Victorian waters nearest the edge of the shelf are found near Portland and Croajingalong, at the western and eastern ends of the State respectively, where some southern bluefin tuna are occasionally found.

Life history and ecology

Southern Bluefin Tuna are slow growing and become sexually mature at a late stage of 10-12 years when they travel to the tropical spawning ground (Caton 2002). Each spawning female produces up to 15 million eggs during a spawning event, of which few will survive to adulthood. The eggs hatch after 2-3 days and larvae and small juveniles are then carried southwards along the West Australian coastline, helped by ocean currents. Juveniles tend to remain nearer the coasts for the first three years of life and then generally move out to sea to live an oceanic life.

Southern Bluefin Tuna are opportunistic and feed in the interface of cold and warm currents on cephalopods, crustaceans, fish and salps. Feeding usually takes place on the surface at night while they tend to spend their days in deeper waters

(where they are known to dive to at least 500 metres). Sharks, other fish, seabirds and killer whales are possible predators at different stages of the tuna's life cycle (Kailola *et al.*1993).

Decline and threat

The uncooked flesh of Southern Bluefin Tuna is highly prized for use in sushi and sashimi dishes. Scientific assessments have indicated that extensive commercial fishing, across its migration route, to support this market is the main reason for their decline in abundance over the past 40 years. Southern bluefin tuna were first targeted by commercial operators off NSW in the 1950s and a fishery quickly developed along its migration route (Caton 2002). The largest reported global commercial catches of about 80,000 tonnes/ year were taken in 1960 and 1961 (CSIRO nd). Since that time, scientific assessments indicate a large decline in parent biomass as well as substantial declines in recruitment. Their biological characteristics make this species susceptible to, and slow to recover from fishing pressure (BRS 1997) and despite increases in fishing effort, substantial declines have occurred in both catches and catch rates.

Internationally, the majority of Southern Bluefin Tuna are caught on longlines and sold primarily to the Japanese market as frozen product. In Australia however, 95% of the commercial catch is taken by the purse seine method, which consists of a large net that surrounds the fish school and is closed at the base (Caton 2002). The southern bluefin tuna are towed live to Port Lincoln in South Australia where they are grown-out in floating sea cages until the flesh quality is optimal. The fresh or frozen product from this method is highly regarded on the Japanese market. The remaining commercial catch in Australia is taken by the longlining method.

On a far lesser scale than the commercial fishery, individual recreational or game fishers acting privately or as clients of charter operators also opportunistically take southern bluefin tuna in Australian waters. Preliminary results of a *National Recreational and Indigenous Fishing Survey* in 1999 indicated that the largest quantity of Southern Bluefin Tuna taken by the recreational sector were taken in South Australia, Tasmania and New South Wales. While the survey did not identify Victoria as a source of recreational take, anecdotal evidence suggests that minimal catches did occur and were not included in the tally. The survey also indicated that about 48% of Southern Bluefin Tuna taken in Australian waters by the recreational fishing were released alive, a practice which significantly reduces the number of Southern Bluefin Tuna harvested by the sector. However, where individuals are exhausted on

release, overheating and lactic acid build-up is likely to have occurred, reducing their ability to recover. The true survival rate of post-release individuals is yet to be determined.

Conservation status

Internationally, the Southern Bluefin Tuna was listed as 'critically endangered' in 1996 by the International Union for the Conservation of Nature (IUCN).

In Victoria, the species is listed as a 'threatened taxon' under the **Flora and Fauna Guarantee Act 1988**. In its final recommendation for the listing, the Scientific Advisory Committee determined that the taxon is rare in terms of abundance.

Previous Management Action

Several international agreements have been put in place to manage the global impact on Southern Bluefin Tuna. In Australia, these agreements have been incorporated into domestic arrangements and are outlined below.

International Arrangements

United Nations Convention on the Law of the Sea is an international treaty signed in 1982 to protect and preserve the marine environment. This Convention is principally related to fisheries. The Convention clarifies jurisdictions and allocates responsibilities for management of fishing activities.

United Nations Fish Stocks Agreement is an international agreement adopted in 1995 seeking to lay down a comprehensive regime for the conservation and management of straddling and highly migratory fish stocks. The Agreement includes: general principles; measures for strengthening regional and subregional cooperation; measures for monitoring, surveillance and enforcement; and the settlement of disputes. Australia ratified this agreement and incorporated its provisions into Australian law.

Convention for the Conservation of Southern Bluefin Tuna is an international agreement between Australia, New Zealand and Japan on the management of the global Southern Bluefin Tuna Fishery. The Commission for the Conservation of Southern Bluefin Tuna was established under the agreement. The Commission meets to determine international objectives, management measures and key strategies for the fishery at the international level. The current management objective adopted by the Commission is to rebuild the parental southern bluefin tuna stock to the 1980 level by the year 2020. Management measures include setting an annual global total allowable catch and national allocations for

member countries. The Southern Bluefin Tuna global total allowable catch of 11,750 tonnes has been set since 1989 of which 5,265 tonnes has been allocated to Australia. More recently, the Republic of Korea and Taiwan joined the Commission, agreeing to limit their annual national catches. The Commission is now pursuing the engagement of other fishing nations to reach agreements on their national catch limits.

