



FACTSHEET

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Smart Fishing Initiative (SFI): species overview

YELLOWFIN TUNA (*Thunnus albacares*)

Region: Indian Ocean

IOTC status 2015: overfished and subject to overfishing^[1]

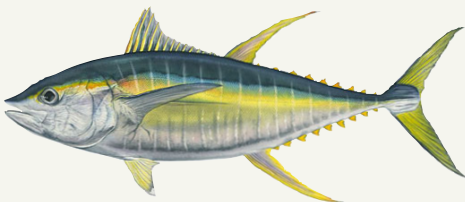


IMAGE SOURCE: WIKIPEDIA^[2]

Fast-growing, widely-distributed and highly productive, yellowfin tuna accounts for over a third of all tuna caught in the Indian Ocean^[3]. According to Indian Ocean Tuna Commission (IOTC) data as of November 2015, yellowfin is overfished and subject to overfishing in the region, due to catches exceeding maximum sustainable yield (MSY) recommended levels every year since 2011^[5]. As fishing effort on this species increases, WWF is concerned that a lack of effective management, including defined harvest control rules may result in the collapse of this stock within 5 years.

Appearance & size

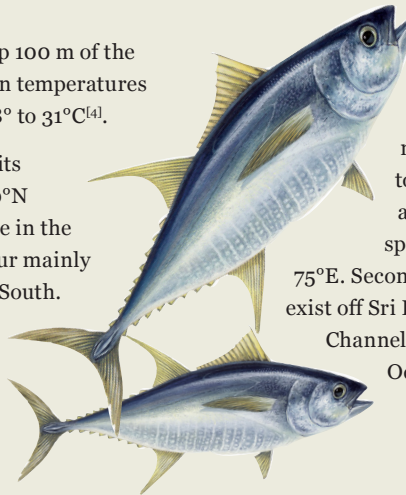
Yellowfin feature a metallic dark blue back, a yellow streak along their lateral line, and a silver belly with approximately 20 vertical lines. The dorsal and anal fins, and dorsal and anal finlets are bright yellow, giving this fish its common name. The second dorsal and anal fins almost reach the tail in some mature fish. Individuals with a fork length of 150 cm are common, while some fisheries have produced yellowfin in excess of 240 cm and 200 kg^[4].

Habitat, distribution & reproduction

Found in the subtropical and tropical areas of the Indian, Atlantic and Pacific Oceans, yellowfin tuna are a highly migratory epipelagic species. Longline catch data indicates they are distributed throughout the entire tropical Indian Ocean, with recovered tags supporting the assumption of a single Indian Ocean stock^[5]. Tagging has also revealed they are capable of diving to depths exceeding 1000 m, but mostly inhabit the mixed surface layer of the ocean above the

thermocline (top 100 m of the water column) in temperatures ranging from 18° to 31°C^[4].

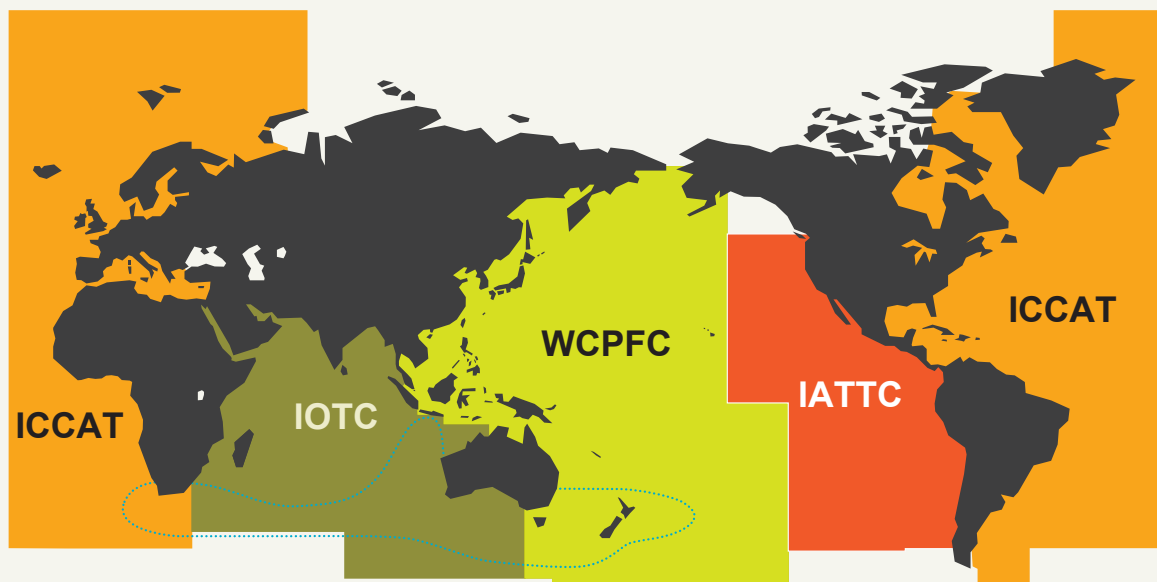
Geographic limits are from 45°-50°N and South, while in the Pacific they occur mainly from 20°N and South. Yellowfin over 100 cm (3-5 years of age) in the



