

# Fishery Basics – Fishing Vessels

## Fishing Vessel Types

Fishing vessels are typically designed with a specific purpose. That purpose is to locate, **catch**, and preserve fish while out at sea. The planned operations of a vessel determine the overall size of the vessel, the arrangement of the deck, **carrying capacity**, as well as the machinery and types of equipment that will be supported by the vessel. Due to the inherent differences in **fishing communities** around the world, there is a wide range of types and styles of fishing vessels. Vessel sizes can range from the 2 m (6 ft) dug out canoes used in **subsistence** and **artisanal** fisheries, to factory ships that exceed 130 m (427 ft) in length. Commercial fishing vessels can also be characterized by a variety of criteria: **types of fish** (See Biology & Ecology) they catch, **fishing gear and methods used** (See Fishing Gear), capacity and **processing** capabilities, and the geographical origin of the vessel. In 2002, the United Nations Food and Agriculture Organization (FAO) estimated the **world fishing fleet** had approximately four million vessels, with an average vessel size ranging from 10-15 m (33-49 ft). Based on a **quarterly catch statistics report**, published by the **Pacific Fisheries Information Network (PacFIN)**, approximately 1,950 vessels landed their catches in California ports.

Due to the technological innovations that began in the 1950s, many fishing vessels are now classified as **multi-purpose vessels**, because of the ability to switch out gear types depending on the targeted species. However, single use vessels still exist in the world fishing fleet today. The **United Nations Food and Agriculture Organization (FAO)** has identified eight general vessel classifications by fishing method, which we have provided detailed information on. Most, if not all, modern **commercial** vessels are also equipped with advanced technological equipment for navigation and fish finding.

## Line Vessels

Line vessels are boats that fish using **hook-and-line gear** (See Fishing Gear). There are four primary classifications of line vessels: jigger vessels, longliners, pole and line vessels, and trollers.

### *Jigger Vessels*

There are two main types of **jigger vessels**, large specialized Squid jigger vessels that work primarily in the southern hemisphere, and smaller vessels operating in northern waters. Jigger vessels operate by deploying a number of lines, with multi-pronged lures (often called **jigs**) or baited hooks, from the sides of the boat. The lines are attached to jigger winches (typically on the larger Squid jigger vessels) or jigger machines (on the smaller vessels targeting Cod). The jigger winches/machines cause the lures to move in a jerky, vertical motion in the water column, which

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simulates the realistic movement of the targeted species' prey. Squid jiggers are equipped with high-powered lights that are used to attract Squid to the surface and the lines.

Vessel size varies from small vessels that only fish for a target species, to larger vessels (60 m, 197 ft) that fish and **process** the catch on board.

