

## What are the problems?

**Declining sea turtle stocks:** Sea turtle populations are declining worldwide due to human activities including: destruction or disturbance of nesting beaches; hunting for food and sale; and incidental catches related to some fishing activities such as trawling, gillnetting, purse seining and tuna longlining.



**Perceived overfishing:** There is worldwide concern about the catch and use of pelagic sharks, and, to a lesser extent, marlins and other pelagic fish species by longline vessels. Some concerns are related to a belief that these species are being overfished, although current scientific evidence does not indicate this is true in the western and central Pacific.

**Seabird interactions:** The incidental take of seabirds by longline vessels (pelagic and demersal or bottom-set) has been widely publicised, although this mainly occurs with albatrosses in higher latitudes.

**Not working together towards practical solutions:** In some parts of the world there is an active movement to close down pelagic longline fisheries because of concerns regarding sea turtles and other bycatch. In many parts of the region, fishermen, governments and scientists are not working together to identify the extent of the problem and develop and apply workable solutions to reduce bycatch.

Release bycatch alive



## Contacts



**Secretariat of the Pacific Community**  
BP D5, 98848 Noumea Cedex, New Caledonia  
phone: +687 26 20 00, fax: +687 26 38 18  
e-mail: [fishdev@spc.int](mailto:fishdev@spc.int)  
web: <http://www.spc.int/coastfish>  
Attn: Fisheries Development Adviser



**South Pacific Regional Environment Programme**  
PO Box 240, Apia, Samoa  
phone: +685 21929, fax: +685 20231  
e-mail: [sprep@sprep.org.ws](mailto:sprep@sprep.org.ws)  
web: <http://www.sprep.org.ws>  
Attn: Marine Species Officer



**Western Pacific Regional Fisheries Management Council**  
1164 Bishop Street, Suite 1400  
Honolulu, Hawaii 96813 USA  
phone: +1 808 522 8220, fax: +1 808 522 8226  
e-mail: [info.wpcouncil@noaa.gov](mailto:info.wpcouncil@noaa.gov)  
web: <http://www.wpcouncil.org>  
Attn: Pelagic Director



**National Marine Fisheries Service  
Pacific Islands Area Office**  
1601 Kapiolani Blvd, Suite 1110  
Honolulu, Hawaii, 96816 USA  
phone: +1 808 973 2935, fax: +1 808 973 2941  
e-mail: [Karla.Core@noaa.gov](mailto:Karla.Core@noaa.gov)  
web: <http://swfsc.ucsd.edu/>  
Attn: Protected Species Workshop Coordinator



**Forum Fisheries Agency**  
PO Box 629, Honiara, Solomon Islands  
phone: +677 21124, fax: +677 23995  
e-mail: [info@ffa.int](mailto:info@ffa.int)  
web: <http://www.ffa.int>  
Attn: Observer Programme Manager