Indian Ocean attain sexual maturity, with spawning occurring mainly from December to March in the equatorial area (0-10°S), with the main spawning grounds west of 75°E. Secondary spawning grounds exist off Sri Lanka and the Mozambique Channel and in the eastern Indian Ocean off Australia^[5].

Regional Fisheries Management Organisations (RFMO)

There are four global commercial yellowfin tuna stocks assessed and managed by a relevant RFMO (Fig. 1). The scientific committee of each RFMO assesses available scientific data and information, and provides scientific advice to the Commission of the RFMO to inform their management decisions.



- **Indian Ocean yellowfin:** managed by the Indian Ocean Tuna Commission (IOTC)
- **Western Pacific Ocean yellowfin:** managed by the Western and Central Pacific Fisheries Commission (WCPFC)
- **Eastern Pacific Ocean yellowfin:** managed by the Inter-American Tropical Tuna Commission (IATTC)
- **Atlantic Ocean yellowfin:** managed by the International Commission for the Conservation of Atlantic Tunas (ICCAT)

Fig. 1. Regional fisheries management organisations (RFMO) for for yellowfin tuna.



34%
of all Indian Ocean catches are yellowfin tuna^[5].

Indian Ocean fisheries

Indian Ocean catches of yellowfin tuna peaked at over 525,000 t in 2004, but dropped to a recent low of less than 270,000 t in 2009, after which numbers began to increase again with catches over 400,000 t recorded in 2012, 2013 and 2014. Advice from IOTC's Scientific Committee in 2015 indicated that annual catches of yellowfin should be reduced immediately by 20% from the 2014 level in order to rebuild the stock to levels that can maintain catches at the MSY level in the longer-term. Catches exceeded the recommended MSY in 2011, 2012 and 2013 (Fig. 2).

The sizes exploited in the Indian Ocean range from 30 cm to 180 cm fork length. Smaller fish (juveniles) form mixed schools with skipjack tuna and juvenile bigeye tuna and are mainly limited to surface tropical waters, while larger fish are found in surface and sub-surface waters. Intermediate age yellowfin tuna are rarely taken in the industrial fisheries, but are abundant in some artisanal fisheries, mainly in the Arabian Sea^[5].

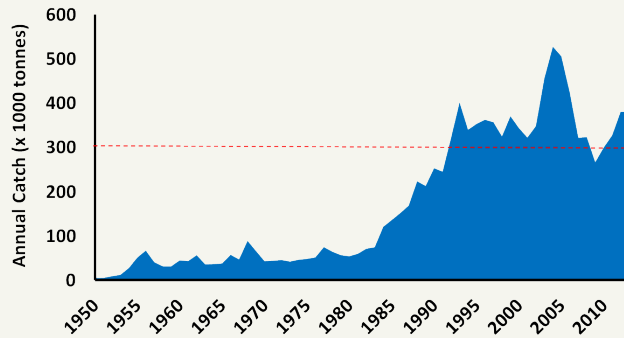


Fig. 2.
Annual catches of yellowfin tuna in the Indian Ocean (1950-2013)^[5].

