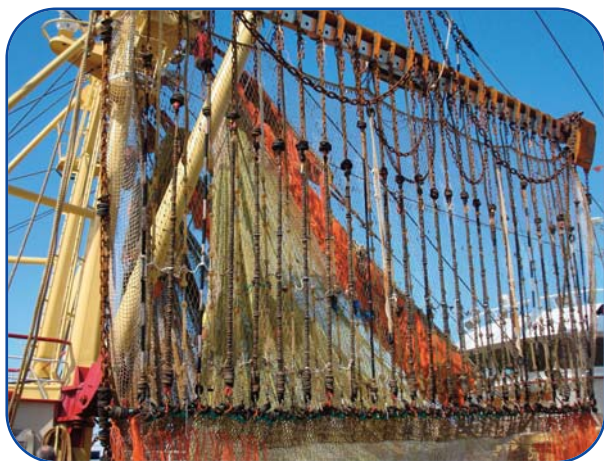


# Fact sheet: Alternative fishing gear

version November 2010

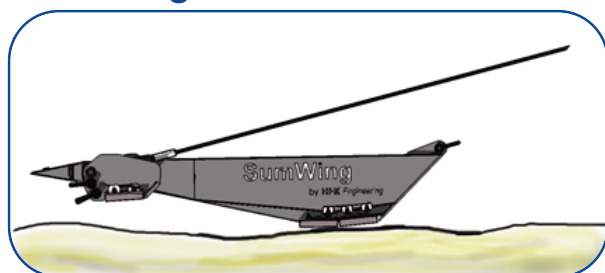
## Pulse trawl



As an alternative to the traditional beam trawl, the pulse trawl uses electrode carriers instead of tickler chains to startle the flatfish from the seabed. The pulse trawl emits electric pulses, current surges with a voltage of maximum 15 Volt, which startle the fish from the seabed and encourage them to swim into the net. This may have considerable benefits over the current beam-trawl fishery, as the pulse trawl has less contact with the seabed and that ensures a lower fuel consumption, less wear and tear to the gear and less seabed disturbance and bycatch. The energy savings that are currently achieved are around 45%. The quality of the caught fish is particularly good, because the fish have less contact under water with fishing gear and material. At the moment, pilot tests are being carried out with this method.

Besides the positive effects of the pulse trawl, there is some uncertainty about any possible negative effects. Until these uncertainties have been clarified, the Netherlands has permission to equip a maximum of 5% of the fleet with a pulse trawl. This percentage may be adjusted when more is known about the effects.

## SumWing



The SumWing is an alternative to the beam and the beam heads of traditional beam-trawl fishery. The SumWing is a wing profile that is guided by a nose, a probe.

The pulling points on the wing profile guide the fishing gear to the seabed. When the gear reaches the seabed, the wing turns so that it no longer guides downwards, but reaches an equilibrium just above the seabed. The SumWing has a hydrodynamic shape, which means it suffers less resistance from the water, both on going down and during fishing. The SumWing is filled with air, which means the gear in the water weighs less than half of the weight on land. Fuel savings with the SumWing run up to 20%. This method still uses tickler chains. The SumWing has some difficulties with major height differences in the seabed, which makes using the SumWing difficult in the southern North Sea. This is still being optimised.

Besides the SumWing as an alternative to the traditional beam trawl, including the smaller Euro cutters, a similar alternative is under development for shrimp cutters.

## Pulse Wing



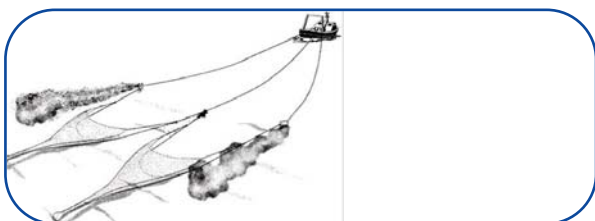
The Pulse Wing is a successful combination of both previously mentioned alternatives, the pulse trawl and the SumWing. Recently, the Pulse Wing has been used on a commercial basis. The method is still in full development, but the first results and cautious estimates indicate that the catch opportunities are at least equal to those of beam-trawl fishery. Fuel savings can run up to more than 60% in relation to the traditional beam trawl.

