

# Albacore (2023)

*Thunnus alalunga*



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## STOCK STATUS OVERVIEW

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

## STOCK STRUCTURE

Albacore in the Indian Ocean and South Pacific Ocean are considered to be two distinct biological stocks and are managed by separate regional fisheries management organisations. The single Indian Ocean stock falls under the jurisdiction of the Indian Ocean Tuna Commission (IOTC) while the South Pacific Ocean stock falls under the jurisdiction of the Western and Central Pacific Fisheries Commission (WCPFC) and the Inter American Tropical Tuna Commission (IATTC), separated at 130–150° West. These commissions are international organisations established to manage highly migratory fish species within their defined geographic ranges.

Albacore are distributed globally but migrate within ocean basins in association with oceanic gyres. Given that the Indian Ocean contains only a single oceanic gyre, a single stock of Albacore has been assumed for the Indian Ocean assessments [Rice 2022]. This assumption is supported by recent genetics and otolith microchemistry research [Davies et al. 2020]. A separate genetic and morphometric study has also identified distinct stocks of Albacore in the southwest Indian Ocean and the southeast Atlantic Ocean [Nikolic et al. 2020].

In the Pacific Ocean, two distinct stocks of Albacore (North Pacific and South Pacific) are thought to exist, generally associated with the two oceanic gyres north and south of the equator [Nikolic et al. 2017]. There is some recent evidence for genetic structuring in the western and central south Pacific Ocean [Anderson et al. 2019], however Albacore in the South Pacific Ocean are still considered to be one stock.

Here, stock status is presented at the biological stock level for the two stocks fished by the

Australian fisheries—Indian Ocean and South 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), as well as by vessels from numerous other international jurisdictions.

The assessments undertaken by the Indian Ocean Tuna Commission take into account information from all jurisdictions, including the high seas. The most recent assessment [IOTC 2022] estimates that spawning biomass in 2020 was 36% (80% confidence interval 26–45%) of the assumed unfished level. This is above the Commonwealth limit reference point (LRP) of 20% of the unfished level. The biological stock is therefore not considered to be recruitment impaired. The assessment estimated that fishing mortality in 2020 was 68% (80% confidence interval 42–94%) of the level that would produce maximum sustainable yield (MSY). This level of fishing mortality is unlikely to cause the stock to become recruitment impaired.

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

### South Pacific Ocean

The South Pacific Ocean biological stock is fished by Australian fishers endorsed to fish in the Eastern Tuna and Billfish Fishery (Commonwealth), as well as by vessels from other members of the Western and Central Pacific Fisheries Commission.

The assessments undertaken for the Western and Central Pacific Fisheries Commission account for information from all jurisdictions. The most recent assessment [Castillo-Jordán et al. 2021] covers the entire Pacific Ocean south of the equator, while previous assessments did not include the eastern Pacific Ocean.

The recent (2016–2019) depletion levels estimated by the 2021 assessment are the lowest across the model time period. The median recent spawning biomass was 52% of the levels predicted to occur in the absence of fishing (80% confidence interval 41–57% across the grid of models used) [WCPFC 2021]. The recent depletion estimate (2016–2019) is above the Commonwealth limit reference point (LRP) of 20% of the unfished level. The current biological stock is, therefore, not considered to be recruitment impaired.

Fishing mortality of adult South Pacific Albacore is estimated to have increased over most of the assessment period, with a record high in the last year of assessment (2019). The median 2016–2019 fishing mortality was 24% of the level that would produce MSY (80% confidence interval 15–37%). This level of fishing mortality is unlikely to cause the stock to become recruitment impaired.

Further to these assessment results, stochastic projections that assume continued fishing at recent (2016–2019) levels show a steep and rapid future decline in biomass towards the 20% LRP in 2021, followed by an increase in biomass thereafter [WCPFC 2021]. However, more recent analysis suggests the magnitude of this projected decline is exaggerated [Scott et al. 2023].

