

Yellowfin Tuna (2016)

Thunnus albacares



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Fisheries	Stock status	Indicators
Commonwealth	Indian Ocean	IOTC, WTBF	Transitional-depleting	Spawning stock biomass, fishing mortality
Commonwealth	Western and central Pacific Ocean	ETBF, WCPFC	Sustainable	Spawning stock biomass, fishing mortality

ETBF Eastern Tuna and Billfish Fishery (CTH), IOTC Indian Ocean Tuna Commission (CTH), WCPFC Western and Central Pacific Fisheries Commission (CTH), WTBF Western Tuna Billfish Fishery (CTH)

STOCK STRUCTURE

Yellowfin Tuna in the Indian Ocean, and western and central Pacific Ocean are considered to be two distinct biological stocks, which are managed under separate regional fisheries management organisations. In the Indian Ocean, although there is some evidence for stock structure that requires further investigation[1], tagging studies have indicated substantial movement of Yellowfin Tuna, supporting the assumption of a single biological stock[2]. Currently, a single biological stock is considered to exist in the western and central Pacific Ocean[3]. However, a recent study has provided evidence of genetically distinct populations of Yellowfin Tuna at three sites in the Pacific Ocean[4]. Further and more detailed studies of Yellowfin Tuna stock structure are underway. The Indian Ocean biological stock falls under the jurisdiction of the Indian Ocean Tuna Commission; and the Western and central Pacific Ocean stock falls under the jurisdiction of the Western and Central Pacific Fisheries Commission. These two commissions are intergovernmental organisations established to manage a number of highly migratory fish species.

Here, assessment of stock status is presented at the biological stock level—Indian Ocean and Western and central Pacific Ocean.

STOCK STATUS

Indian Ocean The Indian Ocean biological stock is fished by Australian fishers endorsed to fish in the Western Tuna and Billfish Fishery (Commonwealth), and numerous other international jurisdictions. The assessments undertaken by the Indian Ocean

Tuna Commission take into account information from all jurisdictions.

In the Indian Ocean, the most recent assessment[5] estimates that the biomass in 2014 of the biological stock was 23 per cent of unfished levels. The biological stock is not considered to be recruitment overfished[6]. However, the assessments estimated that fishing mortality was well above the level associated with maximum sustainable yield (MSY) (134 per cent of fishing mortality at MSY; range 102–167 per cent). This level of fishing mortality is likely to cause the biological stock to become recruitment overfished.

Based on the evidence provided above, the Indian Ocean biological stock is classified as **transitional–depleting**.

Western and central Pacific Ocean

The Western and central Pacific Ocean biological stock is fished by Australian fishers endorsed to fish in the Eastern Tuna and Billfish Fishery (Commonwealth), and numerous other international jurisdictions. The assessments undertaken for the Western and Central Pacific Fisheries Commission take into account information from all jurisdictions.

In the western and central Pacific Ocean, the most recent assessment[3] estimates that the 2012 biomass was 38 per cent of the unfished level. The biological stock is not considered to be recruitment overfished[7]. This assessment also estimated that current fishing mortality was below the level associated with MSY (72 per cent of mortality at MSY; range 58–90 per cent). This level of fishing mortality is unlikely to cause the biological stock to become recruitment overfished[7].

Based on the evidence provided above, the Western and central Pacific Ocean biological stock is classified as a **sustainable stock**.

BIOLOGY

Yellowfin Tuna biology[8]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Yellowfin Tuna	9 years; ~1 800 mm <u>FL</u>	~2 years; 1 000 mm <u>FL</u>

DISTRIBUTION



Distribution of reported commercial catch of Yellowfin Tuna

TABLES

Commercial Catch Methods	Commonwealth
Beach Seine	✓
Cast Net	✓
Danish Seine	✓
Demersal Longline	✓
Gillnet	✓
Hand Line, Hand Reel or Powered Reels	✓
Hook and Line	✓
Lift nets	✓
Otter Trawl	✓
Pelagic Gillnet	✓
Pelagic Longline	✓
Pole and Line	✓
Purse Seine	✓
Traps and Pots	✓
Trolling	✓
Unspecified	✓
Various	✓
Fishing	

methods	
	Commonwealth
Commercial	
Gillnet	✓
Hand Line, Hand Reel or Powered Reels	✓
Pelagic Longline	✓
Pole and Line	✓
Purse Seine	✓
Trolling	✓
Various	✓
Recreational	
Hand Line, Hand Reel or Powered Reels	✓
Spearfishing	✓
Management Methods	
	Commonwealth
Commercial	
Area restriction s	✓
Catch limits	✓
Gear restriction s	✓
Individual transferab le quota	✓
Limited entry	✓
Recreational	
Bag limits	✓
Boat limits	✓
Active Vessels	
	Commonwealth
	39 Vessel in ETBF, 2 Vessel in WTBF,

