

Thunnus albacares (Yellowfin Tuna)

Family: Scombridae (Mackerel, Tunas and Bonitos)

Order: Perciformes (Perch and Allied Fish)

Class: Actinopterygii (Ray-finned Fish)



Fig. 1. Yellowfin tuna, *Thunnus albacares*.

[<http://www.fishingorangebeach.com/Big-Game-Fish-Species.htm>, downloaded 10 March 2015]

TRAITS. *Thunnus albacares* (yellowfin tuna) is one of the larger tuna species. It can easily weigh over 200 kg and reach up to a length of 240cm (Wikipedia, 2015). The body is streamlined with a conical head. In general, tuna fish can be somewhat difficult to differentiate, however, *T. albacares* can be easily distinguished by its specific characteristics. A dark metallic blue covers the upper body, fading into yellow on its sides and a silver-white colour on its lower body with about 20 broken lines (Fig. 1). These lines are much more prominent on juveniles. There are two dorsal fins, the second one being very long, as is the anal fin which is situated directly under it. The pectoral fin in mature *Thunnus albacares* usually can extend up to the beginning of the second dorsal fin, not past it. There are 7-10 dorsal and ventral finlets and 26-34 gill rakers on its first gill arch. The dorsal, anal and finlets all display a vibrant yellow colour and hence this is where the name yellowfin tuna was derived (Collette and Nauen, 1983).

DISTRIBUTION. *Thunnus albacares* be found worldwide in tropical and in subtropical seas from latitudes of 40°N to 35°S with the exception of the Mediterranean Sea (Fig. 2).

HABITAT AND ACTIVITY. *Thunnus albacares* can be found in the epipelagic zone above and below the thermocline at temperatures of 18- 31°C. The majority of the *Thunnus albacares* population are located within 20° latitude of the equator where temperatures are warmer. They inhabit depths up to 200m but are more frequently found within 100m of the ocean surface.

During the night they are found closer to the surface and return to deeper depths during the day. *Thunnus albacares* is a highly mobile fish that can travel long distances in search of food and suitable living temperatures however their migratory patterns are more associated with warmer temperatures.

FOOD AND FEEDING. *Thunnus albacares* are resourceful eaters with a large appetite. The body of a *Thunnus albacares* is well adapted for exceedingly fast swimming and can reach up to a speed of 80 kph allowing them to catch baitfish such as mackerel. They feed on an assortment of fish, octopoda, crustaceans and even consume other smaller tuna fish. Its consumption habits depend mainly on the availability of large quantities of local food. *Thunnus albacares* usually preys on fish using solely the sense of sight. They have a tendency to continue eating after being full which results in slow movement until digestion takes place, when they regain their speed.

POPULATION ECOLOGY. *Thunnus albacares* is referred to as a strong schooler (Fig. 3) and is considered to be very loyal to its school. The desire to school with aquatic animals of a similar size often takes precedence over schooling with its own kind. *Thunnus albacares* are commonly found swimming among schools with a variety of fishes such as skipjack tuna, bigeye tuna and spinner dolphins. Some *Thunnus albacares* have a tendency to distance themselves from the surface water. These fish are usually unlikely to be associated with schools and are inclined to separate from one another. Frequently *Thunnus albacares* form schools which swim beneath and follow drifting objects in the water for example wooden logs, sea grass and dead marine organisms. They utilize these objects in various ways such as for protection from predators, food and a place to lay eggs (Collette and Nauen, 1983).

REPRODUCTION. *Thunnus albacares* can begin to reproduce between the ages of 2-3 years old. Reproduction can take place at any time of the year in addition to multiple times a year. However the warmer temperatures of summer is when reproduction is at its height. It is believed that 26°C is the minimum temperature for spawning, which results in *Thunnus albacares* travelling long distances to different regions in search of warm temperatures preferential for mating. Female *Thunnus albacares* release millions of eggs which are in return fertilized by sperm released from males in open ocean waters (Cole, 1980). Although millions of eggs are fertilized every year only few make it to adulthood this is due to predators preying on the juvenile *Thunnus albacares*. The larval of the *Thunnus albacares* can easily be distinguished by lack of pigment on its tail as well as the presence of one black spot under its chin however as they mature it become challenging to differentiate from similar species as these specific characteristics become less noticeable.