©SPC, Design by Jipé Le-Bars

*A message for all those  
involved or interested in  
tuna longlining*

# Tuna longlining the bycatch issue



Release bycatch alive



Release bycatch alive

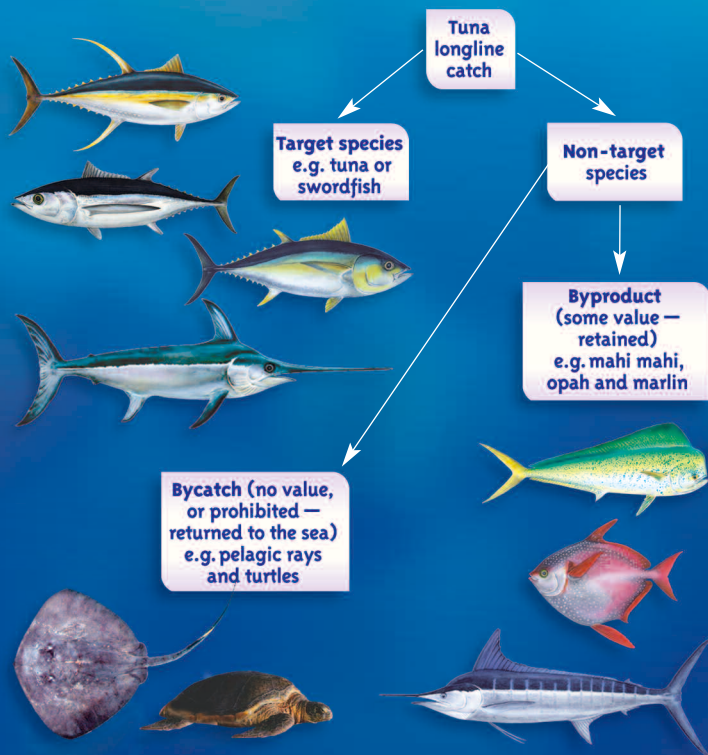


## What is bycatch?

Different fishing methods target different fish species — called the target catch — although non-target species are often caught at the same time.

Non-target species are either:

- **bycatch** or unwanted catch (discards) that is returned to the sea because it has little or no commercial value (includes protected species); or
- **byproduct**, which like target species, has a value and is kept and landed. In many countries it is an important part of the overall catch.



Release bycatch alive



## Why should fishermen care?

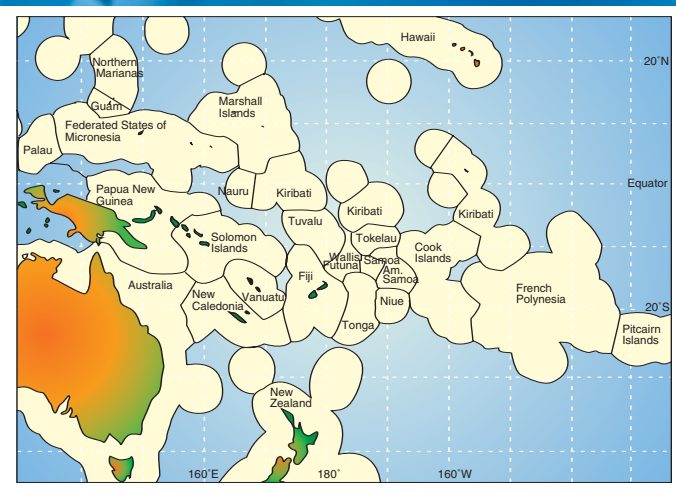
● The western and central Pacific Ocean (WCPO) supports the largest and healthiest tuna stocks in the world. Pacific Islanders can increase their participation in tuna fisheries by using sustainable and responsible pelagic longline fishing practices.

● Fishermen and nations have an international and moral obligation to look after the resources they harvest, including all byproduct and bycatch. It is especially important to minimise the incidental catch and/or death of protected species such as turtles.

● Higher catch rates of target species and reduced bycatch and bait loss can be achieved by altering fishing practices such as changing fishing depth or setting gear at night. It is in the interest of fishermen to avoid bycatch, so there are more hooks available for target species.

● Bycatch issues should be seriously addressed before restrictions and possible closures are imposed on fisheries.

● Self-regulation and the cooperative development of solutions by governments, researchers and fishermen is a better approach to solving the bycatch issue than the drastic measures that may be taken.



Release bycatch alive



## What can fishermen do?

● Follow the advice in this brochure and seek other ways to minimise the incidental catch of unwanted bycatch species.

● Cooperate and work with scientists, governments and non-governmental agencies to develop practical methods for reducing bycatch, while supporting viable fisheries.

● Keep good data in logbooks on all fishing activities, including the recording of byproduct and bycatch taken, or interactions with protected species.

● If a sea turtle is caught, follow the handling techniques in this brochure to maximise its chances of survival.

● Cooperate with observer programmes or the observer on board your vessel, as they are there to record catch data, including numbers of target, byproduct, bycatch and protected species for scientific analysis.



