

# Southern Bluefin Tuna (2023)

*Thunnus maccoyii*



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## STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Commonwealth	Global	Sustainable	Spawning stock biomass, projections of rebuilding

## STOCK STRUCTURE

Southern Bluefin Tuna constitutes a single, highly migratory biological stock that spawns in the north-east Indian Ocean and migrates throughout the temperate southern oceans, supporting a number of international fisheries [Proctor et al. 1995; Evans et al. 2012; Patterson et al. 2018]. Here, assessment of stock status is presented at the biological stock level—Global.

## STOCK STATUS

**Global** Southern Bluefin Tuna is fished by Australian fishers endorsed to operate in the Southern Bluefin Tuna Fishery (Commonwealth). Fishers in the Eastern Tuna and Billfish Fishery (Commonwealth) and the Western Tuna and Billfish Fishery (Commonwealth) who have quota for Southern Bluefin Tuna can retain catches of the species. The species is also caught by recreational fishers in the waters off southern Australia, with catch estimated to be 270 tonnes (t) in 2018–19 [Tracey et al. 2020].

A stock assessment undertaken by the CCSBT in 2020, using data up to and including 2019, took into account reported catch from all international jurisdictions [CCSBT 2020, Hillary et al. 2020]. It also examined the sensitivity of the results to alternate scenarios for unaccounted fishing mortalities and other parameters. Since 2009, the stock has been rebuilding by approximately 5% per year and recruitment levels remain above historical averages [CCSBT 2021]. The 2020 estimate of total reproductive output of the Southern Bluefin Tuna stock is

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20% (80% confidence interval 16–24%) of initial levels [Hillary et al. 2020; Patterson and Dylewski 2022]. The estimate of fishing mortality in 2019 was 52% (80% confidence interval 37–73%) of the level associated with maximum sustainable yield [Hillary et al. 2020]. All projections undertaken as part of the stock assessment indicate that the adult stock will remain above 20% of initial levels in 2035 with a high probability [Hillary et al. 2020].

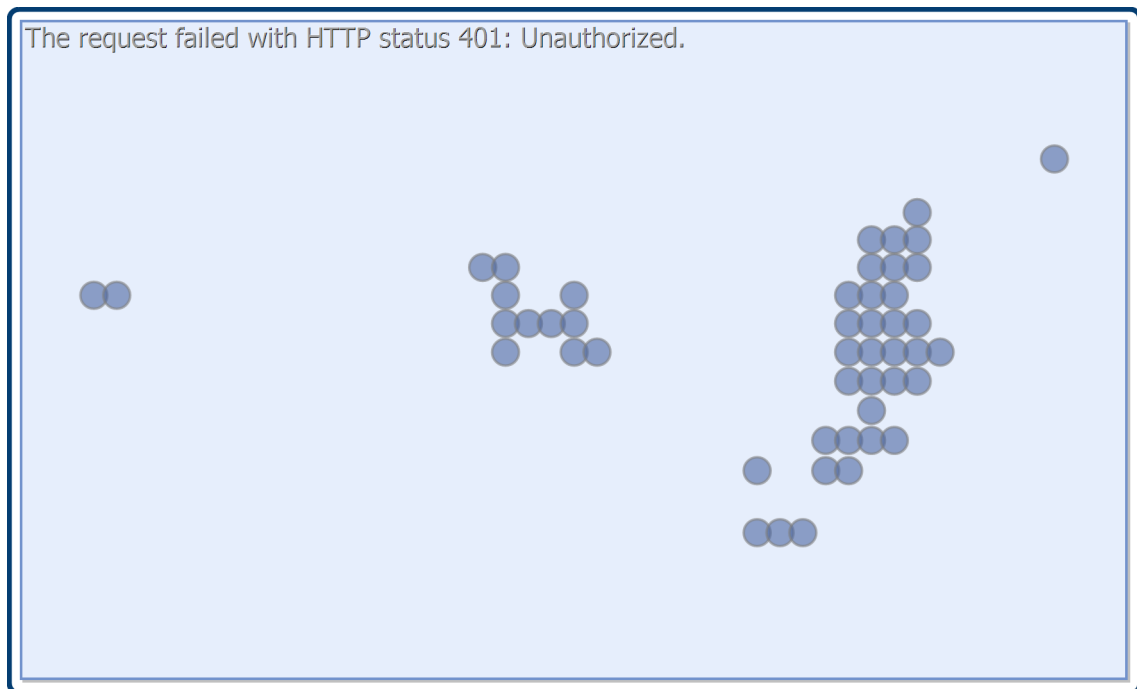
On the basis of the evidence provided above, the global biological stock is classified as a **sustainable stock**.

