

# ATLAS OF TUNA FISH SPECIES

## Skipjack Tuna



<b>English:</b>	Skipjack Tuna (stripe-bellied Bonito)
<b>Latin:</b>	Katsuwonus pelamis
<b>Other Languages:</b>	Netherlands: Gestreept tonijn, Spain: Listado, Barrilete, Italy: Palometta, Denmark: Bugstribet bonit, Germany: Echter Bonito, Portugal: Palamida, France: Listao, Japan: Katsuo, Indonesia: Cakalang, Papua New Guinea: Tjakalang, China: Then chien, Philippines: Gulyasan,
<b>Characteristics:</b>	Skipjack Tuna can be distinguished by the presence of four to seven dark, longitudinal stripes on their bellies. Their dark blue backs are accentuated by a clearly defined area of green above the pectoral fin, which fades away towards the middle of the body. They have silvery flanks and bellies, and short fins. These subheadings do not cover the Atlantic or belted bonitos ( <i>Sarda sarda</i> ), which have oblique bands on their backs.
<b>Common Size:</b>	40-80 cm / 2.5 kg
<b>Maximum:</b>	Size 110 cm, Weight 30 kg, Age 15 years
<b>Biggest Angled Fish:</b>	20 kg - Mexico 1996 by Brian Evan
<b>Maturity:</b>	1 year and around 2 kg Female: 42-50 cm Male: 45-52 cm
<b>Catching Area:</b>	73% Western Pacific Ocean (63% WCPO, 8% SPO, 3% NPO) 7% Eastern Pacific Ocean 11% Indian Ocean 9% Atlantic Ocean
<b>Catching Methods:</b>	Mostly purse seining, some pole & line (8%)
<b>Share of all Tuna Caught 2012:</b>	About 46% - 2,776,833 M/T
<b>Main Processing Nations:</b>	Thailand, Philippines, Indonesia, Ecuador, Ghana, Colombia, Ivory Coast, Senegal, Samoa, Spain, Italy, Papua New Guinea, Seychelles, Vietnam
<b>Flags of Main Fleets:</b>	Taiwan, US, China, Japan, Indonesia, Spain

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<b>Life Cycle:</b>	About 3 to 4 years
<b>Major Markets:</b>	Europe, United States, Arab World, Japan
<b>Popular Product Forms:</b>	Canned (90%), Pouched, Dried (Katsuobushi), Fillet (Tataki)

Skipjack is the most popular tuna for consumption. It prefers to swim in the upper mixed layers of the ocean waters and is mostly found between 45° N and 40° S. It is highly migratory and can be found all over the world within tropical waters. Large schools sometimes mix with small yellowfin. Normally dolphins do not swim together with small skipjack, which almost makes it a guaranteed dolphin-safe species. Skipjacks also mature around 1 year of age, a characteristic which promotes rapid turnover in skipjack populations.



## Product characteristics:

The meat of the skipjack is darker of color, sometimes even slightly pinkish. It has a relatively tender texture and has somewhat more of a fishy taste than other tuna species. The small size of the fish gives small loins and chunks, making it excellent for canned tuna chunks.

## Future Supply:

In the Western and Central Pacific Ocean (WCPO), the biomass of skipjack tuna is very large and estimated to exceed that of the other three main tuna species combined. It is assumed that skipjack in the WCPO is a separate population (for stock assessment and management purposes) to the Eastern Pacific stock. Skipjack is clearly a species that is difficult to overfish because of its highly active reproductive behavior. Local overfishing has been noted, however it should not be harmful to the spawning stock as a whole.

## Management:

Taking into account that tuna is a highly migratory species, how are tuna stocks being managed? The Regional Fisheries Management Organizations (RFMOs) are the bodies responsible for the management of tuna populations; they monitor the activity within fishing countries in the region, setting catch limits in those areas. Tuna RFMOs are also responsible for regulating the fishing fleets and controlling the health of stocks.

