



Fact Sheet – May 2020

Inshore & Offshore 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 new bycatch reduction devices (BRDs) including a modified version of the big-eye BRD to reduce bycatch. Fishers are also reminded of the opportunity to acquire quota shares and quota (for the fishing period concerned) to cover quota species taken.

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

Authorised modifications and potential benefits (all waters)

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: Shorter sweeps to reduce the bycatch of finfish may be used. 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 (called ‘soft-brush ground gear’). If soft-brush ground gear is used, the net must not also be fitted with other 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.

***Spreading mechanism (beam):** A single beam between two sleds may be used to spread one or more of the nets (or try net) subject to:

- (a) the beam being a single straight structure;
- (b) the sleds being no greater than 150 mm wide at the base (shoe); and
- (c) the points of attachment of the headline and footrope to the sleds being not more than 1 m apart.

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 100mm may be used throughout the body of the net (including the belly, wings and extension).

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 mesh not less than 38 mm if the mesh is 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.

Quad rig: Four trawls of any headline length may be used at any one time subject to the total headline length of all trawls combined not exceeding the maximum headline length of 55 m that applies from 1 May, 2019. Trials show that compared to all other prawn-trawl configurations, triple- and quad-rigs 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, but a quad rig also has efficiency benefits.

***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.

***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 m 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 m 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 m 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 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
 - (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.

Authorised modifications for targeting school prawns only

The following modifications are authorised for use only when targeting school prawn and only when operating in waters within 2 nautical miles of the natural coastline. Providing for their use aims to cater for those that target school prawns in the Estuary Prawn Trawl fishery and from time to time inshore ocean waters.

***Smaller mesh in the body and wings (diamond-shaped mesh):** The mesh of the body of the net (including belly, wings and extension) may be constructed of 34 to 40 mm diamond-shaped mesh if steep side tapers are applied and wing depths are reduced as follows:

- (a) the depth of the wings must not exceed 3.0 metres measured in a straight line from the inside edge of the top knot (along the top seam) to the inside edge of the bottom knot (at the bottom seam) along any single line (or row) of meshes when stretched; and
- (b) the ratio of centre-trawl length to headline length must not exceed the ratio specified in column 1 of Table 2 below when using the net configuration opposite in column 2.

Table 2: Maximum centre-trawl length to headline length ratios.

Column 1	Column 2
Maximum ratio	Net configuration
0.60	Single gear (1 net)
0.60	Double or dual gear (2 nets)
0.75	Triple gear (3 nets)
0.90	Quad gear (4 nets)

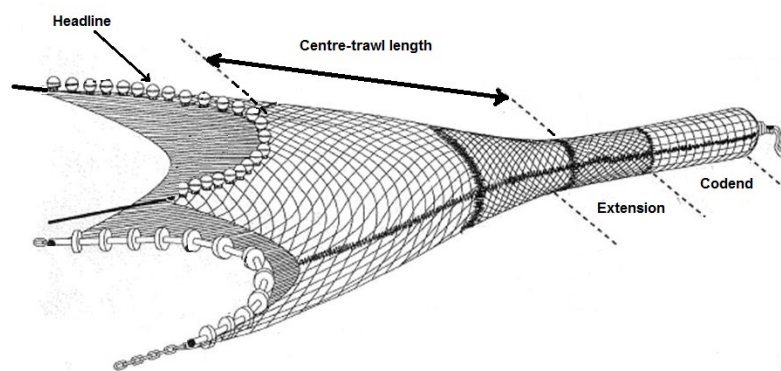


Diagram 1: Diagram showing 'centre-trawl length' and 'headline'

Research shows that 40-mm diamond-shaped mesh in the wings and body of a net is larger than appropriate for the sizes of school prawns targeted in some waters. Using an appropriate mesh size will facilitate adopting other modifications such as steeper side tapers and reduced wing heights that can improve efficiency and minimise environmental impacts.

***Square-shaped mesh to wings and side panels:** The mesh of the wings and side panels of a net may be constructed of 34 to 40 mm mesh hung on the bar so that the meshes are square-shaped. If square-shaped mesh is applied to the wings or side panel of a net, the requirements above relating to wing depths do not apply. Research shows that square-shaped mesh wings and side panels reduce bycatch of small prawns.

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

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