## BIOLOGY

**Southern Bluefin Tuna biology** [Davis et al. 2001; Farley et al. 2014, 2015; Sulistyaningsih et al. 2019]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Southern Bluefin Tuna	40+ years; > 2,000 mm FL	10–12 years; 1,580–1,630 mm FL

## DISTRIBUTION



Distribution of reported commercial catch of Southern Bluefin Tuna

## TABLES

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<b>Fishing methods</b>					
	<b>Commonwealth</b>	<b>New South Wales</b>	<b>Queensland</b>	<b>South Australia</b>	<b>Tasmania</b>
<b>Commercial</b>					
Longline (Unspecified)	✓				
Pole and Line	✓				
Purse Seine	✓				
Rod and reel	✓				
Trolling	✓				
Various	✓				
<b>Recreational</b>					
Hook and Line		✓	✓	✓	✓
Spearfishing		✓	✓	✓	✓

<b>Management Methods</b>					
	<b>Commonwealth</b>	<b>New South Wales</b>	<b>Queensland</b>	<b>South Australia</b>	<b>Tasmania</b>
<b>Commercial</b>					
Area restrictions	✓				
Catch limits	✓				
Individual transferable quota	✓				
<b>Recreational</b>					
Bag limits		✓	✓	✓	✓

<b>Catch</b>					
	<b>Commonwealth</b>	<b>New South Wales</b>	<b>South Australia</b>	<b>Tasmania</b>	<b>Victoria</b>
<b>Commercial</b>	0 t				
<b>Indigenous</b>		Unknown	Unknown	Unknown	Unknown

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Victoria	Western Australia
✓	✓
✓	✓

Victoria	Western Australia
✓	✓

Western Australia
Unknown

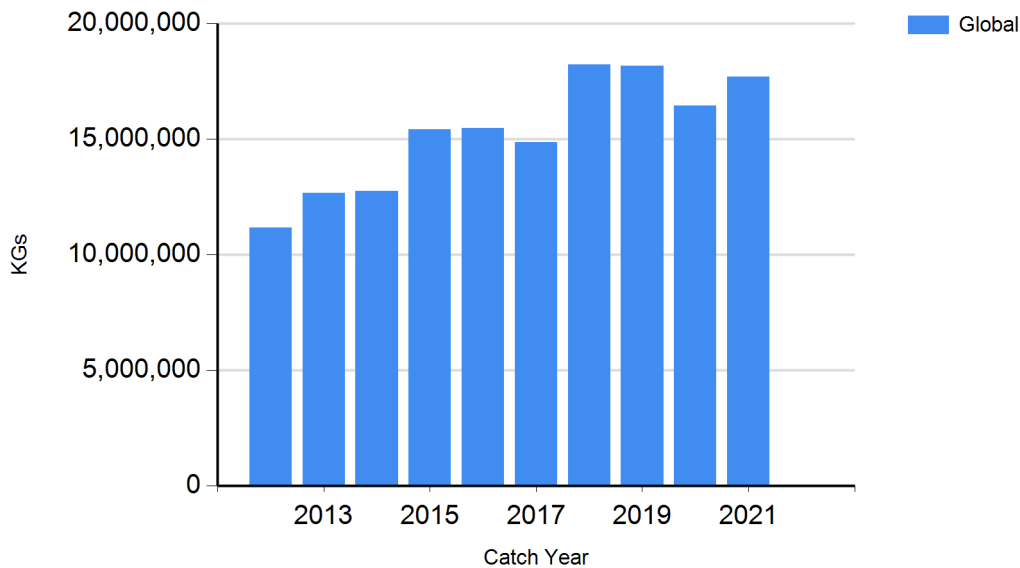
**Commonwealth – Recreational.** The Australian Government does not manage recreational fishing in Commonwealth waters. Recreational fishing in Commonwealth waters is managed by the state or territory immediately adjacent to those waters, under its management regulations. Recreational catches reported here are from surveys.