## *Longliners*

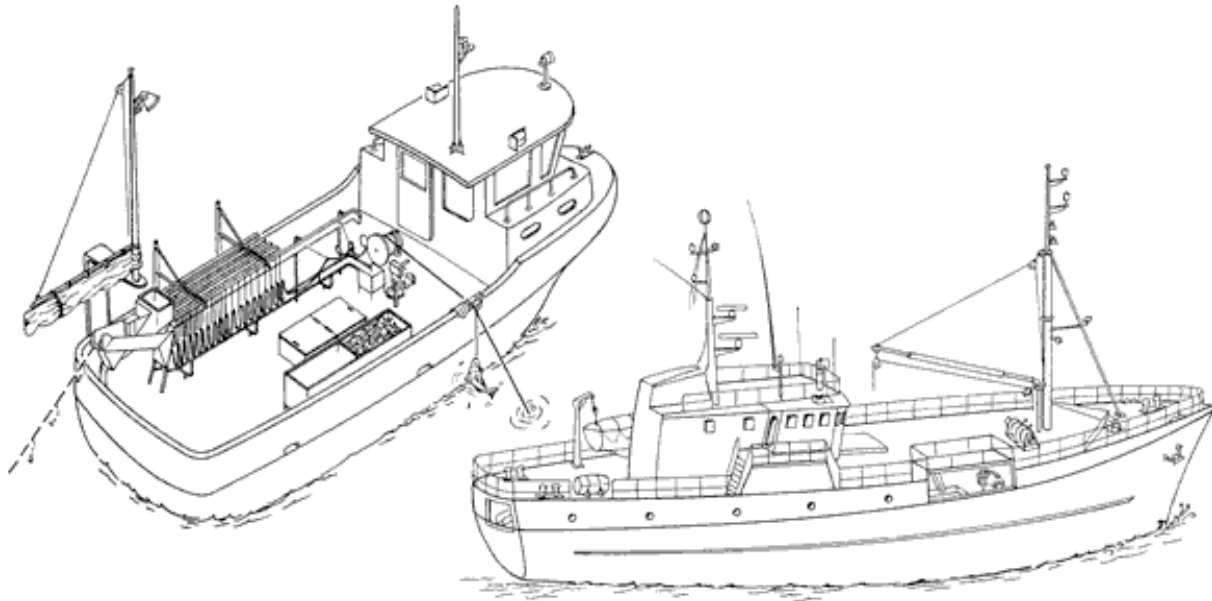


Illustration of a small longliner (left) and a large longliner (right). (Credit: Food and Agriculture Organization of the United Nations)

**Longliners** deploy one or more fishing lines, each with a series of baited hooks hanging on smaller branched lines. Longlining can be done from any sized vessel; however, vessel size, capacity, and mechanical features determine how long the lines can be and how many hooks can be used per line. Large longliners might use lines up to 40 miles in length, which are stored on large mechanized drums when not in use, while small longliners might only deploy lines that are less than 1 mile in length.

Longliners can be further classified by where they target their catch in the water column (bottom or midwater) or their processing capabilities (wet-fish, freezer, factory).

- **Bottom longliners** use a line (sometimes called a **setline**) that lies along the seafloor with anchors and surface buoys attached at the two ends. These longliners often target **demersal** species like **Sablefish**, **Rockfish** and **Halibut**.

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- **Midwater longliners** are typically medium sized vessels that operate worldwide targeting large **pelagic** species. These longliners set the lines hanging in the water column with multiple surface buoys throughout the line.
- **Wetfish longliners** are small sized vessels that store fish in boxes covered by ice or have a hold that is filled with ice.
- **Freezer longliners** are medium to large sized vessels that are equipped with refrigerating plants and freezing equipment.
- **Factory longliners**, the largest longliners, generally over 45 m (148 ft) in length, are equipped with processing plants capable of gutting and filleting the catch as well as storing the products.

## *Pole & Line Vessels*

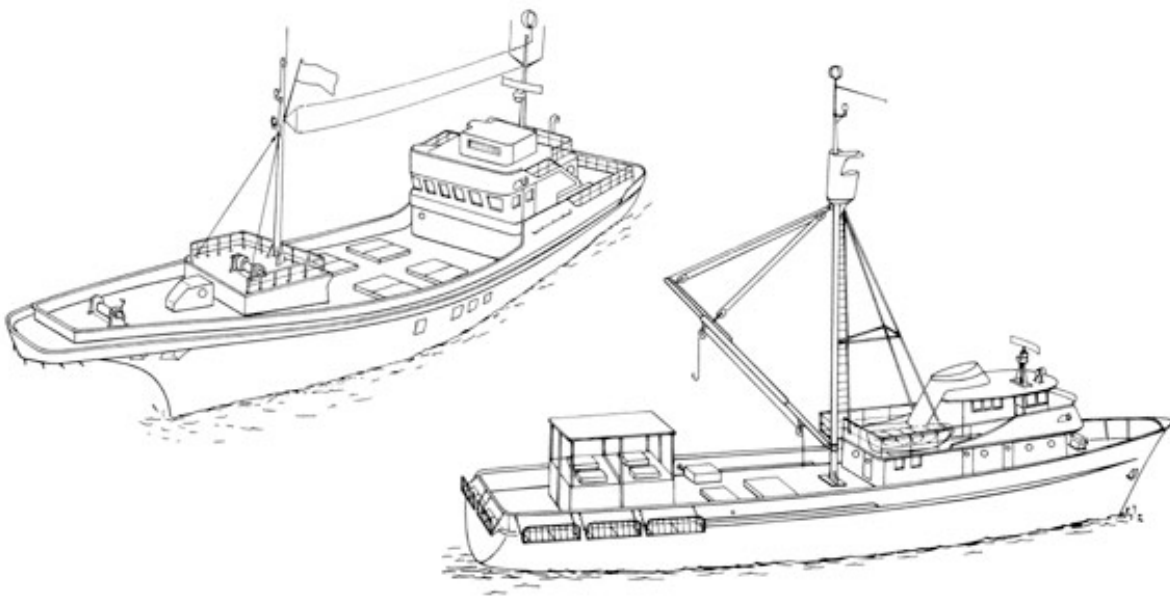


Illustration of a Japanese type (left) and an American type (right) of pole and line vessels. (Credit: Food and Agriculture Organization of the United Nations)

