

# Destructive fishing

All fishing is destructive in some way. The removal of any marine species, particularly in large numbers, will affect the complex web of connections between all marine species. And most fishing methods catch other unwanted species referred to as by-catch.

Although fishing always affects the marine environment and ecosystems to some degree, some fishing gear and fishing methods are just too destructive and their use must be controlled.

Fishing can be regarded as destructive if it ...

- causes physical damage to nearby areas, say by digging up the sea floor or breaking coral
- kills a large number of species in addition to the ones being fished.
- is so efficient that not enough fish are left in the sea to reproduce

The last listed point is a difficult one. Most fishers want to fish as efficiently as possible. However, some fishing gear and methods are overly efficient – a small mesh net set across a gap in the reef, for example, may catch all fish attempting to swim through the passage.

The major aim in all fisheries management is to make fisheries sustainable. That is, to make sure that fisheries will still be there to provide seafood for our children and their children. We must always leave enough fish in the sea to reproduce and provide fish for the future. And, of course, we must look after the places in which fish live; we must take care of the environment – the coasts,

mangrove areas and reefs. And, as what happens on land will affect what happens in the sea, we must control run-off containing sediments and wastes.

The following is a list of damaging fishing gear and methods used in Pacific Islands.

## ► Explosives such as dynamite

Explosives such as dynamite (often obtained from mining operations, road works and even police) are used for fishing in some Pacific Islands. Explosives are either thrown from a canoe into a school of fish such as mullet, or set on coral where fish have been encouraged to gather by setting bait. Explosives are many times more damaging to small animals, such as fish larval stages and coral polyps, than they are to large fish. Although the use of explosives is illegal, the practice may be tolerated in isolated communities in which the illegally caught fish are shared. A cartoon used to make the public aware of the long-term damage done by using explosives for fishing is shown at right.

When you want a coconut  
you don't chop down the whole tree



**So, when you want a fish,  
DON'T kill the whole reef**  
People who use dynamite and chemicals  
to kill fish are destroying our reefs.  
They are also destroying our future.

All communities should support  
the national government in  
preventing the use of explosives  
for fishing.

## ► Toxic chemicals

In some countries, commercially available poisons such as bleach (sodium hypochlorite) are used to catch fish. Bleach may be poured into pools that have been isolated at low tide to stun and capture small coral fish. The bleach will also kill all other small animals, including corals, with which it comes into contact.

All communities  
should ban the use of  
chemicals for fishing;  
government should  
require that warnings  
are placed on  
containers of bleach.





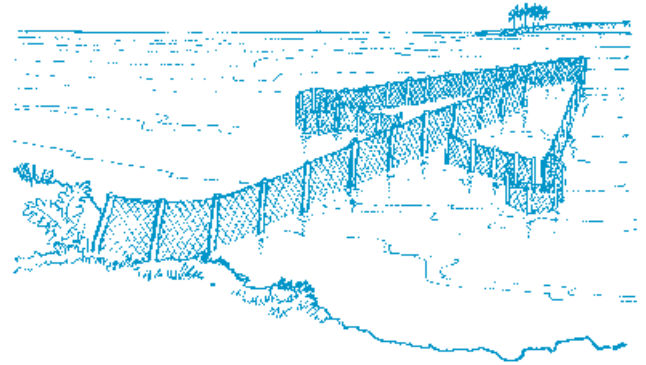
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### ► Fish traps and fences

Barrier and fence traps are some of the oldest ways of community fishing. The simplest traditional traps use the falling tide to strand fish in v-shaped or semi-circular walls of stone or coral. Barrier nets can be set across reef passages and channels to trap fish as they try to return to deeper water on a falling tide.

Fence traps usually consist of a fence or wall built at right-angles from shore-lines and reefs to guide migrating coastal fish into a large retaining area. When fish meet the fence they swim along it until they reach the retaining area from which it is difficult to escape. Designs are often traditional and vary between regions.

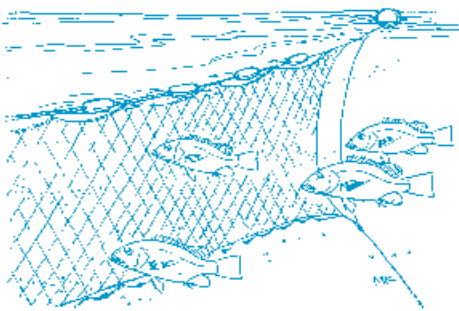
All communities should limit the number of fence traps that can be built in their adjacent fishing areas.



Although originally made from stone or coral blocks by an entire community working over many months, such traps are now usually made from modern materials such as wire-mesh netting as shown in the figure. Now each community may have several family-owned fence traps. The excessive use of fence traps has resulted in the loss of fish stocks such as mullet in Tonga. Some communities in Samoa have limited the number of fence traps that can be built in their adjacent fishing areas.

### ► Gill nets

Gill nets are panels of netting held vertically in the water by a series of floats attached to their upper edge (the floatline) and weights attached to their lower edge (the leadline). These nets are anchored in shallow water to catch several species of fish including mullet and mackerel. The nets are often made from almost invisible nylon strands, which lock behind the gill covers of fish, and are anchored in shallow water.



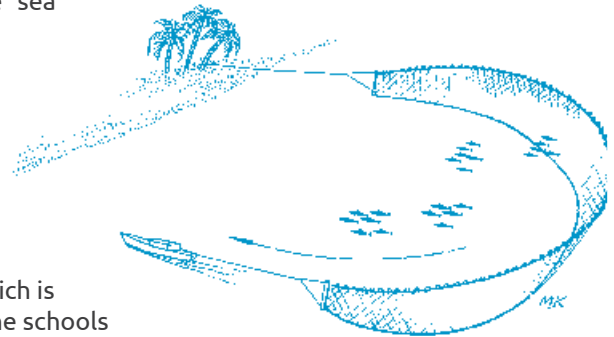
Problems occur when gill nets are set across narrow reef passages, channels or the mouths of rivers. In these cases, no fish will be able to pass the nets. This method of fishing is particularly damaging in cases where nets are set to catch fish swimming to a spawning aggregation site (see *SPC Information Sheet 24*).

All communities should place conditions on where gill nets can be used. Minimum mesh sizes have been set by many governments.

### ► Gear that is dragged across the sea floor

Fishing nets that are dragged across the sea floor are more damaging to the environment than nets that are left in one position. Trawl nets are towed behind fishing boats to catch species such as prawns in Papua New Guinea and Hawaii. These nets catch large numbers of different marine species and can damage large areas of the sea floor.

A seine net (sometimes called a beach seine if it is set from the shore) consists of a long panel of netting which is set around shore-line schools of fish and dragged ashore. The net is weighted to keep the lower side of the panel in contact with the sea-floor, and has floats to keep its upper side at the sea's surface. Some beach seines have a central panel of loose netting which forms a bag (or codend) to retain fish. Ways of employing beach seines vary, although in many cases, one end of the net is anchored on the shore, and a boat is used to set the net in a large arc and back to the shore before hauling (see illustration). However it is used, a seine net will catch most fish in its path and can damage coral and beds of seagrass.



All communities should place conditions on where beach seines can be used and require minimum mesh sizes.



