

# Albacore (2016)

*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 two separate biological stocks and are managed under separate regional fisheries management organisations. Genetic work has indicated that Albacore from the Indian Ocean and Atlantic Ocean are genetically indistinguishable[1], 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[2]. In the Pacific Ocean, North Pacific and South Pacific stocks are assumed to occur, associated with the two oceanic gyres in the Pacific Ocean. These stocks that are assessed separately[3,4].

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. The assessments undertaken by

the Indian Ocean Tuna Commission take into account information from all jurisdictions.

In the Indian Ocean, the most recent assessments[7] estimate that spawning biomass in 2012 was 21–43 per cent of the 1950 (assumed unfished) level. The biological stock is not considered to be recruitment overfished[8]. This assessment estimated that fishing mortality in 2012 was at or below the level that would produce maximum sustainable yield (MSY) (69–94 per cent of fishing mortality at MSY). This level of fishing mortality is unlikely to cause the biological stock to become recruitment overfished[8].

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. The assessments undertaken for the Western and Central Pacific Fisheries Commission take into account information from all jurisdictions.

In the South Pacific Ocean, the most recent assessment[9] estimates that spawning biomass in 2013 was 30–60 per cent of unfished biomass. The biological stock is therefore not considered to be recruitment overfished[10]. The assessment estimated fishing mortality (2009–12 average) to be below the level that would produce maximum sustainable yield (13–62 per cent of fishing mortality at MSY). This level of fishing mortality is unlikely to cause the biological stock to become recruitment overfished[9].

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

## BIOLOGY

Albacore biology[11–13]

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

## DISTRIBUTION



Distribution of reported commercial catch of Albacore

**TABLES**

Commercial Catch Methods	Commonwealth
Danish Seine	✓
Demersal Longline	✓
Gillnet	✓
Hand Line, Hand Reel or Powered Reels	✓
Lift nets	✓
Pelagic Longline	✓
Pole and Line	✓
Purse Seine	✓
Trolling	✓
Unspecified	✓
Various	✓

Fishing methods	Commonwealth
Commercial	
Gillnet	✓
Hand Line, Hand Reel or	✓

Powered Reels	
Pelagic Longline	✓
Pole and Line	✓
Purse Seine	✓
Trolling	✓
Various	✓
<b>Recreational</b>	
Hand Line, Hand Reel or Powered Reels	✓
Spearfishing	✓

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

<b>Active Vessels</b>	
	<b>Commonwealth</b>
	40 Vessel in ETBF, 2 Vessel in WTBF,

ETBF Eastern Tuna and Billfish Fishery(CTH)

WTBF Western Tuna Billfish Fishery(CTH)

<b>Catch</b>	
	<b>Commonwealth</b>
<b>Commercial</b>	949t in ETBF, 34980t in IOTC, 67357t in WCPFC, 27t 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),

**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.

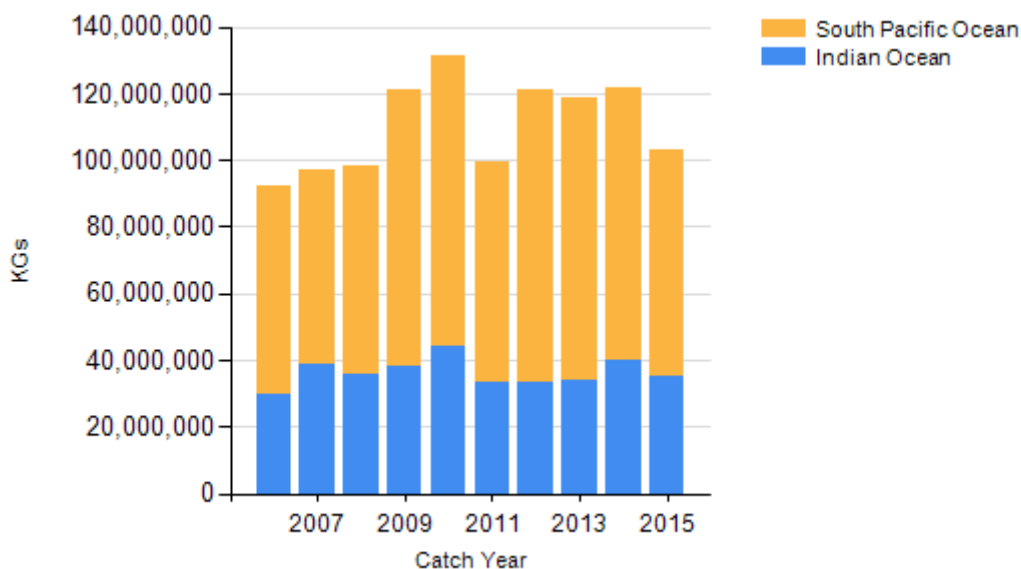
**b Commonwealth** – Recreational and Indigenous Recreational and Indigenous fishing sectors in the Indian Ocean are South Australia, Victoria and Western Australia. Recreational sectors in the Pacific Ocean are New South Wales, Queensland and Tasmania. A tick indicates that a measure exists in at least 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 Commonwealth** – 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.

**e Commonwealth** – Commercial (catch) WCPFC catches are for the entire South Pacific Ocean (south of the equator).

## CATCH CHART



Commercial catch of Albacore - note confidential catch not shown a

## 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[14]. In the Eastern Tuna and Billfish Fishery (Commonwealth) (ETBF), a combined 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[15,16].
- 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[14][–][16].

- 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[17,18].
- Australia has prohibited shark finning in longline fisheries managed by the Commonwealth and has also prohibited the use of wire leaders to reduce fishing mortality of sharks[17,18].
- Both the Indian Ocean Tuna Commission[19] and the Western and Central Pacific Fisheries Commission[20] have passed conservation and management measures that are broadly consistent with each other and with Australia's domestic management arrangements.

#### ENVIRONMENTAL EFFECTS on Albacore

- The distribution and abundance of Albacore are known to be affected by environmental factors[21,22], particularly ocean temperatures and changes in ocean circulatory patterns. Seasonal changes in the abundance of Albacore in the central and western Pacific Ocean are linked to variations in suitable habitat and prey availability, which are driven by local environmental variability and large-scale climate variability, such as the Pacific Decadal Oscillation and the El Niño Southern Oscillation[23,24].

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