Currently, these are the active tuna RFMOs in the world:

- Commission for the Conservation of Southern Bluefin Tuna (CCSBT)
- Inter-American Tropical Tuna Commission (IATTC)
- International Commission for the Conservation of Atlantic Tunas (ICCAT)
- Indian Ocean Tuna Commission (IOTC)
- Western and Central Pacific Fisheries Commission (WCPFC)

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## Yellowfin Tuna



<b>English:</b>	Yellowfin Tuna
<b>Latin:</b>	Thunnus albacares
<b>Other Languages:</b>	Netherlands: Geelvintonijn, Spain: Rabil, Aleta Amarilla, Italy: Tunnu monicu, Denmark: Gulfinnet tun, Germany: Gelbflossen-Thun, Portugal: Atum Rabil, France: Thon albacore, Japan: Kidaha, Indonesia: Gantarangang, Papua New Guinea: Tetena keketina, China: 黄奇串, Philippines: Badla-an
<b>Characteristics:</b>	Easy to recognize by the sickle-shape of their anal and second dorsal fins.
<b>Common Size:</b>	40-150 cm / 1,3-70 kgs
<b>Maximum:</b>	Size 200 cm, Weight 175 kgs, Age 8 years
<b>Catching Areas:</b>	20% Eastern Pacific 41% Western Pacific 29 % Indian Ocean 10% Atlantic Ocean
<b>Catching Methods:</b>	Mostly purse seining, long-lining, pole-and-line
<b>Share of all Tuna Caught:</b>	About 26% - 1.037.000 m/t
<b>Main Production Areas:</b>	Thailand, Philippines, Indonesia, Mexico, Venezuela, Ecuador, Colombia, Spain, Italy
<b>Life Cycle:</b>	About 7 years
<b>Major Markets:</b>	Japan, Southern-Europe, United States
<b>Popular Product Forms:</b>	Canned Fresh (whole fish) Frozen pre-cooked Loins Fresh Fillets Raw frozen loins + steaks

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## Product Characteristics:

In cooked form the yellowfin meat tends to have a very light yellow/brown color. The structure of the meat is firm and the taste is mild. If the fish gets larger than 10-15 kgs the meat tends to become slightly darker and fairly dryer. The large size of the yellowfin makes it well fit for solid packaging in cans.

## Future Supply:

The stock of Eastern Pacific Ocean has increased in spawning biomass in response to decreasing fishing mortality. There are no indications of the Western Central Pacific Ocean stock to be in an overfished state because the spawning biomass is above MSY level. The stock in the Indian Ocean is in a healthy state. The spawning biomass is uncertain in the Atlantic Ocean stock because of two assessment models that have different results; one increasing and one decreasing. The general concern with yellowfin is that due to increased catches of baby yellowfin on FAD's, the stocks might suffer in the long term.

## Albacore Tuna



<b>English:</b>	Albacore Tuna (long finned tuna)
<b>Latin:</b>	Thunnus alalunga
<b>Other Languages:</b>	Netherlands: Witte tonijn, Spain: Bonito del Norte, Atún Blanco, Italy: Tonno bianco, Denmark: Albacore, Germany: Weisser Thun, Portugal: Atum voador, France: Germon, Japan: Binnagamaguro, Indonesia: Albakora, Papua New Guinea: Albacore, China: Chang chi we, Philippines: Bayot
<b>Characteristics:</b>	Long pectoral fins, which reach behind the anus and by their dark blue backs and blue-grey flanks and belly.
<b>Common Size:</b>	40-100 cm / 4.5 – 11 kg
<b>Maximum:</b>	Size 130 cm, Weight 40 kg, age 15 years.

<b>Maturity:</b>	Size 75-90 cm, Weight 8-15 kg, Age 2-5 years.
<b>Catching Areas:</b>	32% Northern Pacific 31% Southern Pacific 21% Atlantic Ocean + Mediterranean 16% Indian Ocean
<b>Catching Methods:</b>	Longlining, Pole-and-line, trolling
<b>Share of all Tuna Caught:</b>	2011 - about 6% - 237.000 m/t
<b>Main Production Areas:</b>	Thailand, Indonesia, United States, Japan, Spain (Bonito Del Norte)
<b>Life Cycle:</b>	About 5 years
<b>Major Markets:</b>	United States, Canada, Japan, Spain
<b>Popular Product Forms:</b>	Canned (white tuna) Fresh Frozen

**Product Characteristics:**

Due to its white colored meat albacore is also called "the chicken of the sea". As canned product it is quite popular in the States, where it is marketed as "White Tuna". The meat has a dry texture and the taste comes close to that of chicken meat. In Spain Atlantic Albacore is especially popular in jars with olive oil and sold as "Bonito Del Norte".



