

In the Pacific Islands region, large-scale, or industrial, fishing techniques are almost exclusively used to catch tuna and associated species. The only exception is the shrimp trawl net fishery* of Papua New Guinea. The main techniques used to catch tuna are: purse seine, longline, pole-and-line and troll.*



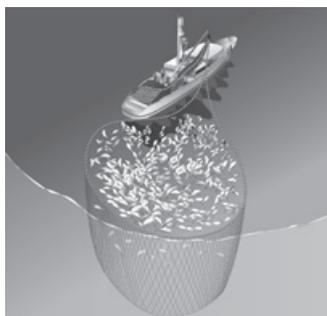
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Purse seine

A school* of tuna is spotted while it feeds on schools of baitfish close to the surface. Most of the time, seabirds have also been attracted and dive to feed on the baitfish, making the spotting easier. A huge vertical net (seine) – which can measure up to 1,500–2,000 m long by 120–250 m deep – is quickly set around the school of tuna, and then closed at the bottom to form a purse in which up to 150 tonnes of tuna can be caught at one time.

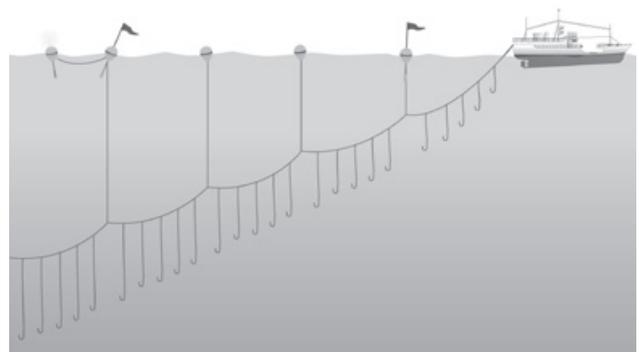
Target: Mainly skipjack and small yellowfin tuna. Most of the catch is for canning and thus ends up in tuna cans one can find in stores all over the world.

About 65% of the tuna catch in the western and central Pacific Ocean (WCPO) region is caught with purse-seine gear – about 1.5 million tonnes in 2011. Most of the purse-seine catch is taken within 5 degrees of the equator.



Longline

A long line, called the mainline, with baited hooks attached at intervals by means of branchlines, is set and allowed to drift for several hours. Large tuna longliners can set up to 3,000 hooks on one line that can measure more than 100 nautical miles. The hooks of a longline are set deep (between 80 and 400+ m), so the fishers cannot see the targeted fish. The choice of the location for a set is therefore made by experience, according to sea surface currents and temperature, season, weather, etc.



Note:

Over 50% of the world tuna catch, worth about USD 6 billion, comes from the Western and Central Pacific Ocean region. Of the fishing nations in the Pacific, Kiribati has had the highest volume of catch. In Kiribati, over 90% of the catch is made by purse seine vessels, which target skipjack and small yellowfin tuna. Longline vessels catch bigeye, yellowfin and some albacore. Of these species, there is some concern that stocks of bigeye tuna are being overfished.

There are two major types of longliners:

1. relatively large (>30 m) vessels that use sophisticated freezing equipment and are often based outside the Pacific Islands, and
2. smaller vessels that use ice or refrigerated sea water to preserve fish and are typically based at a port in the Pacific Islands.

Target: Large yellowfin, bigeye and albacore tunas. The prime-quality yellowfin and bigeyes are often exported chilled to overseas markets for sashimi. Most of the albacore caught by longliners end up in cans.

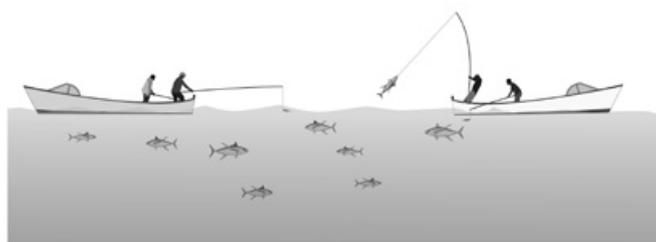
About 11% of the tuna catch in the WCPO region caught with longline gear – about 265,000 tonnes in 2011. Most of the longline catch is taken within 20 degrees of the equator.

