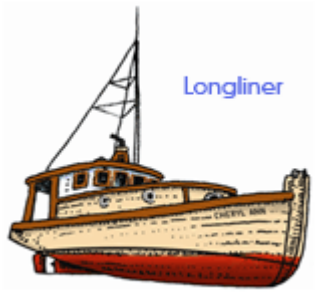
NOAA Fishwatch - Fisheries Gear[1]

Basic fishing technology - the use of hook and line, or nets - to catch fish, is as old as human civilization itself. Advances in technology have vastly improved the ability to find fish, process and store fish, and transport fish and seafood products. Technology has also improved our ability to target individually sized fish, reduce the impacts of bycatch, and reduce impacts of gear on the ocean environment. The following descriptions explain how some commonly used fishing vessels work.

Gillnetters are commonly deployed in Pacific Salmon fisheries, primarily sockeye, chum and Coho. They work by setting curtain- like nets perpendicular to the direction which the salmon are traveling. The net has a float line (corkline) on the top and a weighted line (leadline) on the bottom. The mesh is designed to be just large enough to allow the salmon to become entangled at their gills. Gillnet vessels are typically around 30' to 40' long. They are easily recognized by the hydraulic-powered drum onto which the net is rolled. The drum can be located on the back or the front of the vessel.



Longliners can either target on bottom fish like lingcod, halibut, pacific cod and sablefish, or pelagic fish like swordfish. In bottom longlining, a line, up to a mile in length, is anchored on the seafloor with buoy lines marked with flags at either end. The line can have up to a thousand baited hooks attached to leaders, called gangions, and are deployed for up to 24 hours, depending on the fishery. Pelagic longliners work the same way but with the gear suspended in the water column held up with floats.

Purse Seiners like this one catch schooling fish like salmon, menhaden or herring by encircling them with a long net and drawing (pursing) the bottom closed to capture the fish within. Seiners can be recognized by their long, clean decks, large boom and power block, net stacked on back, and the power skiff used to help maneuver the net. The skiff is often seen riding "piggyback" aboard the vessel's stern while traveling.

Larger Purse seiners are used in tuna fisheries and are often at sea for several weeks at a time. Large tuna purse seiners may even have helicopters on board to transport crew and to spot large schools of fish.

[1] This information was copied from NOAA's FishWatch page on Fisheries Gear in January 2011. Please check online for the latest information: http://www.nmfs.noaa.gov/fishwatch/fishinggears.htm.

Large Purse Seiner

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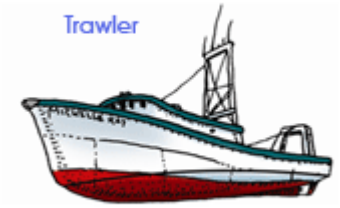

A **trawler** is a vessel that drags a funnel-shaped net through water to harvest fish or shrimp. The net is wide at the mouth and tapers back to a narrow cod end that collects the catch. The average bottom trawl opening is 40 to 60 feet wide and 8 to 10 feet tall. Bottom trawlers usually tow their nets at 1 to 2 knots on or above the ocean floor. Fishermen tow midwater trawls faster to catch faster-swimming schooling fish. Trawlers have a large metal trawl door that acts like a foil in the water pulling the net open when the net is deployed. The nets are usually hauled aboard on a ramp located at the stern end of the boat with the help of heavy-duty winches. Older trawlers without inclined ramps haul their nets over the sides using a haul line and a block on an overhead boom to bring in the cod end of the net.

Trawlers catch a wide variety of fish and shrimp including rockfish, cod, sablefish (black cod), ocean perch, flounder, and sole. Trawls can be designed to catch particular groups of fish through adaptations to the mesh size of the net.

Large trawlers work by dragging a net through the water catching schooling fish like walleye pollock. These boats can be up to 600 feet in length and can even have entire fish processing facilities on board. Most trawl nets have "doors" large metal or wood devices that keep the net open as it moves through the water. Some have a heavy weighted bottom line with wheels to help the net move along the seafloor. The end of the net, the "cod end" is like a large pocket that holds the captured fish. Mesh size in the net and cod end determine what size fish are caught and what size gets away.

Troll Vessel

Troll vessels catch salmon, principally chinook, coho and pink salmon by "trolling" bait or lures. Usually this means four to six main wire lines are fished at a time, each with a 50 lb. lead "cannon ball" weight and between eight to twelve nylon leaders spaced out along its length. Each nylon leader contains a lure or baited hook. Trollers come in a variety of lengths and styles, but can be largely recognized by the long mast poles that are used to relay the wire lines out into the water.

Sport Fishing Boat

By far the most common type of fishing vessel is the **sport fishing boat**. These boats can be spotted in most any marina or harbor in the U.S. Sport boats typically rely on hook and line fishing but can also be used to deploy traps or nets. There are an estimated 17.7 million sport fishing boats in the United States. Recreational anglers take an average of 89 million fishing trips per year.

NOAA Ocean Science Vessel

NOAA maintains a fleet of 18 fisheries and **ocean science vessels** to carry out a number of science objectives. These vessels are deployed around the world and each is specifically fitted to the type of research it does. New vessels like the**"Oscar Dyson"** have been designed to assist fisheries scientists with state-of-the-art acoustic quieting technology, which enables NOAA scientists to monitor fish populations without altering their behavior. *Oscar Dyson*'s capability to conduct both fishing and oceanographic research is unique among research vessels and a value to its users. For more information on the NOAA Fleet, please **visit us online.**