ETBF Eastern Tuna and Billfish Fishery(CTH)

WTBF Western Tuna Billfish Fishery(CTH)

Catch	Commonwealth
Commercial	2177t in ETBF, 406877t in IOTC, 573724t in WCPFC, 82t in WTBF,
Indigenous	Unknown
Recreational	Unknown

ETBF Eastern Tuna and Billfish Fishery (CTH), IOTC Indian Ocean Tuna Commission (CTH), WCPFC Western and Central Pacific Fisheries Commission (CTH), WTBF Western Tuna Billfish Fishery (CTH),

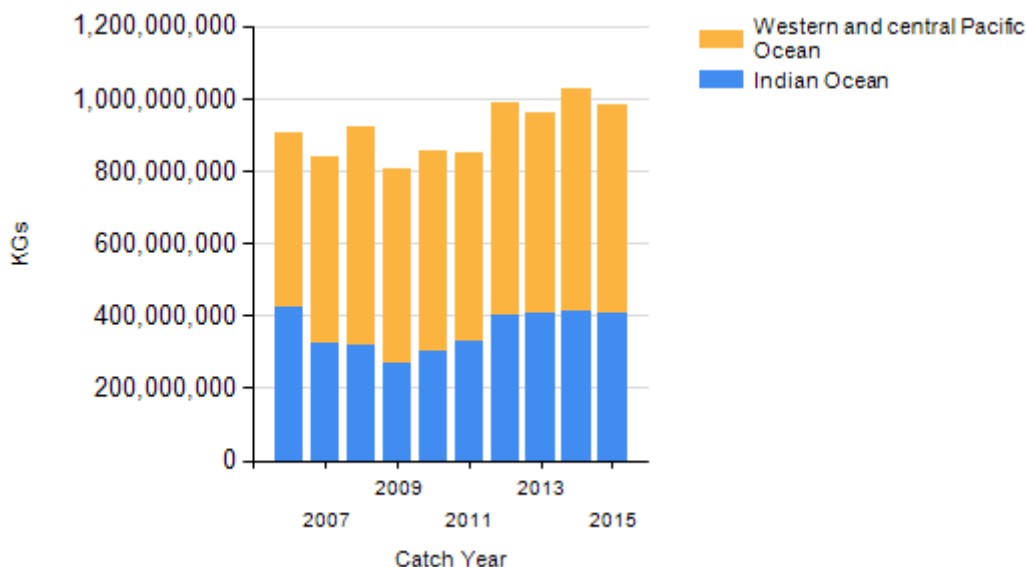
a Commonwealth - Recreational The Australian Government does not manage recreational fishing in Commonwealth waters. Recreational fishing in Commonwealth waters is managed by the state or territory immediately adjacent to those waters, under its management regulations.

b Recreational Recreational and Indigenous fishing sectors in the Indian Ocean are Western Australia, South Australia and Victoria; recreational sectors in the Pacific Ocean are Queensland, New South Wales and Tasmania. A tick indicates that a measure exists in one of these jurisdictions.

c 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.

d Commercial (catch) Catches reported for the Indian Ocean Tuna Commission and Western and Central Pacific Fisheries Commission are for 2014, the most recent year available.

CATCH CHART



Commercial catch of Yellowfin Tuna - note confidential catch not shown

EFFECTS OF FISHING ON THE MARINE ENVIRONMENT

- Following completion of ecological risk assessments (levels 1–3) in the Western Tuna and Billfish Fishery (Commonwealth) (WTBF), no species were identified as high

risk[9]. In the Eastern Tuna and Billfish Fishery (Commonwealth) (ETBF), a total of nine species were identified as being at high risk or precautionary high risk. This is the priority list of species for attention under the Eastern Tuna and Billfish Fishery ecological risk management strategy; it includes two species of sunfish, four species of shark, two species of cetacean and one species of marine turtle[10,11].

- No target species, ecological communities or habitats were assessed to be at high risk from the effects of fishing in the ETBF or the WTBF[9–11].
- Australia implements regulations to minimise the environmental impact of fisheries for tuna and tuna-like species on pelagic ecosystems, specifically on seabirds, sea turtles and sharks[12,13].
- Australia has prohibited shark finning in longline fisheries managed by the Commonwealth and has also prohibited the use of wire leaders in these fisheries, to reduce fishery impacts on sharks[12,13].
- Both the Indian Ocean Tuna Commission[14] and the Western and Central Pacific Fisheries Commission[15] have passed conservation and management measures that are broadly consistent with each other and with Australia’s domestic requirements.

ENVIRONMENTAL EFFECTS on Yellowfin Tuna

- The distribution and abundance of tuna can be affected by environmental factors[16,17]. For example, seasonal changes in the abundance of Bigeye Tuna and Yellowfin Tuna on the east coast of Australia are linked to the expansion and contraction of the East Australian Current[18].

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