

Bigeye Tuna (2020)

Thunnus obesus



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Commonwealth	Indian Ocean	Depleting	Spawning stock biomass, fishing mortality
Commonwealth	Pacific Ocean	Sustainable	Spawning stock biomass, fishing mortality

STOCK STRUCTURE

Bigeye tuna in the Indian Ocean, and Western and Central Pacific Ocean are considered to be two distinct biological stocks, and are managed by separate regional fisheries management organisations. The Indian Ocean stock falls under the jurisdiction of the Indian Ocean Tuna Commission (IOTC) while the Western and Central Pacific Ocean stock under the jurisdiction of the Western and Central Pacific Fisheries Commission (WCPFC). These two commissions are international organisations established to manage a number of highly migratory fish species within their defined geographic ranges.

In the Indian Ocean, tagging and genetic studies have not provided evidence of more than a single biological stock [Chiang et al. 2008, IOTC 2019]. Genetic studies have also indicated a single biological stock across the Pacific Ocean [Grewe and Hampton 1998].

Here, stock status is presented at the biological stock level—Indian Ocean and 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 members of the Indian Ocean Tuna Commission. The assessments undertaken by the Indian Ocean Tuna Commission take into account information from all jurisdictions that take Bigeye Tuna in this region.

In the Indian Ocean, the most recent assessment [IOTC 2019] estimates that spawning stock biomass in 2018 was 31 per cent of the unfished level (80 per cent confidence interval 21–34 per cent). The biological stock is not considered to be recruitment impaired [Williams et al. 2020]. This assessment also

estimated that the current fishing mortality was above the level associated with maximum sustainable yield (MSY) (120 per cent of fishing mortality at MSY; 80 per cent confidence interval 70–205 per cent). This level of fishing mortality is likely to cause the biological stock to become recruitment impaired [Williams et al. 2020].

On the basis of the evidence provided above, the Indian Ocean biological stock is classified as a **depleting stock**.

Pacific Ocean

The Pacific Ocean biological stock is fished by Australian fishers endorsed to operate in the Eastern Tuna and Billfish Fishery (Commonwealth), and members of the Western and Central Pacific Fisheries Commission. The assessments undertaken for the Western and Central Pacific Fisheries Commission take into account information from all jurisdictions that take Bigeye Tuna in this region.

In the Pacific Ocean, the most recent assessment in 2017 [McKechnie et al. 2017] was re-evaluated in 2018 using a new growth curve [Vincent et al. 2018], but maintaining the other inputs of the 2017 assessment, and estimates that the recent median spawning biomass was 36 per cent of the unfished level (range 30–41 per cent). There was a zero probability that the recent spawning biomass breached the limit reference point [WCPFC 2019]. The biological stock is not considered to be recruitment impaired [WCPFC 2019, Larcombe et al. 2020]. This assessment also estimated that the median recent fishing mortality was 77 per cent of the level associated with MSY (range 67–93 per cent). This level of fishing mortality is unlikely to cause the biological stock to become recruitment impaired [Larcombe et al. 2020, WCPFC 2019].

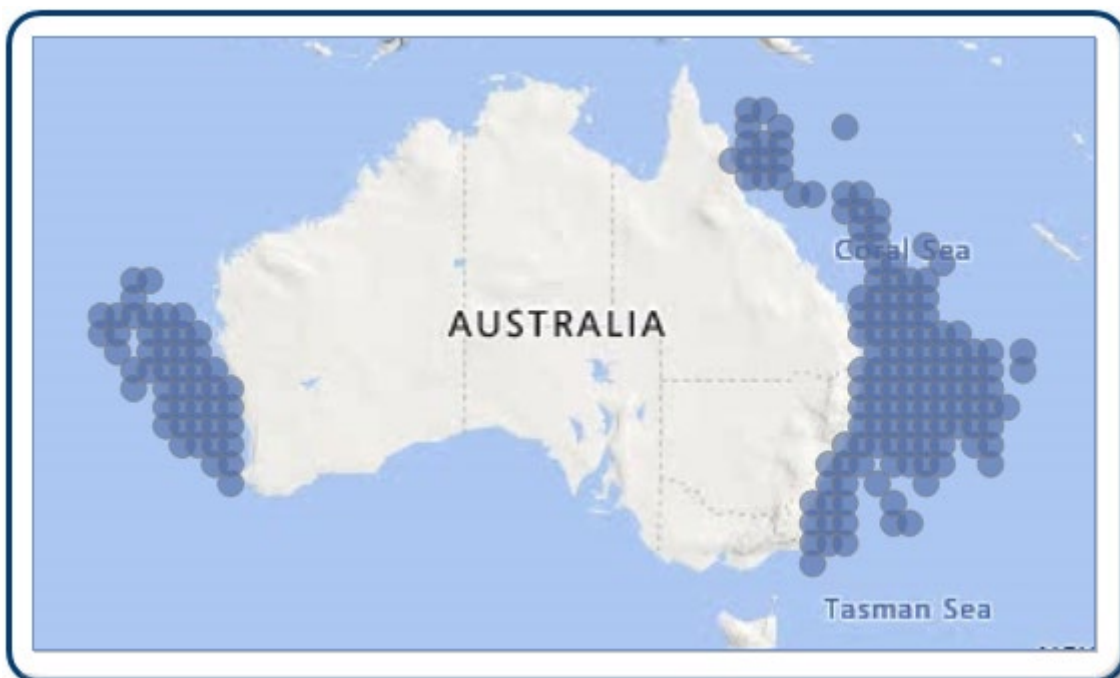
On the basis of the evidence provided above, the Pacific Ocean biological stock is classified as a **sustainable stock**.

