

# Albacore (2018)

*Thunnus alalunga*



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## STOCK STATUS OVERVIEW

Jurisdiction	Stock	Fisheries	Stock status	Indicators
Commonwealth	Indian Ocean	IOTC, WTBF	Sustainable	Spawning stock biomass, fishing mortality
Commonwealth	South 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

Albacore in the Indian and Pacific Oceans are considered to be separate biological stocks and are managed under separate regional fisheries management organisations. Genetic work indicates that Albacore from the Indian Ocean and Atlantic Ocean are genetically indistinguishable [Montes et al. 2012], possibly due to some degree of mixing in the waters off South Africa. Albacore 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 is assumed for the Indian Ocean assessments [Langley and Hoyle 2016]. The two oceanic gyres in the Pacific Ocean are assumed to separate Albacore into a North Pacific and South Pacific stock, which are assessed as two separate stocks [Nikolic et al. 2017].

The Indian Ocean biological stock falls under the jurisdiction of the Indian Ocean Tuna Commission; and the South 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 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 vessels from numerous other international jurisdictions. Albacore catches in the Western Tuna and Billfish Fishery have been low, peaking at 115 tonnes (t) in 1994 and again at 94 t in 2001. Annual catches in this fishery have been below 30 t since 2004. Total international catches in the Indian Ocean Tuna Commission area of

competence peaked at over 43 000 t in 2010, and have fluctuated between 30 000 t and 41 000 t since.

The assessments undertaken by the Indian Ocean Tuna Commission take into account information from all jurisdictions, including the high seas. The most recent assessment [Langley and Hoyle 2016] estimates that spawning biomass in 2014 was 37 per cent (80 per cent confidence interval 28–46 per cent) of the 1950 (assumed unfished) level. The biological stock is not considered to be recruitment impaired [Williams et al. 2018]. The assessment estimated that fishing mortality in 2014 was 85 per cent of the level that would produce maximum sustainable yield (*MSY*) (80 per cent confidence interval 57–112 per cent). This level of fishing mortality is unlikely to cause the biological stock to become recruitment impaired [Williams et al. 2018].

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 vessels from numerous other international jurisdictions. Annual catches in the Eastern Tuna and Billfish Fishery have declined from over 2 500 t in 2006 to 709 t in 2012. Since 2012, annual catches in this fishery have increased steadily to 992 t in 2017. Total international catches in the South Pacific have been stable at over 80 000 t since 2012 but decreased to 68 449 t in 2016.

The assessments undertaken for the Western and Central Pacific Fisheries Commission take into account information from all jurisdictions. The most recent assessment [Tremblay-Boyer et al. 2018] estimates that spawning biomass in 2016 was 52 per cent of unfished biomass (80 per cent confidence interval 37–69 per cent across the grid of models used). The biological stock is, therefore, not considered to be recruitment impaired [Larcombe et al. 2018]. The assessment estimated fishing mortality (2012–15 average) to be 20 per cent of the fishing mortality that will support the *MSY* (80 per cent confidence interval 8–41 per cent across the grid of models used). This level of fishing mortality is unlikely to cause the biological stock to become recruitment impaired [Western and Central Pacific Fisheries Commission 2018].

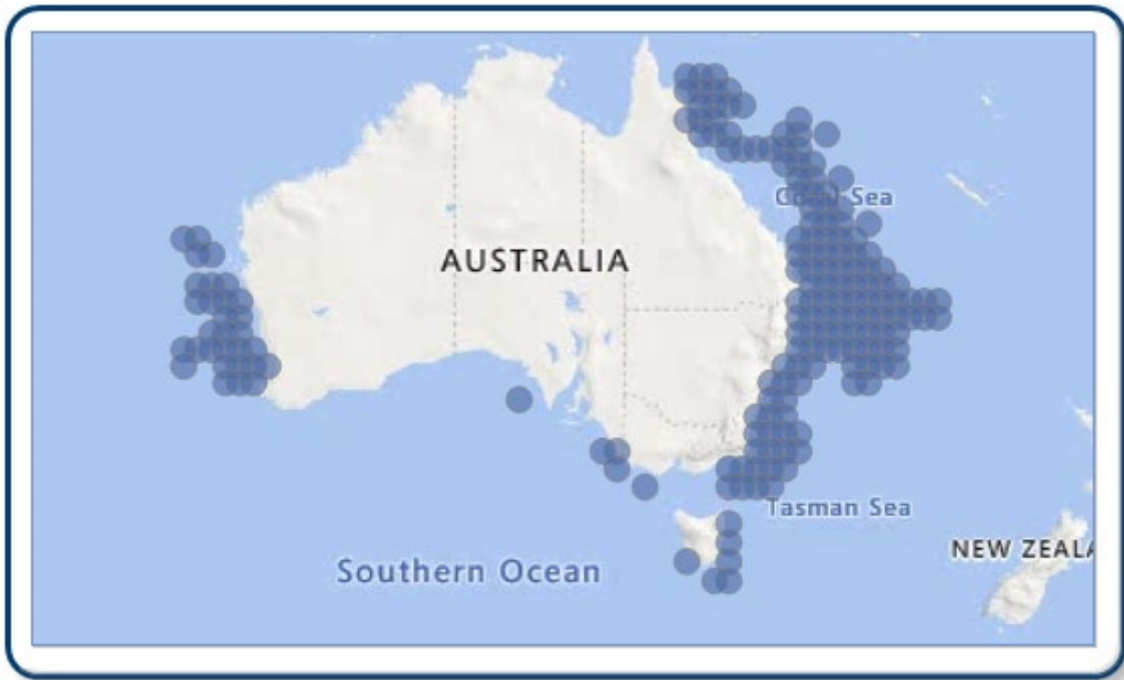
On the basis of the evidence provided above, the South Pacific Ocean biological stock is classified as a **sustainable stock**.