**Future Supply:**

The stock of Albacore in the Northern Pacific isn't overfished. There are also no indications that the stock in the Southern Pacific is overfished either. In the Northern Atlantic Ocean there is no clear evidence of a sustained increase in biomass or a stable one. In the Southern Atlantic Ocean there are indications of the Albacore being in an overfished state. The situation in the Mediterranean is unknown. There are indications in the Indian Ocean that if overfishing continues the stock size is expected to go below the limit.

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## Bigeye Tuna



<b>English:</b>	Bigeye Tuna
<b>Latin:</b>	Thunnus obesus
<b>Other Languages:</b>	Netherlands: Grootoogtonijn, Spain: Patudo, Italy: Tonno obeso, Denmark: Storøjet tun, Germany: Grossaugenthun, Portugal: Atum patudo, France: Thon obése, Japan: Mebachi, Indonesia: Tuna mata besar, Papua New Guinea: Matana Bwabwatana, China: 大目仔, Philippines: Bangkulis
<b>Characteristics:</b>	Similar to Yellowfin tuna, they are hard to distinguish. Long pectoral fins that usually extend well past their anal fin, which together with their large eye, characterize the species.
<b>Common Size:</b>	40-180 cm / 1,4-130 kg
<b>Maximum:</b>	Size 230 cm, Weight 210 kg, Age 15 years
<b>Biggest Angled Fish:</b>	197,3 kg, 236 cm - Perú 1957 by Russel Lee
<b>Maturity:</b>	Size 105 cm, Weight 25 kg, Age 3-4 years
<b>Catching Areas:</b>	21% Eastern Pacific 38% Western Pacific 22% Indian Ocean 19% Atlantic Ocean
<b>Catching Methods:</b>	Longlining, Purse seining and Pole-and-line (by-catch)
<b>Share of all Tuna Caught:</b>	2011 about 10% - 398.000 m/t
<b>Main Production Areas:</b>	Thailand, Philippines, Indonesia, Mexico, Venezuela, Ecuador, Colombia, Spain, Italy

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Bigeye tuna swim at greater depths than Skipjack and Yellowfin, therefore having more fat to insulate them from cold water. This makes them especially attractive for the Japanese sashimi market.

### Product Characteristics:

The meat turns light gray and somewhat darkish after cooking or grilling. Its color makes it less fit for canning. The color and taste of big fish is almost similar to that of beef. In S-America baby bigeye are sometimes used for canning; this is still marketed as light meat.

### Future Supply:

There are no indications that the stock of the Eastern Pacific Ocean is expected to fall below limit in a few years. In the Western Central Pacific Ocean the stock has been subjected to overfishing for over one decade, but hasn't become higher than the average recruitment levels in recent years. In the Indian Ocean it shows no indication of being in an overfished state.



## Bonito

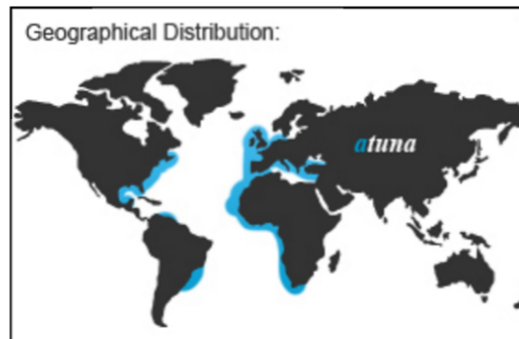


<b>English:</b>	Atlantic Bonito
<b>Latin:</b>	Sarda sarda or sarda spp
<b>Other Languages:</b>	Netherlands: Atlantische boniter, Spain: Bonito, Italy: Bonnicou, Denmark: Pelamide, Germany: Bonito, Portugal: Bonito, France: Bonite à dos rayé, Japan: Hagatsuo, China: 狐鲣, Philippines: Tambakol
<b>Characteristics:</b>	Short pectoral fins and between 9-12 dark stripes on their back.
<b>Common Size:</b>	40 -50 / 2,5 kg