The countries with the largest catches in 2013 (Fig. 3) were Spain (69,000 t), Maldives (46,000 t) and France (37,000 t)^[5].

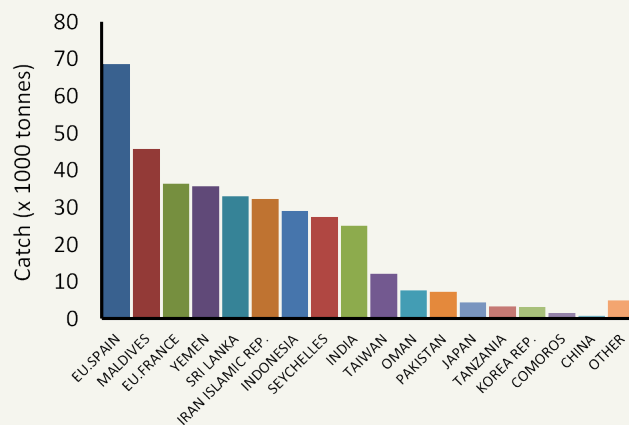


Fig. 3.
Yellowfin tuna catches by country in the Indian Ocean (2013)^[5].

Purse seiners account for the bulk of the industrial yellowfin tuna catch in the Indian Ocean (Fig. 4.), predominantly from the western Indian Ocean, Seychelles, Somalia, and the Mozambique Channel. Catches by other gear such as gillnet, pole-and-line, longline and other minor gear, have increased steadily since the 1980s. Contrary to other oceans, the artisanal fishery component of catches in the

Indian Ocean are substantial, accounting for around 30% of the total catches of yellowfin tuna until the early 2000s. Artisanal catches of yellowfin in recent years have been around 135,000 t, increasing to over 200,000 t in 2012 and 2013 – more than half the total catches of yellowfin tuna in each of the last two years. Artisanal catches of yellowfin tuna are dominated by gillnets, with catches of around 50,000 t since 2011^[5].

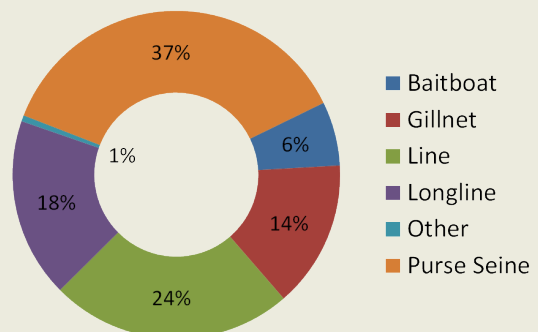


Fig. 4. Percentage of yellowfin tuna catches by gear in the Indian Ocean (2013)^[5].

9 YEARS maximum lifespan of yellowfin tuna in the Indian Ocean^[5], though few individuals are thought to live past 4 years^[1].



37% of Indian Ocean yellowfin are caught using purse seine nets.

Projected fisheries outlook



The IOTC Scientific Committee attributed the increased pressure on the Indian Ocean stock as a whole, with recent fishing mortality exceeding the MSY-related levels to substantial increases in longline, gillnet, handline and purse seine effort and associated catches in recent Years. As a result, stock biomass is now thought to be well below levels which can support a sustainable fishery. There is a very high risk continuing to exceed these levels if catches remain at or increase beyond 2014 levels and that the decline of the stock will be exacerbated over the short term. The Scientific Committee has emphasised that due to the serious situation the stock is in, catches of yellowfin and other information should be closely monitored. This will require significant improvements in data collection and reporting from those fisheries that currently fail to comply with Resolutions on data collection and reporting.

Stock status

Based on 2014 estimates and other indicators presented at the 18th session of the IOTC Scientific Committee in November 2015, it was determined that yellowfin tuna were overfished and subject to overfishing in the Indian Ocean^[5]. Stocks were estimated to be at 23% of their original unfished state with substantial increases in fishing effort increasing the pressure on the stock as a whole.

