



Fact Sheet – May 2020

Deepwater Prawn Trawl Authorised Modifications to Trawl Gear

Introduction

Recent research demonstrates that minor modifications to trawl gears have the potential for substantial benefits including improving catches of target species, while reducing bycatch, drag (and therefore fuel use) and habitat impacts, culminating in fewer overall environmental impacts.

Opportunity is now available to voluntarily use these and other modifications, some of which are already lawful and others authorised by a new Section 37 order.

In response to industry requests, opportunity is also now available to use lifting bags, Nordmøre-grids with bar spacing greater than 30 mm and longer sweeps on a trial basis.

Fishers are encouraged to use and refine the Nordmøre-grid, particularly if modifications such as lifting bags and longer sweeps are to be permitted into the future.

A copy of the order may be found on the DPI website.

Authorised modifications and potential benefits

The modifications authorised by the Section 37 Order are identified with “*”.

Otter boards: Smaller or more hydrodynamic otter boards may be used to reduce drag/fuel use. Note that changes to otter-board size and design may affect catches of prawns.

***Sweeps:** Sweeps up to 274 m (150 fathoms) in length may be used on single-gear only, noting that shorter sweeps can dramatically reduce the bycatch of finfish. Shorter sweeps can also increase wing-end spread.

Ground chain: Less or smaller-gauge chain may be used to reduce drag/fuel use.

***Soft-brush ground gear (dangler chains):** Short lengths of chain up to 10 links each may be attached directly to the footrope by the centre link of the chain such that the ends of the chain hang free (termed ‘soft-brush ground gear’). If soft-brush ground gear is used, the trawl must not also be fitted with other ground chain.

***Gauge of chain:** In response to issues with the availability of chain, ground chain and soft-brush ground gear may be constructed of chain up to 13 mm in diameter (instead of 12 mm), noting that less or smaller-gauge chain will reduce drag/fuel use.

Net hanging ratio: Alternate hanging ratios may be used to change the lateral opening of the meshes in the net to enhance selectivity.

***Larger-mesh (trawl body):** Mesh not exceeding 100 mm may be used throughout the body of the net (including the belly, wings and extension).

Double- or dual- and triple-rigs: Two or three nets of any headline length may be used at any one time subject to the total headline length of all nets combined not exceeding 60 metres. Trials show that compared to all other prawn-trawl configurations, triple rig had the greatest spread ratios, lowest drag and least fuel consumption. The triple rig could represent the most suitable configuration from an environmental perspective given smaller and fewer otter boards and reduced bottom contact.

Wing heights: Reduced wing heights may be used to reduce drag and fuel use. Lower wing heights can also reduce the length of the trawl, which has also been shown to reduce bycatch.

***Square-shaped mesh to wings and side panels:** The mesh of the wings and side panels of a net may be constructed of mesh not less than 38 mm if the mesh hung on the bar so that the meshes are square shaped. Research shows that square-shaped mesh wings and side panels reduce the bycatch of small prawns.

Net taper: Steeper net tapers may be applied to reduce drag (fuel use) and bycatch.

***Larger mesh (codends):** Codends may be constructed of larger mesh, up to 60 mm in the case of a diamond-mesh codend and up to 50 mm in the case of a square-mesh codend.

SAFE (simple anterior fish excluder): A SAFE may be used. A SAFE is a narrow banner of PVC-type material attached between the otter boards. Trials demonstrated that fitting a SAFE can reduce the bycatch of fish.

***Bycatch reduction devices (BRDs):** Nets not fitted with a BRD may be used.

***Nordmøre grid BRD:** Nordmøre-grids with bar spacing greater than 30 mm may be used to reduce bycatch and improve product quality. Fishers are encouraged to use and refine the Nordmøre-grid, particularly if modifications such as lifting bags and longer sweeps are to be permitted into the future.

***Modified big-eye BRD:** The big-eye BRD may be fitted with rigid material to keep the escape gap open in lieu of fitting floats to the rear panel and chain to the front panel.

***Fish-eyes and other behavioural-type BRDs:** Any behavioural-type BRD, such as a fish-eye BRD, may be used subject to:

- (a) the opening or escape hole being not less than 300 mm wide; and
- (b) the device being positioned not more than 1.5 metres forward of the codend drawstring.

A behavioural-type BRD exploits fish behaviour and water flow to exclude fish from a net. Any behavioural-type BRD must be positioned not more than 1.5 metres forward of the

codend drawstring and must have an opening large enough to allow bycatch species to escape.



Photo: The Fish-eye BRD is a behavioural-type BRD that may be used.

***Large-mesh panel BRD:** A panel of square-shaped mesh constructed of any type of material (hard or soft) may be used subject to the following:

- (a) the panel being not less than 400 mm wide and 500 mm in length;
- (b) the panel being positioned not more than 1.5 metres forward of the codend drawstring;
- (c) if the panel comprises soft netting material;
 - (i) the mesh must be not less than 100 mm;
 - (ii) the mesh must be hung on the bar so that it is square shaped;
 - (iii) the twine diameter of the netting must be not more than 5 mm; and
 - (iv) the panel must be sewn into the net (top and bottom only) using the bating rates for the mesh sizes set out in Table 1

Table 1: Bating rates applicable to the large-mesh panel BRD.

Column 1	Column 2
Bating rate	Mesh size
At least 6 points to each bar on the panel	100–124 mm
At least 8 points to each bar on the panel	>125 mm

- (d) if the panel comprises rigid mesh material:
 - (i) the mesh must be not less than 50 mm (inside mesh measurement) from one bar to the opposite bar in both directions; and (*continues next page*)
 - (ii) the diameter of the bars of the rigid mesh panel must be not more than 5 mm.

- (e) if a rigid frame is applied to the outside of the BRD the rigid frame must be not less than 400 mm wide and 500 mm high along the inside edge of the rigid frame (inside frame measurement).

The main difference between the large-mesh panel BRD and the approved ocean square-mesh panel BRD is that the large-mesh panel BRD must be constructed of larger-size mesh and the overall size of the panel may be slightly smaller.

***Lifting bags:** The codend of a net may be encompassed with an outer cover of mesh not less than 90 mm throughout with lifting straps attached. Lifting bags support the codend and may help maintain product quality when large catches are taken.

More information

Research and gear

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Management and Section 37 order

Commercial Fisheries Management hotline 1300 726 488

For updates go to www.dpi.nsw.gov.au

Reference number: OUT19/15410

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