**States – Recreational and Indigenous.** Recreational and Indigenous fishing sectors reported here are New South Wales, Queensland, South Australia, Tasmania, Victoria and Western Australia. Measures listed here exist in at least one of these jurisdictions.

**Commonwealth – Indigenous.** The Australian Government does not manage non-commercial Indigenous fishing in Commonwealth waters, with the exception of the Torres Strait. In general, non-commercial Indigenous fishing in Commonwealth waters is managed by the state or territory immediately adjacent to those waters.

**Commonwealth – Commercial (Catch).** Catches reported for the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) are for 2021 calendar year, the most recent year available.

### CATCH CHART



Commercial catch of Southern Bluefin Tuna - note confidential catch not shown.

References	
Evans et al. 2012	Evans, K, Patterson, TA, Reid, H and Harley, SJ 2012, Reproductive schedules in southern bluefin tuna: Are current assumptions appropriate? PLoS One, 7(4):e34550.
Patterson et al. 2018	Patterson, TA, Eveson, JP, Hartog, JR, Evans, K, Cooper, S, Lansdell, M, Hobday, AJ and Davies, CJ 2018, Migration dynamics of juvenile southern bluefin tuna, Scientific Reports, 8: 14553.
Farley et al. 2014	Farley, JH, Eveson, JP, Davis, TLO, Andamari, R, Proctor, CH, Nugraha, B and Davies, CR 2014, Demographic structure, sex ration and growth rates of southern bluefin tuna ( <i>Thunnus maccoyii</i> ) on the spawning ground, PLoS One 9(5): e96392.
Farley et al. 2015	Farley, JH, David, TLO, Bravington, MV, Andamari, R and Davies, CR 2015, Spawning dynamics and size related trends in reproductive parameters of southern bluefin tuna, <i>Thunnus maccoyii</i> , PLoS One 10(5): e0125744.

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Proctor et al 1995	Proctor, CH, Thresher, RE, Gunn, JS, Mills, DJ, Harrowfield, IR and Sie, SH 1995, Stock structure of the Southern Bluefin Tuna, <i>Thunnus maccoyii</i> : an investigation based on probe micro analysis of otolith composition, <i>Marine Biology</i> , 122(4): 511–526.
Patterson and Dylewski 2022	Patterson, H and Dylewski, M 2022, Southern Bluefin Tuna Fishery, in H Patterson, Bromhead, D, Galeano, D, Larcombe, J, Timmiss, T, Woodhams, J and R Curtotti (eds), <i>Fishery status reports 2022</i> , Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.
Davis et al 2001	Davis, T, Farley, J and Gunn, J 2001, Size and age at 50% maturity in SBT: an integrated view from published information and new data from the spawning ground, CCSBT-SC/0108/16, Tokyo, Japan, 28–31 August 2001.
Tracey et al. 2020	Tracey, SR, Lyle, JM, Stark, K, Gray, S, Moore, A, Twiname, S and Wotherspoon, S 2020, National survey of recreational fishing for southern bluefin tuna in Australia 2018–19, University of Tasmania, Hobart.
CCSBT 2021	Commission for the Conservation of Southern Bluefin Tuna 2021, Report of the twenty sixth meeting of the Scientific Committee, online meeting, 23–31 August 2021.
Hillary et al. 2020	Hillary, RM, Preece, AL, Davies CR, Takahashi, N and Itoh, T 2020, The assessment of stock status in 2020, paper CCSBT-ESC/2008/12 (Rev.2) for the twenty fifth meeting of the CCSBT Scientific Committee, 31 August–5 September 2020, online meeting.
CCSBT 2020	Commission for the Conservation of Southern Bluefin Tuna 2020, Report of the twenty fifth meeting of the Scientific Committee, online meeting, 7 September 2020
Sulistyaningsih et al. 2019	Sulistyaningsih, R, Proctor, C and Farley, J 2019, Update on the length and age distribution of southern bluefin tuna (SBT) in the Indonesian longline catch, CCSBT-ESC/1909/09, Cape Town, South Africa, 2–7 September 2019.