

## GEAR TECHNOLOGY NOTE – Static Gear

The gear is set in the water to allow fish to swim into it, or they are attracted to it by bait and consequently become caught by the gear.

Gill Nets	<i>Sheets of thin netting anchored in the water to catch fish by enmeshing or entangling them.</i>
Drift Nets	<i>Sheets of thin netting allowed to drift with the tide or current to catch fish by enmeshing or entangling them</i>
Trammel nets	<i>Type of gill net using several layers of netting</i>
Long Lines	<i>Extremely long lines, with numerous baited hooks, that can be anchored or drifting.</i>
Traps	<i>Structures into which fish or shellfish are guided or enticed through funnels that encourage entry but limit escape. Pots, creels, fish traps etc.</i>
Jigging	<i>Using artificial jigs (lures) to attract and catch fish on hooks.</i>

### Gill Net



Gill nets are usually rectangular sheets of netting hung like a curtain in the water to catch fish by enmeshing or entangling them as they swim into the net. The net consists of a single wall of netting weighted at the bottom and supported at the top by floats attached to a headline so that it hangs vertically in the water column. Floats are attached to the headline the number and distance apart depending on the floatation required the footrope is weighted either with individual lead weights or by a continuous braided sheath.

A true gill net actually catches fish by the gills as they try to swim through individual meshes of the net. Trammel and tangle nets are types of gill nets but are made in such a way that the fish become entangled by several meshes when hitting the net. Gill nets may be anchored to the seabed (fixed nets) or allowed to drift with the tide or current.

## **Tangle Nets (Single walled nets)**

In areas where tangle nets are used, such as the monk, turbot, ray and crawfish fisheries, the nets resemble gill nets in their design. The main differences are the greater amount of slack netting set onto the headline, less floatation and a smaller vertical height of netting, the result is a much more loosely hung net and effectively entangles species with protruding spines such as rays and monkfish etc.

## **Trammel nets (Three walled nets)**



This is a much more efficient general purpose net, which can be used to catch a much wider variety of species ranging from cod and monk to soles and plaice. This net consists of three walls of netting in which the small fine meshed inner net is sandwiched between two outer layers of footrope so that all three hang vertically in the water. Slack netting is ensured by setting the netting loosely on to the headline and footrope and by having the inner net depth measuring approximately twice the outer net depth. This ensures that there is always plenty of slack net for the fish to become entangled in.

### **Method of fishing**

The procedure used when fishing fixed nets is similar whether gill, trammel or tangle nets are being used. The nets are usually fished in groups (or fleets as they are widely known) with the end of each fleet attached by bridles to a heavy weight or anchor on the seabed. Each weight or anchor is secured to a marker buoy or dhan flag on the surface by a length of rope equal to about twice the depth of water. Depths of water fished can be from 15 metres to 140 metres, with some fisheries going as deep as 1800 metres (deep-water monk and tangle nets).

Length of nets can vary from 50 metres to 200 metres and length of fleets from 300 metres to 2000 metres. The amount of netting being fished (set on the seabed) at any one time can range between 2 kilometres and 30 kilometres and soak times (the time a fleet is left on the seabed to fish) can range from a 6 hour tidal soak to 72 hours. These figures are dependent on which species are being targeted and whether there is any conflict with other boats using mobile fishing gear in the area. The nets are shot whilst steaming into the tide and are fished along the direction of the tidal stream, rather than across it (there are some exceptions to this). This reduces the chances of the nets being swept over or tangled in the strong tidal conditions found in many areas of the UK. The dhan is thrown overboard and the vessel steams away from it paying out the rope until it reaches the anchor which is quickly dropped overboard. The fleet of nets follows until the full length of netting has run out and the second anchor

and dhan follow. Retrieval of the gear is carried out in the same order with first the dhan, then the anchor and net followed by the remaining anchor and dhan.

Virtually all boats now use net haulers to help them retrieve the gear. The basic design consists of a rotating drum covered with rubber, which is driven by a hydraulic system run off the main engine. The rubber grips the net, allowing the hauler to take the strain of the net and pull it aboard. Variations on the basic design include belts or rubber spheres, which exert pressure on top of the netting creating more friction with the lower drum and the netting making it easier to haul the net.

## Long lines

Bottom set longlines are set along the seabed and anchored at each end. The main line, which may be several kilometres in length, comprise of ropes of different thickness' with the snoods of lighter material spaced out over its length. The ropes, often monofilament nowadays, thickness and snoods spacing is determined by the target species, the fishing conditions and the onboard handling machinery.

Most commercial longline operations use a mechanised system for handling the lines. This usually operates in successive phases:

- 1 hauling the longline and unhooking the fish;
- 2 cleaning the hooks;
- 3 storage of mainline snoods and hooks;
- 4 baiting the hooks; and
- 5 shooting the lines.

The degree of automation can vary with some of the smaller vessels using only a mechanised line hauler and cleaning, baiting and stowing hooks by hand, right up to the more modern deep sea liners with a fully automated system.

The catch of a liner is usually in better condition than that of a trawler, thereby selling for a better price. The size of fish being regulated by the hook size and species to a certain extent by the bait used. In some operations the gear is rigged so that some hooks are slightly above the seabed to be more effective for target species.

## Traps



Selection of shellfish traps

Traps in various forms of cages or baskets are used throughout the UK for the capture of crabs, lobsters, crayfish, *Nephrops*, shrimps, cuttlefish and several other species in lesser numbers. These pots differ in shape, size and construction materials according to the target species, and local practices. They all have one or more 'funnel' style entrance making it easy for the shellfish to get in but very difficult to escape again. They are usually baited and set on the bottom singly or in strings with a marker buoy at each end.

Vessels working this method need to have a large open deck area to enable them to carry large amounts of pots. They are fitted with a powerful creel hauler winch specially adapted to take the main rope with pots being lifted clear as they pass the winch. Some vessels are fitted with a chute to guide the pots over the boats side when shooting the gear. The pots are usually hauled each day with the catch being stored in vivier tanks (circulating sea water tanks) or in boxes covered with hessian to keep them alive until they are landed to the processor.

**For further information please contact:**

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