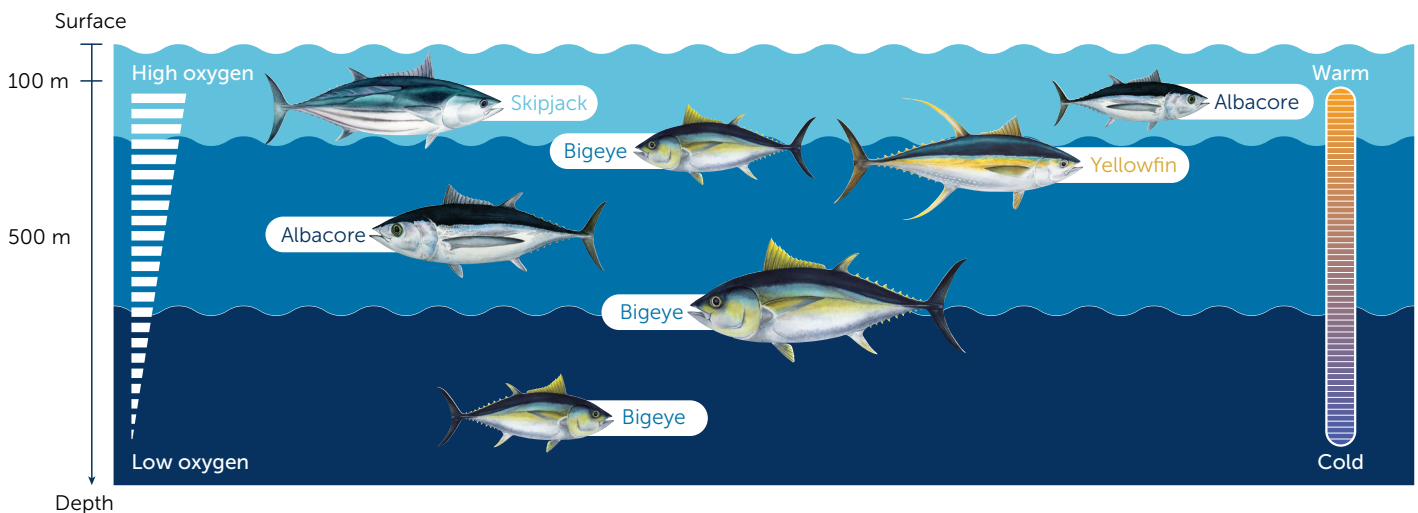


Fishing for tuna in the Western and Central Pacific Ocean: purse seine and longline fishing

Forum Fisheries Agency fact sheet

Different fishing methods needed to catch different sizes and species of tuna

Different species of tuna and tuna of different ages behave differently: they live in different parts of the ocean, and at varying depths, and may move between warmer and cooler water over the year.

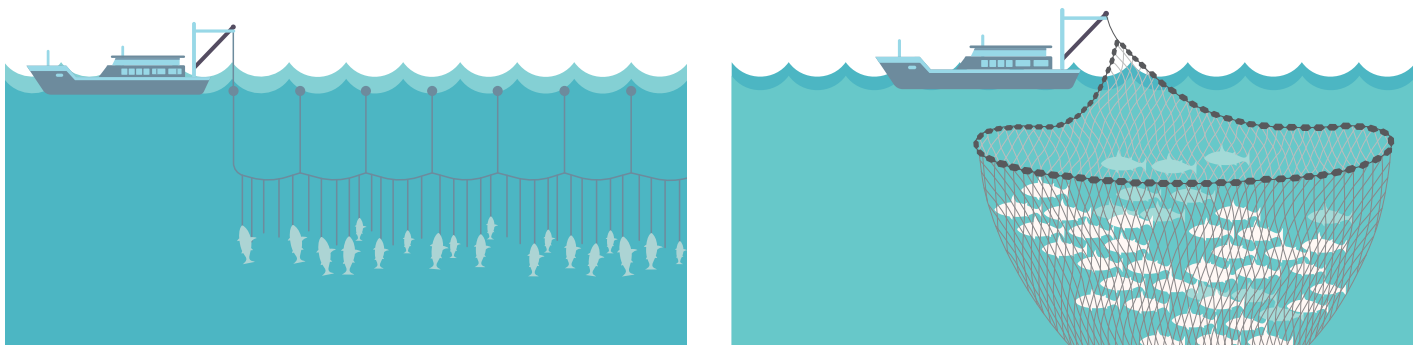


Each tuna species has its own needs for and tolerances of water temperature and oxygen levels. For example, bigeye is tolerant of a range of temperatures from warm surface temperature to lower cold temperature. They also tolerate low oxygen levels. Albacore tolerates colder water but needs more oxygen than bigeye. (Source: Valerie Allain)

To catch different fish at different sizes requires different fishing methods. The two most important industrial fishing methods in the Western and Central Pacific Ocean are purse seine fishing and longline fishing.

The purse seine fishery is the largest tuna fishery in the Western and Central Pacific Ocean. This method of fishing is used to catch skipjack tuna and small yellowfin tuna. Most of these fish are canned.

Longline fisheries target adult bigeye, albacore and yellowfin tuna. This fishery accounts for 10–13% of the tuna caught in the Western and Central Pacific Ocean. However, the tuna caught this way is more valuable, as they are larger and can be landed in better condition. This is the main fishing method used for producing high quality sashimi.



*The differences in the operation of longline and purse seine fishing
(Source: Adapted from International Seafood Sustainability Foundation)*

Purse seine fishing involves a huge net capable of catching thousands of tuna in the open ocean

Purse seine vessels operate in the open ocean, using a huge net to catch many thousands of tuna in a single operation in the surface layer of the ocean (up to 200 m deep).

The vessel circles a school of tuna, letting out a float line that may be 2 km long. Attached to the line is a deep wall of netting, which has rings set in its base.

A second line of wire rope runs through the rings. Once the fishers have circled the school of tuna, they draw in the lower line, which closes the bottom of the net and traps the fish. The fishers can then use powerful winches to haul the catch onto the ship.

Most purse seine vessels have freezers on board so that the catch can be frozen immediately.

Purse seine fishing can be more successful when fishers use floating objects known as fish-aggregating devices (FADs), because tuna like to congregate around objects floating on or near the surface of the ocean.



*Aboard a purse seine fishing vessel
(Photo: Francisco Blaha)*



FFA

Longline fishing feeds out long lines with hooks into the open ocean

The crew of a longliner bait single hooks (manually or by machine) and feed out lines that may be more than 60 km long. The hooks are on short lines (called branch lines) that hang off the main line. One longline may have 3,000 hooks.

The depth at which the hooks hang in the water is crucial for attracting the desired tuna. This is regulated with a line thrower to produce a curved mainline between floats, and thus cover a range of depths.

Longlines are not anchored: they drift near the surface, and are marked by radio beacons which the vessel uses to find them. It may take up to 11 hours to haul in a longline.

There are different types of longline vessels. Most are large vessels of between 30 m and 70 m long. The length of time they spend away from ports fishing determines the type of refrigeration they use to store the tuna catch. Vessels that are at sea for short periods usually have ice for cooling, whereas those that are at sea for many months at a time contain freezers capable of snap-freezing the tuna and keeping it at less than -40°C .

For further information

FFA Media: media@ffa.int

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