Seaweek™



marine bycatch matters

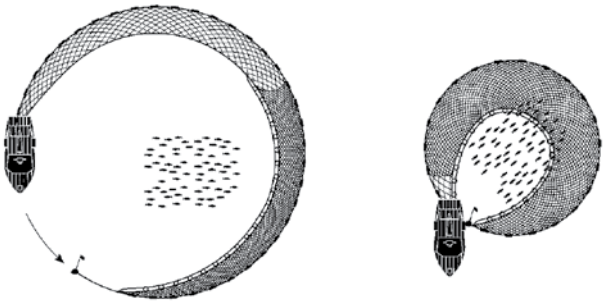
4-10 March 2007

Fishing methods

The wide range of fishing methods and gear currently used in the Australian fishing industry reflects the characteristics of the species targeted by commercial fisheries. The following is a summary of the main commercial fishing methods used.

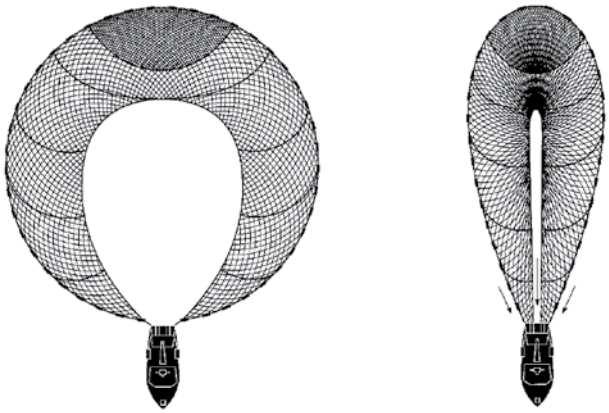
Purse seine

Purse seine nets are constructed with mesh of a size smaller than the fish being targeted. A skiff or buoy anchors one end of the net while it is set around a school of fish, after which a purse line is pulled to close the bottom of the net. Purse seine nets are used to target high-volume schooling species including tunas, in coastal and oceanic waters.



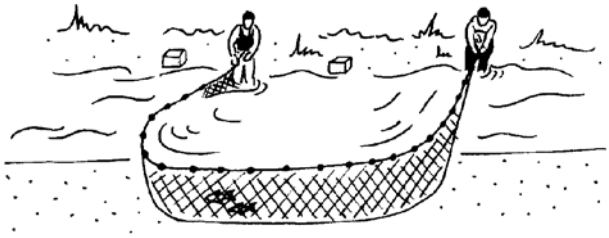
Lampara net

The lampara net is similar to a purse seine, but it has tapered panels to give a characteristic scoop shape rather than being flat. The lampara net is set around a school of fish and when both ends are retrieved the vessel tows the net forward, closing the bottom and then top of the net. This type of net is used to catch pilchards and anchovy in inshore waters.



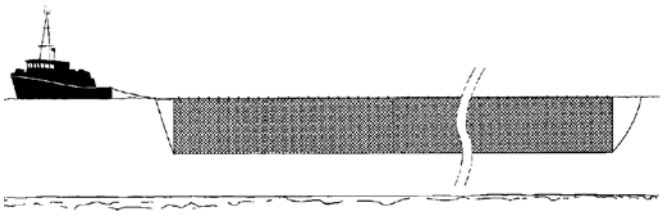
Beach seine

The beach seine net is set parallel to the shoreline, some distance off the beach, usually by a dinghy. One haul line is retained on the beach while the dinghy returns the other and both lines are hauled until the seine net and entrapped fish are dragged onto the shore. Beach seine nets are used to catch many species, including mullet, Australian salmon, whiting and tailor.



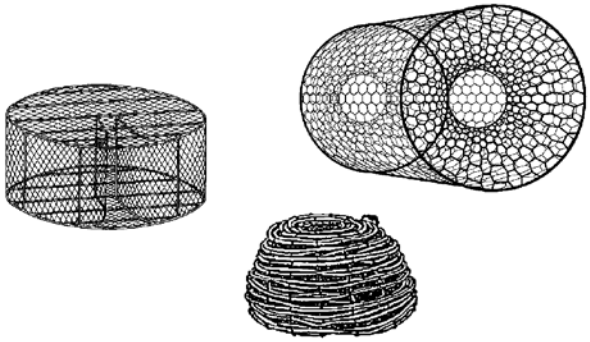
Gillnet

Panels of a gillnet net are set vertically in the water column to entangle fish. They can be set at the sea surface or in contact with the seabed. The size of the mesh in the net determines the size range of the species caught, as smaller fish can swim through the mesh and fish that are too large tend to bounce off.



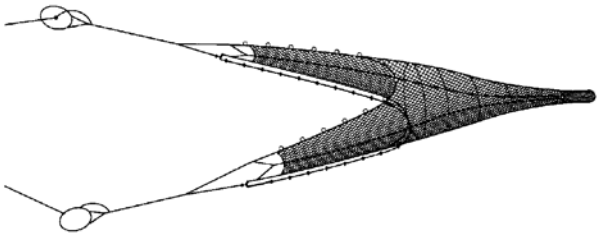
Pots and traps

Traps are usually baited and set on the seabed with a line to a surface float. A wide range of trap designs is used to take crustaceans such as lobsters and crabs, and some species of fish. Pots and traps are set in a range of depths from a few metres to deeper than 200m.