BEHAVIOUR. *Thunnus albacares* are considered migratory fish as they travel long distances at high speeds for both food and mating purposes. They travel in schools however not necessarily with their own, more commonly they are found traveling with fishes of different species usually of a similar size. They are frequently seen with other aquatic animals such as whale sharks and dolphins though minimal interaction occurs. *Thunnus albacares* typically reside in deep waters away from shores but may venture to shores if the surroundings are appropriate. At night time they remain at a depth of 40-70m underwater while during day time they are usually found in depths ranging from 70-110m (Cayré, 1991).

APPLIED ECOLOGY. In 2011 *Thunnus albacares* were listed as a near threatened species according to the World Conservation Union (IUCN). Research was done to expose the state of

Thunnus albacares stock in three major oceans; Atlantic Ocean, Indian Ocean, and Pacific Ocean by various organizations in 2007. The result of this research showed that *Thunnus albacares* was fully exploited in all oceans except the Indian Ocean where it was moderately exploited. Although *Thunnus albacares* is near threatened it is however not considered endangered but does raise some concern. *Thunnus albacares* is one of the more popular fish that is consumed throughout the world. There are approximately 35 countries with fisheries that specifically targets *Thunnus albacares* for commercial purposes. The United States of America and Japan account for the highest amount of catches. The main methods of catching *Thunnus albacares* are purse seines, longline, and pole-and-line with purse seines being the most effective method.

REFERENCES

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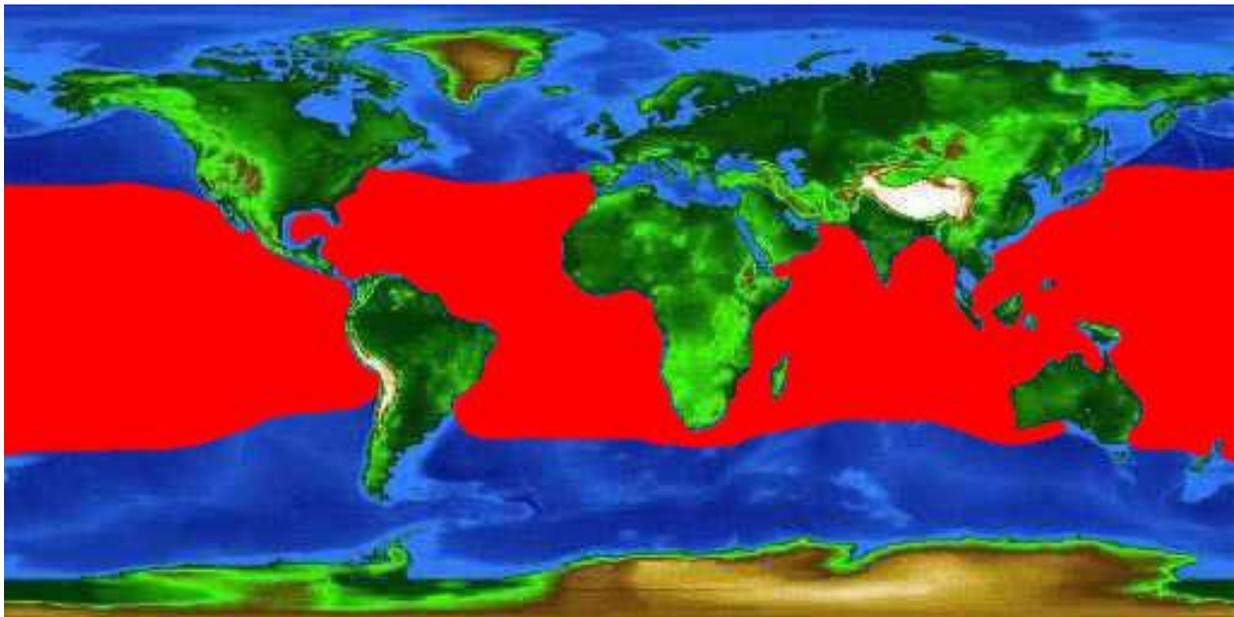


Fig. 2. Geographical distribution of yellowfin tuna (*Thunnus albacares*).

[<http://www.flmnh.ufl.edu/fish/gallery/descript/yellowfintuna/yellowfintuna.html>, downloaded 10 March 2015]



Fig. 3. A school of yellowfin tuna (*Thunnus albacares*).

[<https://www.worldwildlife.org/species/yellowfin-tuna>, downloaded 10 March 2015]

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