National Arrangements

Offshore Constitutional Settlement Agreement is an agreement between the Commonwealth and the States and Territories. The agreement relating to southern bluefin tuna allocates management responsibility for southern bluefin tuna taken by all methods in Australian waters to the Commonwealth. The jurisdictional agreement also includes arrangements for the State to limit the incidental catch of southern bluefin tuna in State managed commercial fisheries. In relation to Victoria, this incidental catch is considered to be negligible as the commercial fishing methods used in State managed fisheries are unlikely to interact with the species.

Southern Bluefin Tuna Fishery Management Plan 1995 is a Commonwealth Plan that outlines the specific management arrangements for Australia's commercial Southern Bluefin Tuna fishery. This plan was developed in accordance with the Convention, and other international agreements. The management regime includes individual transferable quotas allocated to companies as statutory fishing rights under the plan. The Commonwealth receives advice from a management advisory committee, on which State and Territory views are presented.

Victorian Arrangements

By-catch limits for commercial operators - Southern Bluefin Tuna by-catch in Victoria's commercial fishing operations is managed through a by-catch limit of 0kg.

Bag/possession limits for recreational operators - Recreational fishing for Southern Bluefin Tuna in Victorian waters is subject to a daily bag limit of two fish per person and a possession limit of two fish in, on or next to the fishing waters. Southern bluefin tuna taken in Commonwealth waters (where no recreational bag/possession limit applies) and landed Victoria are subject to the 2 fish per person limit.

Management Issues

In addition to the commercial harvest, the Commonwealth currently also has responsibility for managing Southern Bluefin Tuna taken by the

recreational and charter sectors through Offshore Constitutional Settlement arrangements. It is considered that the management needs of these sectors are best met by the States though their existing arrangements for recreational fishing. The Commonwealth and States are therefore exploring options to formally transfer jurisdictional responsibility of recreational and charter fishing for game species such as southern bluefin tuna to the States. In the interim, the take of Southern Bluefin Tuna by the recreational and charter sector is managed through 'catch limits' (a generic term that includes daily bag and possession limits).

International obligations are now requiring more stringent management arrangements for Southern Bluefin Tuna. Australia has agreed that all Australian catches of Southern Bluefin Tuna taken by any method will not exceed the national allocation (Australia's total allowable catch). The Commonwealth's fishery management plan currently allocates fishing rights at a level consistent with this national allocation only to the commercial fishery. The States/ Territories and the Commonwealth are therefore developing arrangements that recognise the rights of all Australian Southern Bluefin Tuna fishery sectors (commercial, recreational and charter) and ensure that the total Australian catch is consistent with the national allocation.

Conservation Objective

Long term objective

That Southern Bluefin Tuna can survive, flourish and retain its potential for evolutionary development in the wild.

Objective of this action statement

1. Continue to apply current arrangements to minimise the impacts from Victorian managed activity on Southern Bluefin Tuna.
2. Formalise jurisdictional arrangements with the Commonwealth Government for management of recreational and charter fishing that targets species such as Southern Bluefin Tuna.

Intended Management Action

Effective protection and sustainable use of Southern Bluefin Tuna can only be achieved through co-operative management actions at international, national and state levels given the broad distribution and highly migratory nature of the species. It is also recognised that effective control of fishing impacts on the Southern Bluefin Tuna stock are most likely to be achieved through international agreements and implementation of these arrangements at a national level.

It is recognised that the commercial fishery for Southern Bluefin Tuna is managed by the Commonwealth and that southern bluefin tuna are not permitted to be taken in Victorian managed commercial fisheries and that a limit of catches for the recreational sector applies. It is therefore intended that the actions specified in this Action Statement contribute to the amelioration of global threats to southern bluefin tuna by managing direct impacts on the stock in marine waters under Victorian jurisdiction and supporting national fishery management arrangements.

1. Formalise jurisdictional responsibility with the Commonwealth to ensure that recreational and charter fishing catches and commercial by-catches of Southern Bluefin Tuna from waters adjacent to Victoria are managed appropriately to compliment international obligations and national management arrangements for Southern Bluefin Tuna fisheries.

Responsibility: DPI

Review State Southern Bluefin Tuna fishery arrangements where necessary to accommodate changes in the national or international southern bluefin tuna management arrangements as determined by the Commonwealth or the Commission following scientific assessment of stock status.

Responsibility: DPI

2. Support the Commonwealth's participation in the Commission for the Conservation of Southern Bluefin Tuna for pursuing global sustainability of the species.

Responsibility: DPI, DSE

References

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Further information can be obtained from Department of Sustainability and Environment Customer Service Centre on 136 186.

Flora and Fauna Guarantee Action Statements are available from the Department of Sustainability and Environment website: <http://www.dse.vic.gov.au>

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