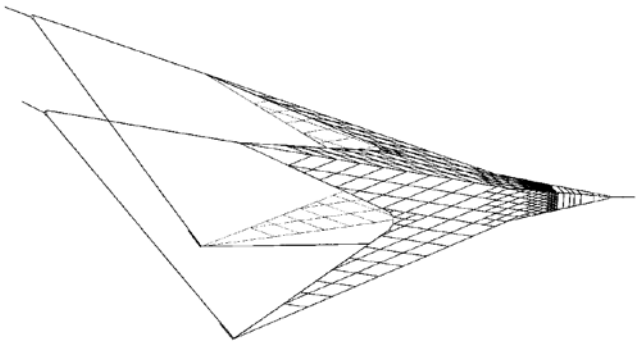
Bottom otter trawl

The bottom otter trawl consists of a cone-shaped net, held open across the seabed by large hydrodynamic plates called 'otter boards'. The otter boards are usually attached to the net by lines called sweeps, which are often quite long relative to the net width, and these sweeps aid in herding fish towards the net mouth. As the net is pulled along, fish accumulate in the rear section, or cod end, of the net. Depending on the vessel and gear, bottom otter trawling can occur to a depth in excess of 1500m, but generally in depths less than 1000m.



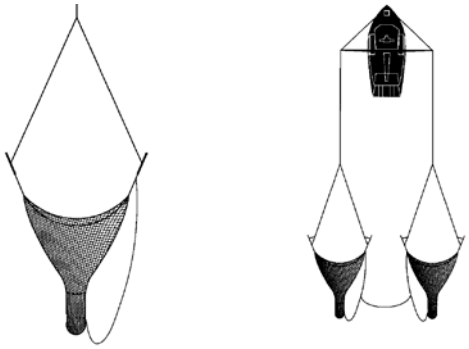
Mid-water trawl

The mid-water trawl is usually much larger than a bottom trawl and designed to fish off the seabed, in mid water. Otter boards maintain the horizontal opening. Floats on the headline (at the top) and weights on the groundline (at the bottom) maintain the vertical opening. Mid-water trawl gear is used to target species such as blue grenadier off western Tasmania.



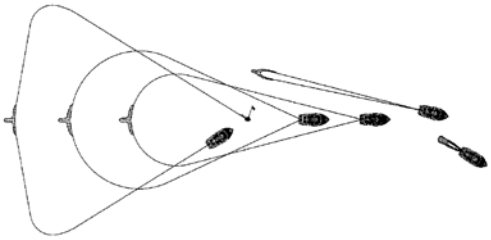
Prawn trawl

Prawn trawl nets are similar to bottom otter trawls but do not use sweeps. Chains are hung below the footrope to disturb the prawns, causing them to 'jump' into the path of the oncoming net. A single vessel commonly tows arrays of two, three or even four such nets. Prawn trawling of this type is generally limited to waters shallower than about 80m.



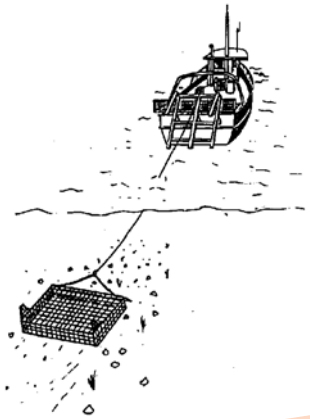
Danish seine

Danish seine nets are a cross between a trawl net and a seine net, in terms of shape. The line and net is laid out in a pear shape and then hauled back to the stationary or slowly steaming vessel in a similar fashion to a bottom trawl. The two lines act as 'sweeps', herding fish towards the net. Danish seine gear is used on the continental shelf to target flathead, whiting and morwong.



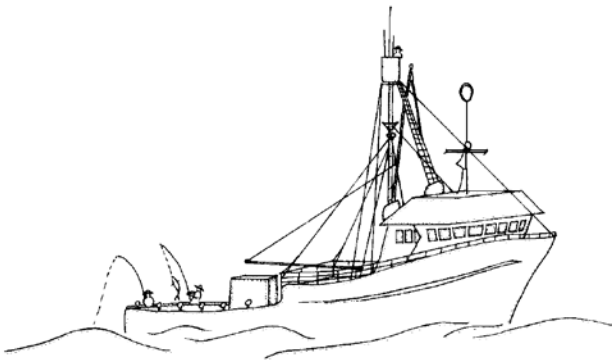
Scallop dredge

Scallop dredges are mainly box-shaped, mud dredges, up to 3.5m wide, dragged along the seabed, digging into the substrate to collect animals on and within it. Scallop dredges are used in relatively shallow continental shelf waters, to a depth of 100m.