On the basis of the evidence provided above, the South Pacific Ocean biological

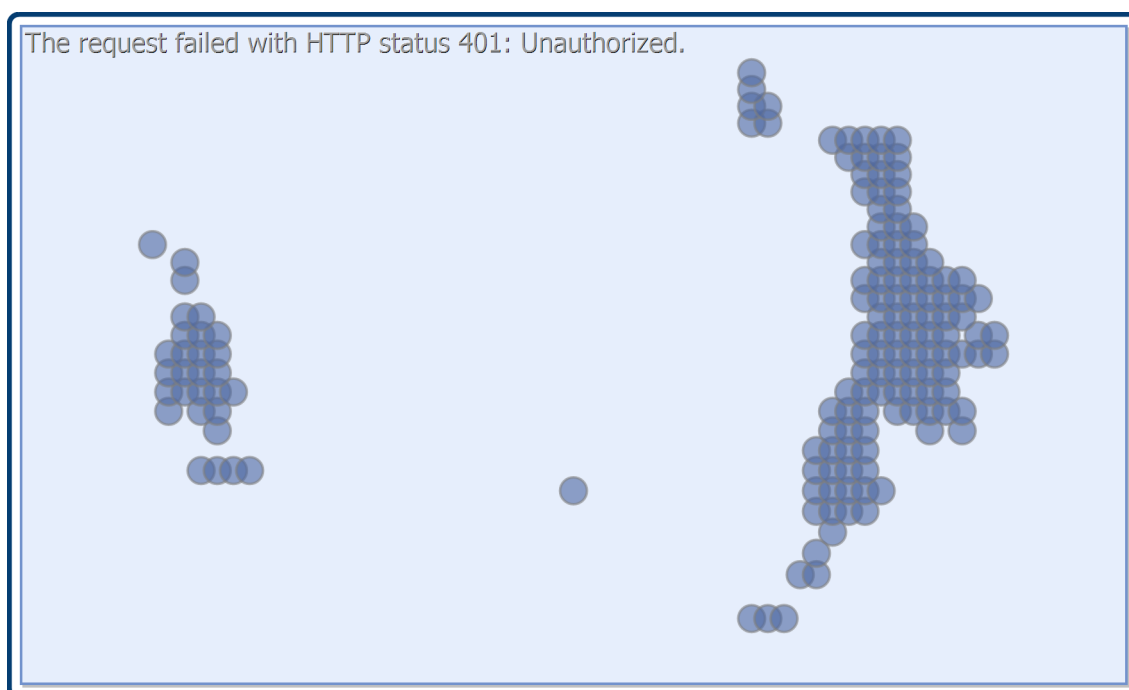
stock is classified as a **sustainable stock**.

## BIOLOGY

**Albacore biology** [Farley et al. 2012; Williams et al. 2012; Farley et al. 2014]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Albacore	14+ years, approximately 1,270 mm FL	4.5 years, approximately 870 mm FL

## DISTRIBUTION



Distribution of reported commercial catch of Albacore in 2021

## TABLES

Fishing methods	Commonwealth	New South Wales	South Australia	Tasmania	Victoria
<b>Commercial</b>					
Danish Seine	✓				
Gillnet	✓				
Handline	✓				
Hook and Line	✓				
Lift nets	✓				

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Longline (Unspecified)	✓				
Pole and Line	✓				
Purse Seine	✓				
Trolling	✓				
Unspecified	✓				
Various	✓				
<b>Recreational</b>					
Hook and Line		✓	✓	✓	✓

Management Methods	
	Commonwealth
<b>Commercial</b>	
Area restrictions	✓
Bag limits	✓
Catch limits	✓
Gear restrictions	✓
Individual transferable quota	✓
Limited entry	✓

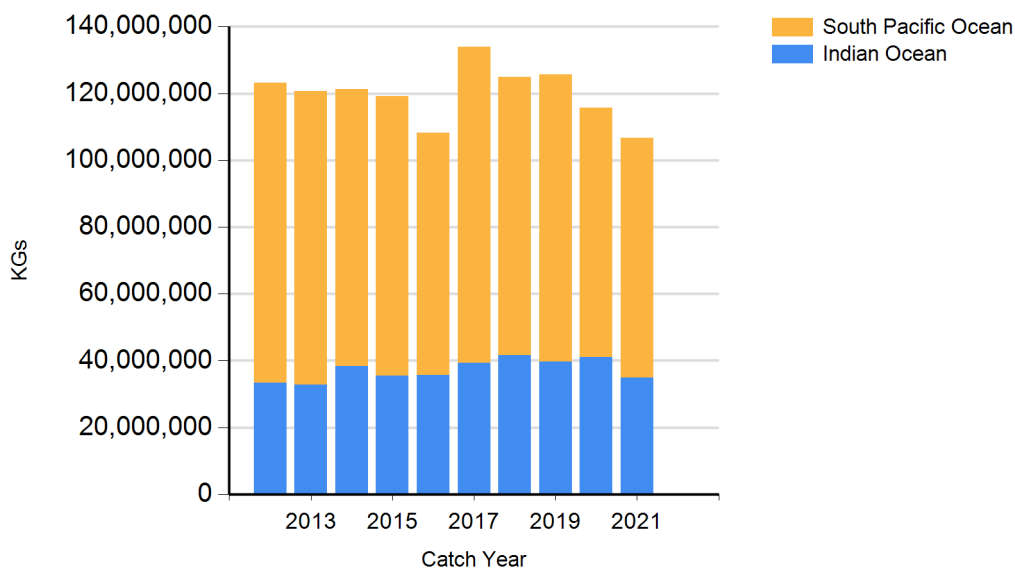
Catch					
	Commonwealth	New South Wales	South Australia	Tasmania	Victoria
<b>Commercial</b>	0 t				
<b>Recreational</b>		unknown	unknown	unknown	unknown

**Commonwealth – Commercial (Catch).** Catches reported for the Indian Ocean Tuna Commission and Western and Central Pacific Fisheries Commission are for 2021, the most recent year available.

**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 – 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 Albacore - note confidential catch not shown

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