<b>Catching Methods:</b>	Mostly purse seining
<b>Share of all Tuna Caught:</b>	Less than 1%
<b>Main Production Areas:</b>	Greece, Turkey, Thailand, Indonesia, Spain
<b>Spawning Area:</b>	Within coastal waters
<b>Life Cycle:</b>	About 1-2 years
<b>Major Markets:</b>	Turkey, Greece, Spain, Western-Europe
<b>Popular Product Forms:</b>	Fried Cooked Canned

Bonito is a species associated with the tuna family, but cannot be marketed as Tuna in many countries.

Bonito is quite popular as a fried fish with olive oil, especially in the Mediterranean region. Due to its small size and firm dark meat it is well fit for this purpose. The species is mostly fished in coastal water by small local vessels. The catches tend to be quite seasonal.



**Product characteristics:**

The bonito meat has a firm texture and a darkish color. However, small / young bonito can also have quite a light color close to that of skipjack. This is one of the reasons why it is sometimes used as a cheaper substitute of skipjack tuna, especially for canning purposes. The bonito has a moderate fat content.

**Future Supply:**

Due to the fact that bonito are caught by relatively small vessels and in several local regions, also as by-catch, it is quite hard to determine what the supply will be or is. Catching volumes in the Black Sea and Mediterranean have been decreasing during the last decade. The catches in the Gulf of Thailand, along the Birmese Coast, and South China Sea supply the canned tuna industry. The size of the fish tends to become smaller. The supply is irregular and quite limited.



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## Northern Bluefin Tuna



<b>English:</b>	Northern Bluefin Tuna (North-west Pacific + North- East Atlantic + Mediterranean)
<b>Latin:</b>	Thunnus thynnus
<b>Other Languages:</b>	Netherlands: Blauwvin tonijn, Spain: Atún rojo, Italy: Tonno, Denmark: Blåfinner tun, Germany: Atlantischer Thunfisch, Portugal: Atum-rabilho, France: Thon rouge de l'Atlantique, Japan: Kuromaguro, China: 金枪鱼
<b>Characteristics:</b>	The back is dark blue to black, with silvery lower sides. The second dorsal fin is larger than the first one and usually reddish-brown.
<b>Common Size:</b>	80-200 cm
<b>Biggest Angled Fish:</b>	677 kgs, 304cm - Canada 1979 by Ken Fraser
<b>Maturity:</b>	Size 110-190 cm, Weight 30-120 kg, Age 4-11 years
<b>Catching Areas:</b>	60% Pacific Ocean 33% Atlantic ocean Eastern & Mediterranean 6% Western Atlantic Ocean
<b>Catching Methods:</b>	Purse seiner and Longliner
<b>Main Production Areas:</b>	Japan
<b>Life Cycle:</b>	Up to 25 years
<b>Major Markets:</b>	Japan
<b>Popular Product Forms:</b>	Canned (light tuna) Fresh, super frozen (Sashimi)

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Northern Bluefin tuna makes extensive migrations. It is the slowest growing tuna species, which can reach an age of 20 years or more, which explains its size. Bluefin is extremely popular in Japan for sashimi, due to its large size, color, texture and its high fat content. Its quality in combination with its rarity makes it the most expensive tuna species.



## Future Supply:

The Northern Bluefin is certainly a tuna species under threat. Its slow growth, in combination with the over-exploitation of the stocks has caused authorities to implement catching quota in the Eastern Atlantic.