**BIOLOGY**

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

Species	Longevity / Maximum Size	Maturity (50 per cent)
Albacore	14+ years, ~1270 mm FL	4.5 years, ~870 mm FL

**DISTRIBUTION**



Distribution of reported commercial catch of Albacore

**TABLES**

<b>Commercial Catch Methods</b>	<b>Commonwealth</b>
Beach Seine	✓
Danish Seine	✓
Gillnet	✓
Hand Line, Hand Reel or Powered Reels	✓
Hook and Line	✓
Lift nets	✓
Pelagic Longline	✓
Pole and Line	✓
Purse Seine	✓
Rod and reel	✓
Trolling	✓
Unspecified	✓
Various	✓

<b>Fishing methods</b>	<b>Commonwealth</b>
<b>Commercial</b>	
Gillnet	✓
Hand Line, Hand Reel or Powered Reels	✓

Hook and Line	✓
Pelagic Longline	✓
Pole and Line	✓
Trolling	✓
Various	✓
<b>Recreational</b>	
Handline	✓
Rod and reel	✓
Spearfishing	✓

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

<b>Active Vessels</b>	
	<b>Commonwealth</b>
	40 Vessels in ETBF, 3 Vessels in WTBF,

ETBF Eastern Tuna and Billfish Fishery(CTH)

WTBF Western Tuna Billfish Fishery(CTH)

<b>Catch</b>	
	<b>Commonwealth</b>
<b>Commercial</b>	992t in ETBF, 37344.9t in IOTC, 93311t in WCPFC, 16t in WTBF,
<b>Indigenous</b>	Unknown
<b>Recreational</b>	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),

**Commonwealth – Commercial (catch)** Catches reported for the Indian Ocean Tuna

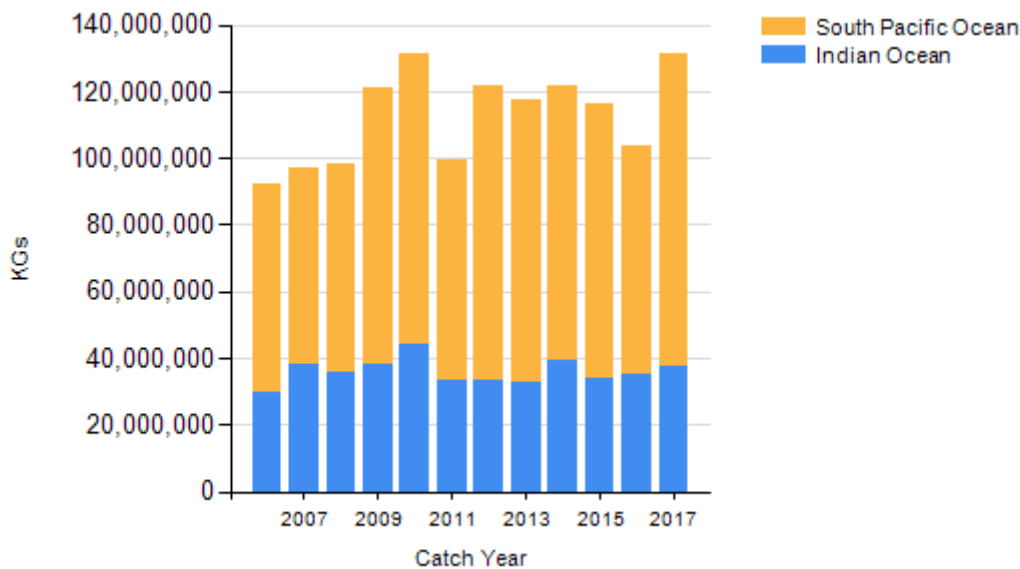
Commission and Western and Central Pacific Fisheries Commission are for 2016, the most recent year available. WCPFC catches are for the South Pacific Ocean (south of the equator); data for ETBF and WTBF are for 2017.

**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 South Australia, Victoria and Western Australia. Recreational sectors in the Pacific Ocean are New South Wales, Queensland and Tasmania. Measures listed here exist in at least one of the 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 Albacore - note confidential catch not shown

### EFFECTS OF FISHING ON THE MARINE ENVIRONMENT

#### ENVIRONMENTAL EFFECTS on Albacore

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9	Williams, AJ, Farley, JH, Hoyle, SD, Davies, CR and Nicol SJ 2012, Spatial and sex-specific variation in growth of albacore tuna ( <i>Thunnus alalunga</i> ) across the South Pacific Ocean, <i>PLoS ONE</i> 7(6): e39318. doi:10.1371/journal.pone.0039318.
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