**Pole and line vessels** are vessels that range in size from 10-45 m (33 -148 ft) in length. Fishermen use traditional rod and reel setups to catch the target species. Tuna and other pelagic species are commonly targeted on commercial pole and line vessels. There are two general types of pole and line vessels: an **American type** and a **Japanese type**. On the American type vessels, the fishermen fish from platforms located around the **stern** (back) of the boat while the boat continues to move forward. On the Japanese type vessels, the fishermen fish from the railings around the **bow** (front) of the boat while the boat drifts with the ocean current. Typically, the boats are equipped with tanks to hold live bait and water spray systems that can be used to attract fish. Larger vessels may have a refrigerated hold, which allows them to remain at sea longer,

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while smaller vessels generally store their catch on ice and only remain at sea for a couple of days at a time.

## *Trollers*

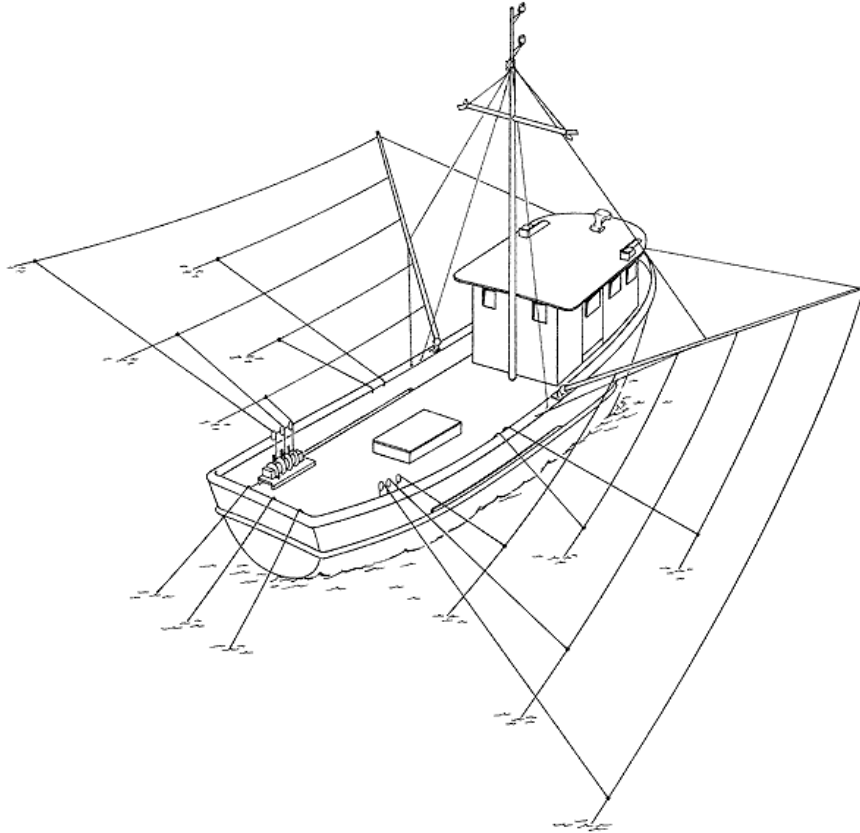


Illustration of a troller with multiple lines deployed from the outriggers (poles to the side) and stern. (Credit: Food and Agriculture Organization of the United Nations)

**Trollers** are vessels designed to catch fast-swimming fish, such as **Albacore Tuna** (See California Fisheries) and **Chinook Salmon** (See California Fisheries), by dragging baited hooks or lures through the water. Troll vessels may travel at speeds from 2.3-7 **knots** (2.6-8.1 mph) or more, depending on the targeted species.

Troll vessels can range in size from small open boats and canoes, to large vessels with refrigeration that are 30 m (99 ft) in length. Many vessels are equipped with **outriggers** or trolling booms, which allow for the deployment and separation of multiple lines. Trollers are usually equipped with powered reels or winches to haul in the lines. Engines typically power trolling vessels, but sails are used also, especially in small artisanal fisheries. Depending on handling and processing capabilities aboard, trolling vessels remain at sea fishing from a single day to a month or longer.



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## Additional Resources

### **National Marine Fisheries Services: Fisheries Gear**

(link to: <http://www.nmfs.noaa.gov/fishwatch/fishinggears.htm>)

### **National Marine Fisheries Services: Interactive Illustration with Vessels, Gears and Species**

(link to: <http://www.nmfs.noaa.gov/speciesid/Sustainability.html>)