## Southern Bluefin Tuna



<b>English:</b>	Southern Bluefin Tuna (Southern Pacific, Atlantic Ocean, Indian Ocean)
<b>Latin:</b>	Thunnus maccoyii
<b>Other Languages:</b>	Netherlands: Blauwvin tonijn, Spain: Atún rojo, Italy: Tonno, Denmark: Blåfinner tun, Germany: Atlantischer Thunfisch, Portugal: Atum-rabilho, France: Thon rouge de l'Atlantique, Japan: Kuromaguro, China: 金枪鱼
<b>Characteristics:</b>	The back is dark blue to black, with silvery lower sides. The second dorsal fin is larger than the first one and usually reddish-brown.
<b>Common Size:</b>	150 cm

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<b>Maturity:</b>	Size 110-190 cm, Weight 30-120 kg, Age 4-11 years
<b>Catching Areas:</b>	17% Pacific Ocean 4% Atlantic Ocean 79% Indian Ocean
<b>Catching Methods:</b>	Pole and Line, surface trolling and long-line fishing
<b>Share of all Tuna Caught:</b>	In 2011 About 0,2% - 9300 m/t
<b>Main Production Areas:</b>	Thailand, Indonesia, United States, Japan
<b>Life Cycle:</b>	At least 12 years
<b>Major Markets:</b>	Japan
<b>Popular Product Forms:</b>	Fresh (Sashimi), super frozen

Southern Bluefin are large, fast swimmers and a pelagic fish. It's considered the ultimate delicatessen of the tuna family in Japan. For Bluefin sashimi (raw tuna fillets) the Japanese are willing to pay extremely high prices, due its size, color, high fat content, texture and taste. The high price is caused by the fact that this tuna species is very hard to get. Very few markets can compete with the prices that Japanese buyers are willing to pay.



## Future Supply:

The Southern Bluefin tuna is the most overexploited tuna species. The stocks are heavily depleted. Japan, Australia and New Zealand have imposed restrictions on the catching of this tuna species. This situation has triggered actions by several environmental groups such as WWF and Greenpeace. Many initiatives around the world have been taken to ranch wild caught bluefin tuna into captivity, In Croatia, Spain, Morocco, Australia and Japan. This industry will continue to grow, but due to the slow growth of the big-eye and the high costs involved, it cannot fulfill the demand for bluefin in any way.

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## Tongol



<b>English:</b>	Tongol (longtail tuna)
<b>Latin:</b>	Thunnus tonggol
<b>Other Languages:</b>	Netherlands: Tonggoltonijn, Spain: Atún tongol, Italy: Tonno indiano, Denmark: Tonggol-tun, Germany: Langschwanz-Thunfisch, Portugal: Atum-do-índico, France: Thon mignon, Japan: Koshinaga, China: 小黄鳍鲔, Philippines: Bakulan
<b>Characteristics:</b>	Dark blue back and short pectoral fins.
<b>Common Size:</b>	90 cm / 15-20 kg
<b>Biggest Angled Fish:</b>	35,7 kgs Australia, 1982 Tim Simpson
<b>Catching Areas:</b>	65% Western Pacific 35% Indian Ocean
<b>Catching Methods:</b>	Mostly pole and line, Long Lines
<b>Share of all Tuna Caught:</b>	About 4 % or 125.000 m/t
<b>Main Production Areas:</b>	Thailand, Indonesia
<b>Major Markets:</b>	United States, Sweden
<b>Popular Product Forms:</b>	Canned (light tuna) Fresh

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Tongol is mostly popular for canning purposes. It is a very seasonal fish caught mostly by small vessels in the waters along the Malay and Burmese coast. There are also local catches around the Indonesian archipelago.

## **Product characteristics:**

The meat is quite tender and has an almost white color. It doesn't have a lot of taste. It is more appreciated as a canned product than the somewhat drier albacore meat.

## **Future Supply:**

There is limited data available on the volume of the catch and the status of the current stocks. One reason is that Tongol is mainly caught by small local vessels, which makes monitoring difficult. The general feeling is that tongol catches are close to – at or already over their MSY. This is due to decreases in the sizes of landed fish. Availability tends to be very seasonal and mainly restricted to Indonesia and Thailand.

There is a general lack of information and data with all major tuna Regional Fisheries Management Organizations (RFMO's) on Tongol tuna.