BIOLOGY

Bigeye Tuna biology [Farley et al. 2006, 2017, 2018, Froese and Pauly 2009]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Bigeye Tuna	~16 years, ~2000 mm FL	~3 years, ~1000 mm FL

DISTRIBUTION



Distribution of reported commercial catch of Bigeye Tuna

TABLES

Fishing methods	Commonwealth	New South Wales	Queensland	Victoria	Western Australia
Commercial					
Longline (Unspecified)	✓				
Recreational					
Hook and Line		✓	✓	✓	✓

Management Methods	Commonwealth
Commercial	
Area restrictions	✓
Catch limits	✓
Gear restrictions	✓
Individual transferable quota	✓
Limited entry	✓
Recreational	
Bag limits	✓

Catch	Commonwealth	New South Wales	Queensland	Victoria	Western Australia
Commercial	322 t				
Recreational		Unknown	Unknown	Unknown	Unknown

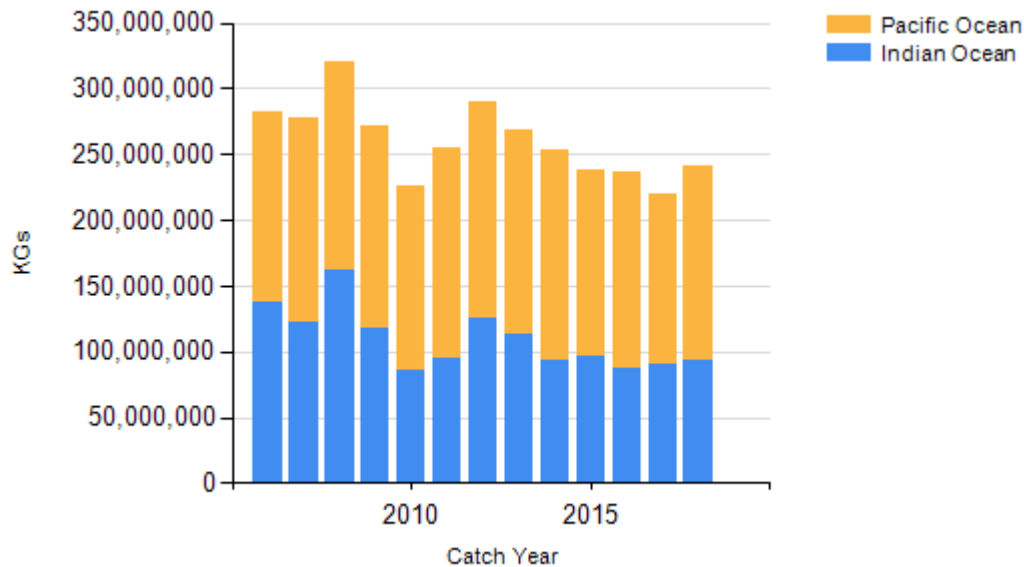
Commonwealth – Commercial (catch) Catches reported for the Indian Ocean Tuna Commission and Western and Central Pacific Fisheries Commission are for 2018, the most recent year available; data for the Eastern Tuna and Billfish Fishery and Western Tuna Billfish Fishery are for 2018/2019.

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.

Commonwealth – Recreational and Indigenous 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. Measures listed here exist in 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.

CATCH CHART



Commercial catch of Bigeye Tuna - note confidential catch not shown

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