Stock management

Yellowfin tuna stocks in the Indian Ocean are not currently managed to best practice. The fishery does not operate under a defined harvest strategy and lacks any harvest control rules which could prevent overfishing of the stocks. Additionally, there is no evidence of a precautionary approach to management in spite of projected declines of yellowfin stocks to a possible collapse of the stock over the next five years by the IOTC Scientific Committee. There is also a demonstrated and repeated lack of management response to MSY catch levels recommended by the IOTC Scientific Committee, with catches in recent years exceeding these recommended levels (refer Fig.2).

Although members of the IOTC have taken positive steps in recent months by actively discussing and moving toward addressing some of the identified management shortfalls, this fishery remains vulnerable to overfishing until stronger stock management measures are formally adopted through IOTC Resolution.

Stock management challenges

The key challenge facing yellowfin tuna in the Indian Ocean is the lack of effective management of the stock. This is compounded by general low levels of compliance by IOTC members with existing conservation and management measures with no penalties in place to address them. There is no quota for yellowfin, and recommended catch limits by the IOTC Scientific Committee are exceeded. It is questionable whether progress in the management of the stock will be sufficient and timely enough to counter the increased fishing effort in areas where piracy is no longer a threat, and as IOTC members implement fleet development plans. Of further concern is the certification for sustainability of some other tuna fisheries in the region despite a similar absence of key management processes. This may lead to further complacency regarding the need to improve management of all tuna stocks in the region.

WWF recommendations for yellowfin tuna in the Indian Ocean

- IOTC members must adopt immediate measures to halt the overfishing and rebuild the depleted stock.
- WWF accords the development of effective Harvest Control Rules for Indian Ocean tuna fisheries the highest priority, and fully supports the IOTC in these efforts, including the facilitation of regional capacity building activities to improve the dialogue among scientists, managers and other stakeholders.
- Improving the quality of data collection and reporting for Coastal and/or Artisanal Tuna Fisheries in the Indian Ocean region. To address this serious issue WWF is working with a number of IOTC members to improve the quality and provision of data to IOTC scientists.
- WWF strongly recommends development and adoption of plans to increase observer coverage to effective levels. Levels of observer coverage within the IOTC are currently very low relative to levels achieved in other tuna RFMOs.
- IOTC members have adopted many highly desirable and necessary Conservation Management Measures.
- WWF encourages all IOTC members to work toward strengthening national and regional compliance with the adopted IOTC Conservation and Management Measures.




1. IUCN Red List of Threatened Species, *Thunnus albacares*, version 2014.3. Available at: <http://www.iucnredlist.org/details/21857/0> [31 Mar. 2015].
2. Yellowfin tuna, 2015. Available from: http://en.wikipedia.org/wiki/Yellowfin_tuna [01 April 2015].
3. Yellowfin tuna, 2015. Available from: <http://www.asiapacfish.org/index.php/species/item/18-yellowfin-tuna> [31 March 2015].
4. Fisheries and Aquaculture Department, Species Fact Sheets: *Thunnus albacares*, Food and Agriculture Organization of the United Nations (FAO). Available from: <http://www.fao.org/fishery/species/2497/en> [06 April 2015].
5. Indian Ocean Tuna Commission (IOTC) 2015, Report of the 18th Session of the IOTC Scientific Committee. Available from http://iotc.org/sites/default/files/documents/2016/01/IOTC-2015-SC18-RE_-_FINAL_DO_NOT_MODIFY.pdf [27 November 2015]

WWF's Smart Fishing Initiative (SFI)

Vision: The world's oceans are healthy, well-managed and full of life, providing valuable resources for the welfare of humanity.

2020 Goals: The responsible management and trade of global priority fisheries results in recovering and resilient marine ecosystems, improved livelihoods for coastal communities and strengthened food security for the Planet.

	<p>Why we are here</p> <p>To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.</p> <p>www.panda.org</p>
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