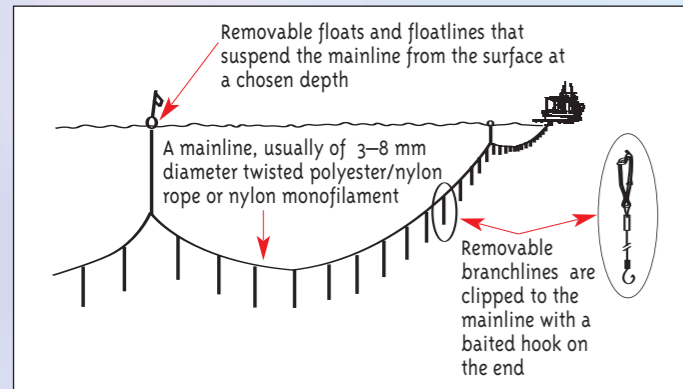
Release bycatch alive



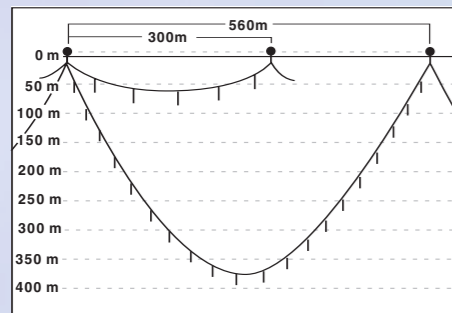
# What is tuna longlining?

Pelagic longlining uses baited hooks hanging from a long drifting mainline to attract and catch fish. This line is usually 10–180 km in length with 300 to 3500 branchlines, each with a single hook. Longlines with baited hooks and floats are usually laid out ('set') and pulled back ('hauled') once within a 24-hour period.

Pelagic longline gear consists of three major parts:



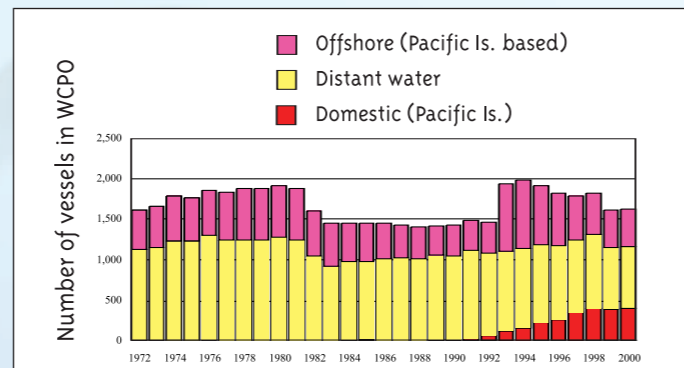
The shape of a longline, the number of hooks, the distance between floats, and the bait used will vary depending on the target species and the skipper's judgement. A shallow (35–110 m) set targeting swordfish will have fewer branchlines (4–6) between floats. A deep (300–400 m) set targeting bigeye tuna uses more branchlines (15–30) between floats, which results in a deeper sag of the mainline. Deep sets are also achieved by using a line setter or shooter (machine to shoot the mainline at a faster speed than the boat is travelling). Fishing depth strongly determines the species caught. Bait, time of setting and other factors will also affect the catch.



## The importance of tuna longlining

Pacific Island nations have substantially increased their involvement in tuna fishing over the last 10 years, while foreign longline vessel numbers have fallen. Domestic pelagic longline vessels and local processing facilities provide local employment and a better economic return to island economies. For some islands, tuna represents the only significant option for

economic growth and food security. Most island nations have not become involved in other large-scale tuna fishing activities, such as purse seining, because the costs involved are high and the risks are great.



Island nations are working to further develop and expand their pelagic longlining activities in a sustainable and responsible manner, as stewards of the resource.

