

Fishing is the activity of trying to catch fish

The following are some of the modern fishing methods

Purse seine

In purse seine fishing, the most common way fish are caught, a boat locates a school of fish, then using either a crane or small boat, take one end of a net around the school and back to the fishing vessel. The ends of the net are synched together like a drawstring bag and pulled a board with the fish inside.

Because purse seining targets a particular school of fish after it has been located by catch is extremely low. Sometimes fishing boats will deploy floating objects like big rafts or floating barrels to attract fish (fish love structure); these fish aggregating devices (fads) make seining much easier by reducing fuel use and time spent looking for schools of fish, however fads also attract other marine life and by catch is higher

Over half of all tuna is caught using purse seines when using fads by catch ranges between 1-8% whereas without FADS by catch is less than 1%

Trawling

Trawling is dragging a net through the water behind a boat. There are two different in bottom trawls and mid water trawls

Bottom trawl

Bottom trawls involve weighing a net down to the sea floor then dragging it across the bottom to scoop up fish

By catch is not overly concerning with bottom trawls but habitat damage is sandy bottoms and rocky environments regenerate fairly quickly after a bottom trawl net comes through but bottom trawls can significantly impact sensitive habitat like deep water coral or sponge gardens

Good fishery management ensures that bottom trawling is done in sustainable areas and not in places with irreplaceable habitat

Midwater trawl

Midwater trawl pull a net through the water off the bottom by catch is low.

Gill net

Gill nets are set up to be a wall with holes in it. Fish unknowingly swim into it and get stuck

Gill nets don't require a boat with a big engine so they are often used in less developed areas of the world.

Gill nets have the most by catch of any kind of fishing net, but their use has been declining. Gill nets can be sustainable in some cases for example salmon congregate at choke points that can be walled off without affecting other species. Gill nets that are not set at a particular location and drift with the current are called drift nets. These also have serious issues with by catch.

Fishing with line

Long lines

Long lines are very long fishing lines that have a hook every few feet they can be many miles long.

By catch in long line fisheries is highly variable depending on the fishery. Halibut long lines in Alaska have very little by catch while long lines meant to harvest tuna catch about 20% by catch issues in long lines are more common in fisheries close to the surface where sea birds, sharks and turtles get caught eating baited hooks. Regulations are better in higher capacity countries where fishery managers can require specialized hooks and weights that reduce by catch.

Pole and line

A fishing pole and line catches fish individually. There is no concern over by catch

Harvesting shellfish

Dredging is similar to bottom trawling but instead of a net, a metal rake of sorbs is dragged across the bottom to collect shellfish and bivalves buried in the substrate e.g. scallops, clams or muscles.

By catch is low but the same consideration apply for bottom trawling. Good fishery management ensures that dredging is done in sustainable sandy areas and not in places with irreplaceable habitat

Traps and pots

Traps and pots are mainly used to catch invertebrates like crab and lobster. Traps or pots are dropped to the bottom with bait to attract crab and lobster. Once they crawl inside, they can't escape and are pulled back to the surface when the fishers return.

By catch is not a problem, but sometimes gear gets swept away or fishers forget where they set their traps. This has led to some whale entanglement, particularly on the west coast of the U.S. Some states have started offering reward to people who collect escaped traps and pots

Diving

Some commercial fisheries, like sea urchin, geoduck and sea cucumber are harvested by divers.

All in all the above are some of the modern fishing methods.