

# 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.

## Trawlers

**Trawlers** drag funnel-shaped **trawl nets** (See Fishing Gear) through the water to catch fish or **shellfish**. There are two general methods in which trawlers operate:

1. **Bottom/Benthic Trawlers**: Bottom or **benthic** trawlers are designed to drag the trawl nets either just above or along the seafloor, targeting various types of **groundfish** like **Sole** (See California Fisheries) and semi-**pelagic** species like **Ocean (Pink) Shrimp**. Fishing bottom trawlers generally travel no faster than 4 **knots** (4.6 mph).
2. **Midwater/Pelagic Trawlers**: The vessels of midwater or pelagic trawlers are similar to bottom trawlers but are designed to fish within the water column targeting schooling **pelagic** fish like **Pacific Hake** and **Widow Rockfish**. Midwater trawlers are generally larger than bottom trawlers because the trawl nets used are larger and must be dragged at greater speeds in order to target the faster swimming pelagic fishes.

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Images of a large stern trawler (left; Credit: NOAA, Nance S. Trueworthy) and a smaller shrimp trawler (right; Credit: NOAA, William B. Folsom) at docks.

Trawlers can further be classified by the type of trawling gear that is used:

- [Beam trawlers](#)
- [Otter trawlers](#)
- [Pair trawlers](#)
- [Side trawlers](#)
- [Stern trawlers](#)
- [Outrigger trawlers](#)
- [Freezer \(factory\) trawlers](#)
- [Wetfish trawlers](#)

The size and deck layout of trawler vessels vary with differences in gear. For example, modern trawlers can range from the 15 m (50 ft) shrimp trawlers used in the Gulf of Mexico to the 144 m (472 ft) [F/V Atlantic Dawn](#), the world's largest **freezer (factory) trawler**. Crew sizes vary with the size of the trawlers; generally trawlers that are 20-30 m (66-98 ft) in length, like bottom trawlers used within the [Monterey Bay National Marine Sanctuary](#), utilize crews of 3-5 people, while factory trawlers can have crews of 60 or more people.

Today trawlers can be [found fishing](#) from the shallow waters of the world's coastlines to depths of 2,000 m (6,560 ft). In 2010, the [Pacific States Marine Fisheries Commission](#) reported that 75 trawlers operated off the Pacific coast of the United States, with 58 of those vessels landing their catches at [California ports](#) (See Top U.S. Fishing Ports).

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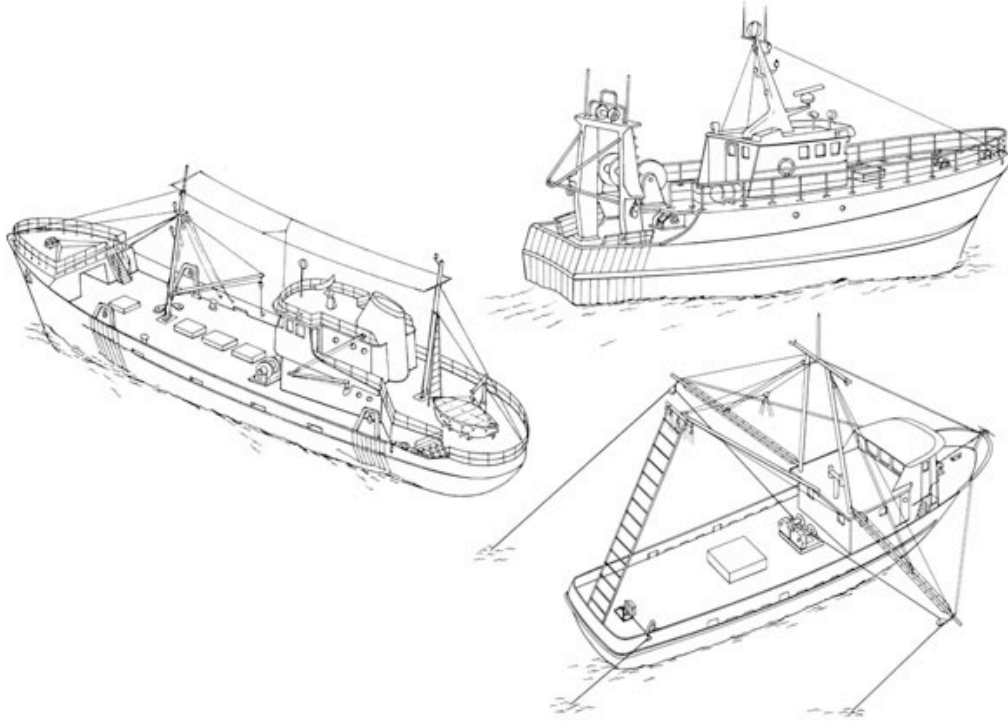


Illustration of three types of trawlers: side trawler (left), stern trawler (top right) and an outrigger trawler (bottom right). (Credit: Food and Agriculture Organization of the United Nations)

## References

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## Additional Resources

### **International Council for the Exploration of the Sea: Trawl Survey Details**

(link to: <http://datras.ices.dk/Home/Descriptions.aspx>)

### **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>)

### **NOAA Office of Law Enforcement: Vessel Monitoring Systems**

(link to: <http://www.nmfs.noaa.gov/ole/vms.html>)

### **World Resources Institute: Known Trawling Grounds of the World**

(link to: [http://earthtrends.wri.org/maps\\_spatial/maps\\_detail\\_static.php?map\\_select=197&theme=1](http://earthtrends.wri.org/maps_spatial/maps_detail_static.php?map_select=197&theme=1))