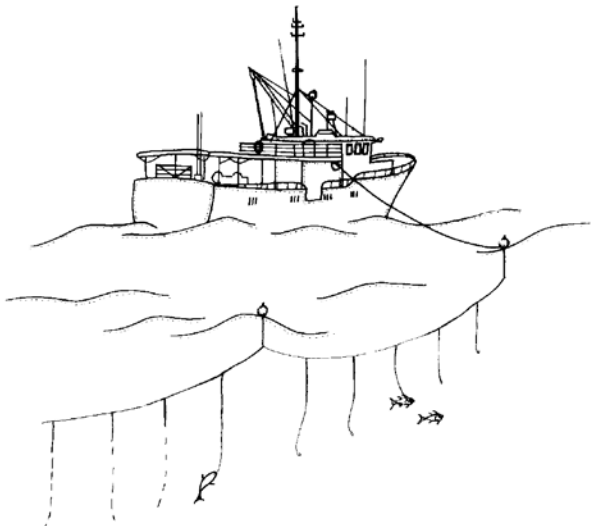
Pole and line

Surface-swimming schools of tuna are attracted to the fishing vessel using live or dead bait. The tuna, in a frenzy of feeding, take a barbless hook and lure and are hauled aboard using a pole and short, fixed line. Pole and line may be combined with purse seining to attract and aggregate a school of fish, around which the net is set. The pole boat subsequently escapes over the top of the purse seine net.



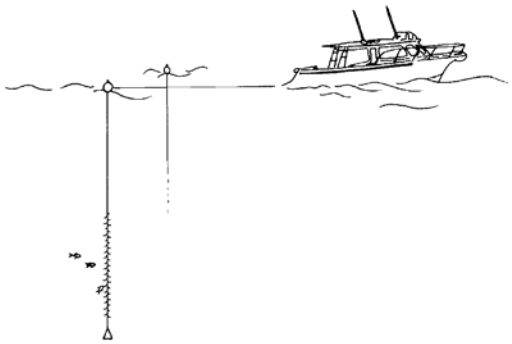
Pelagic longline

Pelagic longlines comprise a mainline suspended horizontally by floats. Branch lines, each with a single baited hook, are attached to the main line at regular intervals. The line is allowed to 'soak' for several hours before retrieval. Pelagic longlines are used to catch tuna and billfish in oceanic waters and usually hooks are set shallower than 300m.



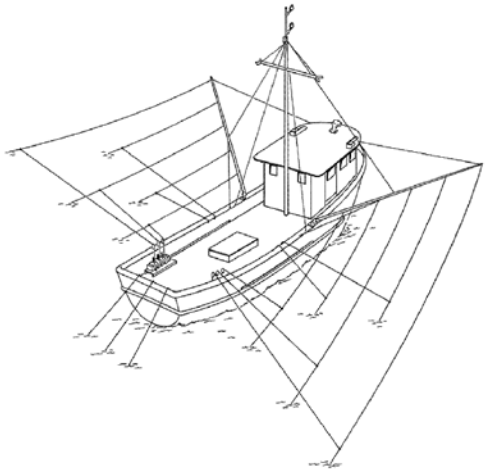
Dropline

A dropline is a single main line, with numerous baited hooks (usually no more than 100) attached to the bottom portion of the line via branch-lines and clips. The main line is set vertically in the water column, between a large surface float and a bottom weight. Droplines are regularly set to depths greater than 500m and catch blue-eye trevalla and hapuku among other species.



Troll

Troll lines are run from the stern (rear) of the vessel and from booms on the side of the vessel. Hooked baits and lures are pulled through the water behind the moving vessel. Trolling is used to catch tuna and mackerel in coastal waters and waters off the continental shelf.

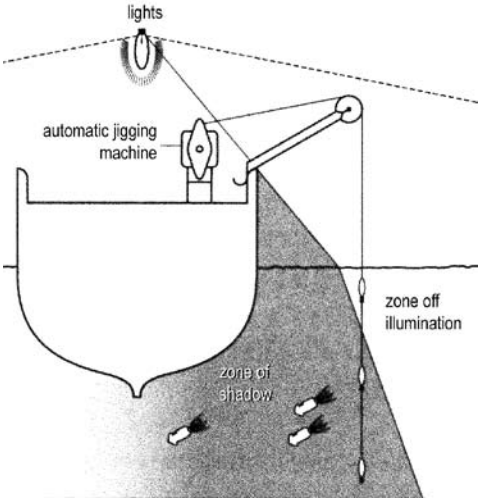


Bottom longline

A bottom longline consists of a mainline, with attached branch-lines and hooks, which are set across the seabed. Variations can have floats incorporated to lift the baits away from the bottom. Bottom longlines are used to catch ling and school shark among other species.

Squid jig

Squid jigging occurs at night, with bright lights attracting squid to the vessel's side. Lines with several barbless lures are 'jigged' up and down and squid caught on the lures are hauled onto the vessel. Most squid vessels in Australia use automated, mechanical jigging machines. Squid jigging occurs mainly in coastal waters.



Acknowledgement

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