Pole-and-line

As with purse seining, a school of tuna is spotted while it feeds on baitfish close to the surface. The pole-and-line boat is brought close to the school of tuna and left drifting while fishers throw small live bait and spray water to mimic the splashing of the school of bait. The idea is to trigger a feeding frenzy in the school of tuna. Fishers stand on the front deck and haul fish with a pole attached to a line ending with a lure and a barbless hook*.

Target: Mainly skipjack and small yellowfin tunas. Most of the catch is for canning or to make a dried product (called *katsuobushi* in Japan) sold to Asian markets.

About 12% of the tuna catch in the WCPO region is by pole-and-line gear – about 275,000 tonnes in 2011. In the 1980s, several Pacific Island countries had pole-and-line fleets, but most have stopped operating due to competition with the more productive purse-seine gear. In the Pacific now, most of the pole-and-line fishing takes place around Japan, and a few boats are still operating in Solomon Islands.



Note:

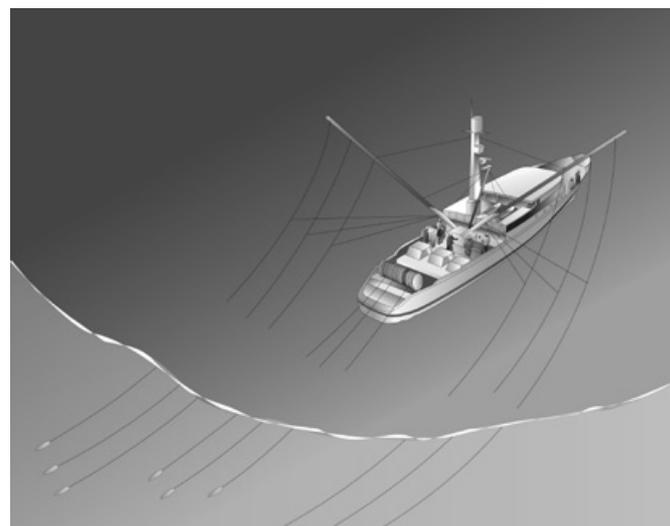
Several small-scale fishing methods and gear types are described in the 'Guide to information sheets on fisheries management for communities', including reef gleaning; spears; portable traps; barrier and fence traps; baited hooks and lines; lures for trolling; as well as cast nets, scoop nets, gill nets, seine nets and ring nets.

Troll

Several lines are trolled behind the boat with lures at the end.

Target: Large-scale tuna trolling boats target albacore for canning.

Gear types other than the three listed above are responsible for about 13% of tuna catch in the WCPO. Large-scale trolling is one of these. It is carried out in temperate waters to the south and north of the tropical Pacific Ocean (mostly south of 25°S and north of 25°N). Trolling in the south results in a catch of about 3,200 tonnes of albacore annually, which is almost exclusively sent to canneries.



Bottom trawl

A very powerful boat drags a trawl net along the bottom of the sea. The trawling can last from a few minutes to a few hours before the trawl net is hauled and emptied on the deck of the boat where the catch is sorted. Because of its lack of selectivity*, this technique harvests a large proportion of bycatch (unwanted species which are caught and thrown back dead into the sea – for example, up to 90% of catch in the shrimp fishery can be bycatch). It is mostly used in places where the seafloor is all sand or mud. It must not be used in coral reef areas as

1. it would destroy the corals, and
2. the trawl net would be damaged by the coral heads.

Target: All type of species that live close to the seafloor, such as shrimps and flatfish.

In the Pacific Islands, this technique is only used in the south of Papua New Guinea to catch shrimps.