## Hydrorig



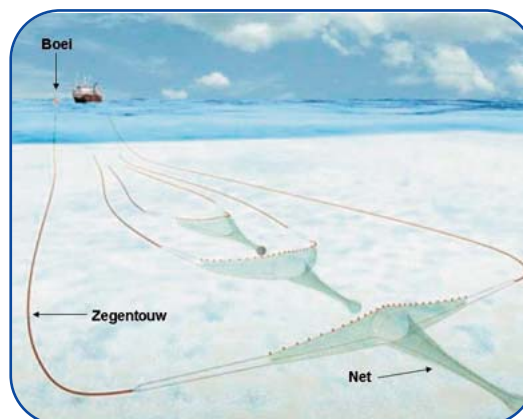
The hydrorig is an alternative to the beam that holds open the net in the traditional beam-trawl fishery. The more aerodynamic shape of the hydrorig has a lower resistance in the water than the traditional beam, which saves a lot of energy. The hydrorig is also an alternative to tickler chains, because this fishing gear generates a water flow that sucks the flatfish from the seabed. This means the hydrorig causes less seabed disturbance, saves energy and does not damage the fish. The shape of the hydrorig, in combination with the absence of tickler chains and a low fishing speed, also leads to a reduction of the undesired bycatch, i.e. a reduction of fish discards. However, the catch success is still below that of other fishing gear. This is still being optimised.

## Twinrig



In twinrig fishery, two seabed trawl nets are linked together in contrast to dragging the two loose nets in traditional beam-trawl fishery. On both sides of the linked nets, there are trawl boards that keep the net open. In the middle, the two nets are linked by a clump block that doubles up as weighting. The centre weight and the trawl boards produce dust clouds that startle the flatfish and make them swim to the middle. The fish continues to swim in front of the nets, because it stays away from the cables that are used to pull the nets. Due to exhaustion the fish eventually ends up in the net. Twinrig is a relatively light form of drag-net fishery and small cutters can fish a relatively large seabed surface with relatively little engine capacity. On average, a twinrigger uses less fuel and is a strongly favoured alternative to beam-trawl fishery. The best catches happen during good weather and in clear water, because the dust clouds are not effective enough in turbid water to startle the fish. In first instance, twinrig fishery is intended to catch cod, whiting, and haddock during the winter months, but during summer months it is used for fishing for plaice, dab, red mullet and langoustine.

## Flyshooting



The flyshooting method fishes with so-called seines, which are rectangular nets with long lines on the outsides. At the starting point, the net is fixed with an anchor. From that point, the ship sails half a circle whilst the net is being set up. Then the ship sails back to the starting point, marked with a dan (buoy), and the fishermen start to pull in the net. Because the ship does not need to drag a net through the water, the method is suitable for small cutters with a low engine capacity. The fuel consumption is lower in relation to a traditional beam trawl. This method only works well in daylight and when the water is clear, because the seabed fish need to see the seine ropes coming. Flyshooters therefore only fish during the day and that is best done in flat, sandy sea areas without obstacles. Flyshooting fishery is a seasonal fishery, and the most important target species are red mullet, tub gurnard, squid, seabass, mackerel, plaice and dab. Some species are available all year round, whilst others only for a limited number of months a year.

### References

1. Knowledge network Pulse wing and SumWing for flatfish
2. Knowledge network flyshooting fishery
3. Knowledge network Twinrig fishery for langoustine and plaice
4. Press release 20 August 2010 Pvis 'Combination of two fishing methods leads to sustainable pulse wing'
5. [www.sumwing.nl](http://www.sumwing.nl)
6. Report 'Bestaande vistuigen als mogelijke alternatief voor de boomkor' (Existing fishing gear as a possible alternative to the beam trawl) RIKZ, 2001

