NSW GOVERNMENT | Department of Primary Industries

Fact Sheet – June 2019

Estuary Prawn Trawl Fishery
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 modifications, some of which are already lawful and others authorised by a new Section 37 order.

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 school 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.

***Spreading mechanism (beam):** A single beam between two sleds may be used to spread one or more of the trawls 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. Alternate hanging ratios are only likely to be relevant if changing the mesh size in the body of the trawl (refer below).

Wing heights: Reduced wing heights may be used to reduce drag and fuel use. Lower wing heights will also reduce the length of the trawl, which has also been shown to reduce bycatch. Reduced wing heights are only likely to be feasible if smaller mesh (refer below) is used to mitigate loss of the sizes of prawns targeted.

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 substantially reduce the bycatches of some fish.

***Double- or dual- and triple- and quad-rigs:** 2, 3 or 4 trawls of any headline length may be used subject to the total headline length of all trawls combined not exceeding the total headline length in column 1 of Table 1 below when used in the waters opposite in column 2.

Table 1: Maximum combined headline lengths.

Column 1	**Column 2**
Total headline length	**Waters**
15 metres	Clarence River
11 metres	Hunter River
11 metres	Hawkesbury River (upstream of Juno Point / Eleanor Bluff)
22 metres	Hawkesbury River (downstream of Juno Point / Eleanor Bluff)

Trials show that 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.

Net taper: Steeper side tapers (i.e. 1P5B) may be applied to reduce drag (fuel use) and bycatch. Steeper tapers are only likely to be feasible if smaller mesh is used to mitigate loss of prawns.

***Smaller mesh in the body and wings (diamond-shaped mesh):** The mesh of the body of the trawl (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)

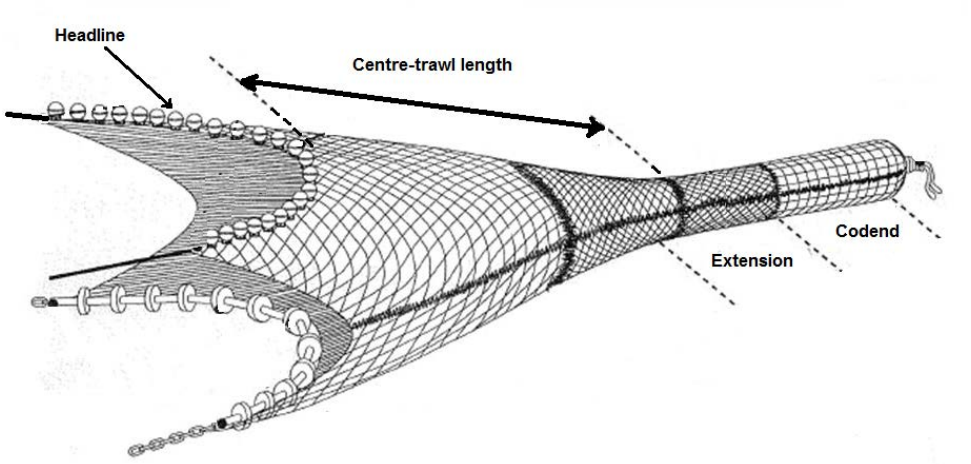

Diagram 1: Diagram showing 'centre-trawl length' and 'headline'.

Research shows that 40-mm diamond-shaped mesh in the wings and body of a trawl is larger than appropriate for the sizes of prawns targeted in some of waters of the fishery at certain times (e.g. the Clarence River). Using an appropriate mesh size will facilitate the adoption of other modifications such as steeper side tapers and reduced wing heights that can improve efficiency and minimise environmental impacts.

***Square-shaped mesh in wings and side panels:** The mesh of the wings and side panels of a trawl 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 panels of a trawl, the requirements above relating to side tapers and wing depths do not apply. Research shows that square-shaped mesh wings/side panels reduce the bycatch of small prawns.

Larger mesh square-mesh codends: Square-mesh codends may be constructed of mesh larger than the minimum 27 mm to reduce bycatches, including small prawns.

***Try net:** A try net may be used to sample prawn abundances and sizes. The try net may be used while the main trawl net is deployed. A try net:

(a) may be constructed of diamond-shaped mesh net not less than 32 mm or square-shaped mesh net not less than 27 mm;

(b) must be attached to a frame not exceeding 0.6 metres in width and 0.5 metres in height; and

(c) must not exceed 2 metres from the centre of the frame to the extremity of the net.

***Diamond BRD (Clarence River):** Clarence River endorsement holders are authorised to use a Diamond bycatch reduction device (BRD) in lieu of the BRDs approved by the Director-General pursuant to Estuary Prawn Trawl Share Management Plan, subject to:

(a) each side of the diamond must be not less than 11 bars long;

(b) the point of the diamond closest the codend drawstring must be within 3 meshes of where the [square-mesh] codend is joined to the body of the net; and

(c) the [square-mesh] codend is not more than 80 bars long.

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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