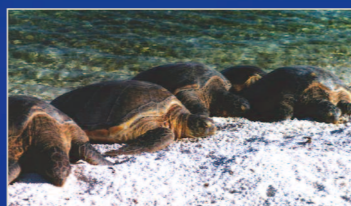
## Is longlining harmful to the environment?

Tuna longlines do not touch the seabed and so do no damage to habitat. Longlines are more selective than trawls or gill nets and can target specific species with minimal bycatch.

Pelagic longlines are low impact, using a large number of hooks spread over a wide area to specifically target tuna and related species. Catch rates of target species are generally low, with 2–3 target individuals (around 50 kg) per 100 hooks considered economically viable.

Unlike gill nets, lost longlines do not continue fishing and present much less of a hazard to marine life.

While longlining is relatively environmentally friendly, fishermen and scientists continue to work towards reducing negative impacts, especially on protected species. SPC and other organisations are collecting data on bycatch. American scientists in Hawaii and elsewhere are developing new techniques to reduce sea turtle bycatch and mortality. The region is demonstrating a proactive and responsible approach to dealing with bycatch and the sustainable harvest of target and byproduct species.



# How to reduce bycatch

Setting pelagic longline gear deeper than 100 m will reduce the incidental catch of many bycatch species (especially sea turtles). Setting deep (possibly using a line shooter) puts the bait in the zone where catches of albacore and bigeye (target species) will be maximised.

Not using squid for bait on shallow-set hooks (those closest to the float and floatline) will lessen the chance of hooking sea turtles, as squid is a favourite food of theirs.

Setting pelagic longlines at least 12 nm from a reef or island, and ensuring they drift offshore, will minimise interactions with reef sharks (not pelagic sharks) and some turtle species, as they do not venture far from the reef.

Using monofilament leaders (not wire) directly onto the hook will allow sharks to bite off the hook and escape.

The incidental catch of seabirds is not an issue in the western and central Pacific region (with the exception of Hawaii) because albatrosses and other large seabird species are not found in the region. Longline hooks are generally too large for the seabird species in the region to swallow.



## Releasing hooked turtles

The bycatch of sea turtles by pelagic longlining is an issue of great concern. The Hawaii-based longline fishery now requires all vessels to carry a long-handled dip net and long-handled clippers to help with the release of sea turtles. Fishermen from other Pacific Islands can use the techniques developed in Hawaii. If a turtle is caught, the following steps should be taken to give it the best possible chance of survival:

- 1 If the turtle is too large to bring on board, bring it as close to the boat as possible without putting too much strain on the line, then cut the line as close to the turtle as practical.
- 2 If the turtle is small, use a dip net to lift the animal on board. DO NOT use a gaff and DO NOT pull on the line or grasp the eye sockets to bring the animal on board.
- 3 If the hook is in the mouth area or it has been swallowed, place a piece of round wood (broom handle) in its mouth so it cannot bite.
- 4 If the hook's barb is visible, use bolt cutters to cut the hook in half, and remove the two parts separately.
- 5 If the hook is not visible, remove as much line as possible without pulling too hard on the line, and cut it as close to the turtle as practical.
- 6 Assess the condition of a turtle that has been brought aboard before releasing it.
- 7 If the turtle is sluggish or not active when lifted on board, it may have water in its lungs. In this case the rear flippers should be raised and kept around 20 cm off the deck while it is recovering.
- 8 In all cases, place the turtle in a secure shaded location of the boat. Cover the turtle's body with wet towels. DO NOT spray the turtle in the face with water or cover the animal's nostrils with the towel.
- 9 Keep the turtle on board for a minimum of 4 hours, and up to 24 hours, depending on how lively the animal is.
- 10 Carefully return the turtle to the water headfirst while the vessel is STOPPED and the engine is OUT OF GEAR. Ensure the turtle is clear from the vessel before motoring off.
- 11 Record the interaction in your logbook, identifying the turtle species if possible and recording tag numbers if the turtle has tags on its flippers.

Release bycatch alive



Release bycatch alive

